

**INTERNATIONAL CODE COUNCIL
2012/2013 CODE DEVELOPMENT CYCLE
Group A (2012)**

**PROPOSED CHANGES TO THE
2012 EDITIONS OF THE**

INTERNATIONAL BUILDING CODE®

INTERNATIONAL FUEL GAS CODE®

INTERNATIONAL MECHANICAL CODE®

INTERNATIONAL PLUMBING CODE®

*INTERNATIONAL PRIVATE SEWAGE DISPOSAL
CODE®*



**April 29th – May 8th, 2012
Sheraton Dallas Hotel
Dallas, TX**

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By

International Code Council, Inc.

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TABLE OF CONTENTS

(Group A)

	PAGE
Introduction	ii
2012 ICC Code Development Hearings	ii
Registration and Voting	ii
Advanced Registration.....	iii
Code Development Process Changes	iii
Procedures.....	iii
Assembly Action	iv
Multiple Part Code Change Proposals	iv
Group A and B Code Changes by Committee	v
Group A Code Development Committee Responsibilities.....	vi
Analysis Statements	vi
Reference Standards.....	vi
Referenced Standards Updates.....	vi
Modifications	vii
Code Correlation Committee	viii
ICC Website	viii
2012/2013 Code Development Schedule.....	ix
2012/2013 Staff Secretaries.....	x
Assignment Crossover — Within the IBC.....	xi
CP #28-05 Code Development	xii
Cross Index of Proposed Changes	xxiv
Hearing Schedule	xxix
2012 Proposed Changes	xxx

INTRODUCTION

The proposed changes published herein have been submitted in accordance with established procedures and are distributed for review. The publication of these changes constitutes neither endorsement nor question of them but is in accordance with established procedures so that any interested individuals may make their views known to the relevant code committee and others similarly interested. In furtherance of this purpose, the committee will hold an open public hearing at the date and place shown below for the purpose of receiving comments and arguments for or against such proposed changes. Those who are interested in testifying on any of the published changes are expected to be represented at these hearings.

This compilation of code change proposals is available in electronic form only. As part of ICC's green initiative, ICC will no longer print and distribute this document. The compilation of code change proposals will be posted on the ICC website, and CD copies will be distributed to all interested parties on our list.

2012 ICC CODE DEVELOPMENT HEARINGS

These proposed changes will be discussed in public hearings to be held on April 29th, 2012 through May 8th, 2012 at the Sheraton Dallas Hotel, Dallas, Texas. The code committees will conduct their public hearings in accordance with the schedule shown on page xxix.

REGISTRATION AND VOTING

All members of ICC may vote on any assembly motion on proposed code changes to all International Codes. **For identification purposes, eligible voting members must register, at no cost, in order to vote.** The registration desk will be open in the lobby of the convention center according to the following schedule:

Saturday, April 28 th	4:00 pm to 6:00 pm
Sunday, April 29 th through Tuesday, May 8 th	7:30 am to 5:00 pm

Council Policy #28-Code Development (page xii) requires that ICC's membership records regarding ICC members reflect the eligible voters 10 days prior to the start of the Code Development Hearings. This process includes new as well as changes to voting status. Section 5.7.4 of CP #28 (page xix) reads as follows:

5.7.4 Eligible Voters: All members of ICC in attendance at the public hearing shall be eligible to vote on floor motions. Each member is entitled to one vote, except that each Governmental Member Voting Representative in attendance may vote on behalf of its Governmental Member. Code Development Committee members shall be eligible to vote on floor motions. Application, whether new or updated, for ICC membership must be received by the Code Council ten days prior to the commencement of the first day of the public hearing.

As such, new membership applications as well as renewal applications must be received by ICC's Member Services Department by April 18th, 2012. These records will be used to verify eligible voter status for the Code Development Hearings. Members are strongly encouraged to review their membership records for accuracy well in advance of the hearings so that any necessary changes are made prior to the April 18th, 2012 deadline. For information on application for new membership and membership renewal, please go to www.iccsafe.org/membership/join.html or call ICC Member Services at 1-888-ICC SAFE (422-7233)

It should be noted that a corporate member has a single vote. Only one representative of a corporate member will be issued a voting badge. ICC Staff will be contacting corporate members regarding who the designated voting representative will be.

ADVANCED REGISTRATION

You are encouraged to advance register by filling out the registration form available at www.iccsafe.org/springhearings.

CODE DEVELOPMENT PROCESS CHANGES

As noted in the posted Advisory Statement of February 4, 2009, the revised Code Development Process includes maintaining the current 3-year publication cycle with a single cycle of code development between code editions. The schedule for the 2012/2013 Code Development Cycle is the first schedule for the revised code development process (see page ix).

PROCEDURES

The procedures for the conduct of the public hearing are published in *Council Policy #28-Code Development (CP#28)* (“Procedures”) on page xii. The attention of interested parties is specifically directed to Section 5.0 of the Procedures. These procedures indicate the conduct of, and opportunity to participate in the ICC Code Development Process. Please review these procedures carefully to familiarize yourself with the process.

There have been a number of revisions to the procedures. Included among these revisions are the following:

- Section 1.6: **Recording.** This section was revised to clarify that ICC maintains sole ownership in the content of the hearings and has the right to control its subsequent distribution. In addition, the technology references were updated, using the term “recording” to replace “videotaping”.
- Section 2.4 **Emergency Procedures.** This section was revised create a 'metric' to aid in the determination of when an issue rises to the level of concern appropriate to an emergency amendment. Furthermore, it now stipulates a process by which a proposed Emergency Amendment is reviewed by the ICC Codes and Standards Council who is responsible for the implementation and oversight of ICC’s Code Development Process.
- Section 3.3.1
&
Section 6.4.1 **Proponent.** An e-mail address for each code change/public comment proponent will be published in the monograph, unless the proponent requests otherwise.
- Section 3.3.5.3
&
Section 6.4.5 **Substantiation.** ICC evaluates whether substantiating material is germane, but the amendment makes it clear that ICC does not in all circumstances evaluate substantiating material for quality or accuracy.
- Section 3.3.5.6 **Cost Impact.** The proponent should submit information that supports their claim regarding cost impact. Any information submitted will be considered by the code development committee. This language is intended to emphasize the need to provide information on how the proposed change will affect the cost of construction.
- Section 3.6.3.1 If a proposed new standard is not submitted in at least draft form, the corresponding code change proposal shall be considered incomplete and shall not be processed.
- Section 4.5.1 **Standards referenced in the I-Codes.** The deadline for availability of updated referenced standards and receipt by the Secretariat is December 1st of the third year of each code cycle. For the 2012/2013 cycle, the deadline is December 1st, 2014.

- Section 5.2.2 **Conflict of interest.** The original language, “Violation thereof shall result in the immediate removal of the committee member from the committee.” was removed because there was no mechanism to enforce it. The recourse for someone who feels this section has been violated is to appeal.
- Section 5.4.2 **Open meetings.** A provision has been added that stipulates that participants shall not advocate a position on specific code changes with Committee Members other than through the methods provided in this policy.
- Section 5.4.3
&
Section 7.3.3 **Presentation of Material at the Public Hearing.** All participants are to make it clear what interests they are representing. This disclosure provides additional information upon which to evaluate the testimony.
- Section 5.7 **Assembly consideration.** A successful assembly action will no longer be the initial motion at the Final Action Consideration.
- Section 5.7.3 **Assembly action.** A successful assembly action shall be a majority vote of the votes cast by eligible voters, rather than a 2/3 majority (see below).
- Section 5.7.4 **Eligible voters.** This section is revised to clarify that each member, including Governmental Member Voting Representatives, gets only one vote.
- Section 7.4 **Eligible voters.** This section requires that all Governmental Membership applications must be received by April 1 of the year of the Final Actions for a Governmental Member to be eligible to vote at the Final Action Hearings.

ASSEMBLY ACTION

The procedures regarding assembly action at the Code Development Hearings have been revised (see Section 5.7 of CP #28 on page xix). Some important items to note regarding assembly action are:

- A successful assembly action now requires a simple majority rather than a 2/3 majority.
- After the committee decision on a code change proposal is announced by the moderator, any one in the assembly may make a motion for assembly action.
- After a motion for assembly action is made and seconded, the moderator calls for a floor vote in accordance with Section 5.7.2. *No additional testimony will be permitted.*
- A code change proposal that receives a successful assembly action will be placed on the Final Action Hearing Agenda for individual consideration.

MULTIPLE PART CODE CHANGE PROPOSALS

It is common for ICC to receive code change proposals for more than one code or more than 1 part of a code that is the responsibility of more than one committee. For instance, a code change proposal could be proposing related changes to the text of IBC Chapter 4 (IBC-General), IBC Chapter 7 (IBC-Fire Safety), and the IFC Chapter 27 (IFC). When this occurs, a single committee will now hear all of the parts, unless one of the parts is a change to the IRC, in which case the respective IRC committee will hear that part separately.

GROUP A AND GROUP B CODE CHANGES

Starting with this 2012/2013 Code Development Cycle, for the development of the 2015 Edition of the I-Codes, there are two groups of code development committees and they will meet in separate years. The groupings are as follows:

Group A Codes (Heard in 2012)	Group B Codes (Heard in 2013)
<i>International Building Code Committees:</i> <i>IBC-Fire Safety (Chapters: 7, 8, 9, 14, 26 and App. D)</i> <i>IBC-General (Chapters: 2-6, 12, 13, 27-34, App. A, B, C, F, H, K)</i> <i>IBC-Means of Egress (Chapters: 10, 11 and App. E)</i> <i>IBC-Structural (Chapters: 15-25 and App. G, I, J, L, M)</i>	<i>Administrative Provisions (Chapter 1 all codes except IRC and IECC, referenced standards administrative updates, and designated definitions)</i> <i>Administrative Code Committee</i>
<i>International Fuel Gas Code</i> <i>IFGC Committee</i>	<i>International Energy Conservation Code (see note 1)</i> <i>Commercial Energy Committee</i> <i>Residential Energy Committee</i>
<i>International Mechanical Code</i> <i>IMC Committee</i>	<i>International Existing Building Code</i> <i>IEBC Committee</i>
<i>International Plumbing Code</i> <i>IPC Committee</i>	<i>International Fire Code</i> <i>IFC Committee</i>
<i>International Private Sewage Disposal Code</i> <i>IPC Committee</i>	<i>International Green Construction Code Committees:</i> <i>IGCC—Energy/Water Committee (Chapters: 6 and 7)</i> <i>IGCC—General Committee (Chapters: 2-5, 8-11 and Append)</i>
	<i>International Performance Code (see note 2)</i> <i>ICC Performance Code Committee</i>
	<i>International Property Maintenance Code</i> <i>IPMC/IZC Committee</i>
	<i>International Wildland-Urban Interface Code</i> <i>IFC Committee</i>
	<i>International Zoning Code</i> <i>IPMC/IZC Committee</i>
	<i>International Residential Code Committees:</i> <i>IRC-B (Chapters: 1-10 and App. E, F, G, H, J, K, L, M, O)</i> <i>IRC-M/P (Chapters: 12-33 and App. I, P)</i>
	<i>International Swimming Pool and Spa Code</i> <i>ISPSC Committee</i>

NOTE:

1. Residential Energy Committee is responsible for Chapter 11 of the IRC and the Residential Provisions of the IECC.
2. In anticipation of minimal code change activity, a ICC Performance Committee has not been appointed. Any changes will be considered by the IFC Committee.

GROUP A CODE DEVELOPMENT COMMITTEE RESPONSIBILITIES

Some sections of the International Codes have a letter designation in brackets in front of them. For instance, Section 301.1.4 of the IEBC has a [B] in front of it, meaning that this section is the responsibility of one of the IBC Code Development Committees (in this case, IBC-S).

Code change proposals submitted for such code sections that have a bracketed letter designation in front of them will be heard by the respective committee responsible for such code sections. Because different committees will meet in different years, some proposals for a given code will be heard by a committee in a different year than the year in which the primary committee for this code meets.

Note that there are several code change proposals in the IBC-Structural hearing order that are changes to the International Existing Building Code (marked with prefix "EB"). These are proposed changes to sections of the existing building code that are the responsibility of the IBC-Structural Code Development Committee. A complete summary of the Group A and Group B Code Development Committees' responsibilities can be view at the ICC Website: http://www.iccsafe.org/cs/codes/Documents/2012-13cycle/GroupA-B_CDC-Responsibilities.pdf.

ANALYSIS STATEMENTS

Various proposed changes published herein contain an "analysis" that appears after the proponent's reason. These comments do not advocate action by the code committees or the voting membership for or against a proposal. The purpose of such comments is to identify pertinent information that is relevant to the consideration of the proposed change by all interested parties, including those testifying, the code committees and the voting membership. Staff analyses customarily identify such things as: conflicts and duplication within a proposed change and with other proposed changes and/or current code text; deficiencies in proposed text and/or substantiation; text problems such as wording defects and vagueness; background information on the development of current text; and staff's review of proposed reference standards for compliance with the Procedures. Lack of an analysis indicates neither support for, nor opposition to a proposal.

REFERENCE STANDARDS

Proposed changes that include the addition of a reference to a new standard (i.e. a standard that is not currently referenced in the I-Codes.) will include in the proposal the number, title and edition of the proposed standard. This identifies to all interested parties the precise document that is being proposed and which would be included in the referenced standards chapter of the code if the proposed change is approved. Section 3.6.3.1 of CP #28 now requires that a code change proposal will not be processed unless a consensus draft of the standard has been provided. Proponents of code changes which propose a new standard have been directed to forward copies of the standard to the Code Committee. An analysis statement will be posted on the ICC website providing information regarding standard content, such as enforceable language, references to proprietary products or services, and references to consensus procedure. The analysis statements for referenced standards will be posted on or before March 28th, 2012. This information will also be published and made available at the hearings.

REFERENCED STANDARDS UPDATES

Administrative updates of any standards already referenced in any of the I-Codes will be contained in a code change proposal for consideration by the Administrative Code Development Committee. The Administrative Code Development Committee is a Group B committee which will conduct hearings on the administrative provisions (Chapter 1 and certain definitions) of all I-Codes, and the referenced standards update. Therefore, this committee will conduct its code development hearing during the code development hearings in 2013.

It should be noted that, in accordance with Section 4.5.1 of CP #28 (see page xvi), standards promulgators will have until December 1, 2014 to finalize and publish any updates to standards in the administrative update. If the standard update is not finalized and published by December 1, 2014, the respective I-Codes will be revised to reference the previously listed year edition of the standard.

MODIFICATIONS

Those who are submitting a modification for consideration by the respective Code Development Committee are required to submit a Copyright Release in order to have their modifications considered (Section 3.3.4.5 of CP #28). It is preferred that such release be executed in advance – the form is at <http://www.iccsafe.org/cs/codes/publicforms.htm>. Copyright release forms will also be available at the hearings. Please note that an individual need only sign one copyright release for submittals of all code change proposals, modifications, and public comments in this code change cycle for which the individual might be responsible. **Please be sure to review Section 5.5.2 of CP #28 for the modification process.** The Chair of the respective code development committee rules a modification in or out of order. That ruling is final, with no challenge allowed. The proponent submitting a modification is required to supply 20 printed copies. The minimum font size must be 16 point.

Example:

Original code change proposal.

The original code change proposal requested the following change to Section 305.3 of one of our I-Codes: (Note that the example is fictional.)

G10-12 305.13

Proponent: John West representing self

Revise as follows:

305.3 Interior surfaces. All interior surfaces, including windows and doors, shall be maintained in good and clean condition. Peeling, chipping, flaking or abraded paint shall be repaired, removed or covered. Cracked or loose plaster, ~~decayed wood~~ and other defective surface conditions shall be corrected. Surfaces of porous materials made of or containing organic materials, such as but not limited to wood, textiles, paint, cellulose insulation, and paper, including paper-faced gypsum board, that have visible signs of mold or mildew shall be removed and replaced or remediated in an approved manner.

Exception: Porous materials that do not contain organic materials, such as clean unpainted bricks and concrete.

Proposed modification:

A modification to the code change proposal is proposed:

1. To add “and sanitary” after “clean” in the first sentence.
2. To add “or water permeable” after “porous” in the third sentence.
3. Delete “in an approved manner.” in the last sentence.
4. Delete the proposed new exception.

The modification should read as follows. Note that the font style is Ariel, and the font size is 16 pt. The ~~cross-out, underline~~ format is removed from the text of the original proposal and the requested revisions in the original proposal are made and shown as original text. The modification to the original proposal is shown with ~~cross-out, underline~~ format applied to the changes proposed in the modification.

Example of proposed modification:

G10-12
305.13

Proponent: Sam Sumter representing self

Modify the proposal as follows:

305.3 Interior surfaces. All interior surfaces, including windows and doors, shall be maintained in good, ~~and~~ clean and sanitary condition. Peeling, chipping, flaking or abraded paint shall be repaired, removed or covered. Cracked or loose plaster and other defective surface conditions shall be corrected. Surfaces of porous or water permeable materials made of or containing organic materials, such as but not limited to wood, textiles, paint, cellulose insulation, and paper, including paper-faced gypsum board, that have visible signs of mold or mildew shall be removed and replaced or remediated ~~in an approved manner.~~

Exception: ~~Porous materials that do not contain organic materials, such as clean unpainted bricks and concrete.~~

Note: The modification should be able to be shown on the overhead screen on a single page. Only show the pertinent part of the code change proposal that shows the intended revisions. The entire code change proposal need not be shown.

CODE CORRELATION COMMITTEE

In every code change cycle, there are code change proposals that are strictly editorial. The Code Correlation Committee approves all proposals deemed editorial. A list of code correlation committee actions are shown at the end of this document (CCC-1).

ICC WEBSITE – [WWW.ICCSAFE.ORG](http://www.iccsafe.org)

This document is posted on the ICC Website, www.iccsafe.org. While great care has been exercised in the publication of this document, errata to proposed changes may occur. Errata, if any, will be identified in updates posted prior to the Code Development Hearings on the ICC website at <http://www.iccsafe.org>. Users are encouraged to periodically review the ICC Website for updates to the 2012/2013 Code Development Cycle-Group A (2012) Proposed Changes. Additionally, analysis statements for code changes which propose a new referenced standard will be updated to reflect the staff review of the standard for compliance with Section 3.6 of the Procedures.

PROPONENT CONTACT INFORMATION

For most of the code change proposals, an e-mail address for the proponent has been provided.

2012/2013 ICC CODE DEVELOPMENT SCHEDULE

STEP IN CODE DEVELOPMENT CYCLE	DATE	
	2012 – Group A Codes IBC, IFGC, IMC, IPC, IPSDC (See Notes)	2013 – Group B Codes Admin, ICCPC, IEBC, IECC, IFC, IgCC, IPMC, ISPSC, IRC, IWUIC, IZC (See Notes)
2012 EDITION OF I-CODES PUBLISHED	April 30, 2011	
DEADLINE FOR RECEIPT OF APPLICATIONS FOR ALL CODE COMMITTEES	June 1, 2011 (updated to July 1 for IECC and IRC – Energy; August 1 for IgCC and ISPSC)	
DEADLINE FOR RECEIPT OF CODE CHANGE PROPOSALS	January 3, 2012	January 3, 2013
WEB POSTING OF “PROPOSED CHANGES TO THE I-CODES”	March 12, 2012	March 11, 2013
DISTRIBUTION DATE OF “PROPOSED CHANGES TO THE I-CODES” (CD only)	April 2, 2012	April 1, 2013
CODE DEVELOPMENT HEARING (CDH)	April 29 – May 6, 2012 Sheraton Dallas Hotel Dallas, TX	April 21 – 28, 2013 Sheraton Dallas Hotel Dallas, TX
WEB POSTING OF “REPORT OF THE PUBLIC HEARING”	June 8, 2012	May 31, 2013
DISTRIBUTION DATE OF “REPORT OF THE PUBLIC HEARING” (CD only)	June 29, 2012	June 21, 2013
DEADLINE FOR RECEIPT OF PUBLIC COMMENTS	August 1, 2012	July 15, 2013
WEB POSTING OF PUBLIC COMMENTS “FINAL ACTION AGENDA”	September 10, 2012	August 28, 2013
DISTRIBUTION DATE OF PUBLIC COMMENTS “FINAL ACTION AGENDA” (CD only)	October 1, 2012	September 16, 2013
FINAL ACTION HEARING (FAH)	October 24 – 28, 2012 Oregon Convention Center Portland, OR	October 2 – 9, 2013 Atlantic City Convention Center Atlantic City, NJ
ANNUAL CONFERENCES	October 21 – 24, 2012 Oregon Convention Center Portland, OR	September 29 – October 2, 2013 Atlantic City Convention Center Atlantic City, NJ

Notes:

- Be sure to review the “Group A and Group B Code Development Committee Responsibilities” posted at www.iccsafe.org/responsibilities which identifies committee responsibilities which are different than Group A and Group B codes which may impact the applicable code change cycle and resulting code change deadline.
- The International Green Construction Code (IgCC) and International Swimming Pool and Spa Code (ISPSC) to undergo a full cycle of code development in 2011 resulting in 2012 editions published in March/2012
- Group B “Admin” includes code change proposals submitted to Chapter 1 of all the I-Codes except the ICCPC, IECC and IRC and the administrative update of referenced standards in the 2012 I-Codes
- Start 2015/2016 Code Development Cycle with Group A code change proposals due January 5, 2015

2012/2013 STAFF SECRETARIES

GROUP A (2012)

IBC-Fire Safety Chapters 7, 8, 9, 14, 26	IBC-General Chapters 1-6, 12, 13, 27-34	IBC-Means of Egress Chapters 10, 11	IBC-Structural Chapters 15-25
Ed Wirtschoreck ICC Chicago District Office 1-888-ICC-SAFE, ext 4317 FAX: 708/799-0320 ewirtschoreck@iccsafe.org	Beth Tubbs ICC Northbridge Field Office 1-888-ICC-SAFE, ext 7708 FAX: 419/ 730-6531 btubbs@iccsafe.org	Kim Paarlberg ICC Indianapolis Field Office 1-888-ICC-SAFE, ext 4306 FAX: 708/799-0320 kpaarlberg@iccsafe.org	Alan Carr ICC NW Resource Center 1-888-ICC-SAFE, ext 7601 FAX: 425/637-8939 acarr@iccsafe.org
IFGC	IMC	IPC/IPSDC	
Gregg Gress ICC Chicago District Office 1-888-ICC-SAFE, ext 4343 FAX: 708/799-0320 ggress@iccsafe.org	Gregg Gress ICC Chicago District Office 1-888-ICC-SAFE, ext 4343 FAX: 708/799-0320 ggress@iccsafe.org	Fred Grable ICC Chicago District Office 1-888-ICC-SAFE, ext 4359 FAX: 708/799-0320 fgrable@iccsafe.org	

GROUP B (2013)

ADMINISTRATIVE Chapter 1 All Codes Except IRC	IEBC	IECC-Commercial	IECC-Residential
Kim Paarlberg ICC Indianapolis Field Office 1-888-ICC-SAFE, ext 4306 FAX: 708/799-0320 kpaarlberg@iccsafe.org	Beth Tubbs ICC Northbridge Field Office 1-888-ICC-SAFE, ext 7708 FAX: 419/ 730-6531 btubbs@iccsafe.org	Dave Bowman ICC Chicago District Office 1-888-ICC-SAFE, ext 4323 FAX: 708/799-0320 dbowman@iccsafe.org	Dave Bowman ICC Chicago District Office 1-888-ICC-SAFE, ext 4323 FAX: 708/799-0320 dbowman@iccsafe.org
IFC	IgCC-General	IgCC-Energy/Water	ICC PC
Bill Rehr/ Beth Tubbs ICC Chicago District Office 1-888-ICC-SAFE, ext 4342 FAX: 708/799-0320 brehr@iccsafe.org btubbs@iccsafe.org	Allan Bilka ICC Chicago District Office 1-888-ICC-SAFE, ext 4326 FAX: 708/799-0320 abilka@iccsafe.org	Fred Grable ICC Chicago District Office 1-888-ICC-SAFE, ext 4359 FAX: 708/799-0320 fgrable@iccsafe.org	Beth Tubbs ICC Northbridge Field Office 1-888-ICC-SAFE, ext 7708 FAX: 419/ 730-6531 btubbs@iccsafe.org
IPMC	IRC-Building	IRC Mechanical	IRC Plumbing
Ed Wirtschoreck ICC Chicago District Office 1-888-ICC-SAFE, ext 4317 FAX: 708/799-0320 ewirtschoreck@iccsafe.org	Larry Franks/ Dave Bowman ICC Birmingham District Office 1-888-ICC-SAFE, ext 5279 FAX: 205/592-7001 lfranks@iccsafe.org dbowman@iccsafe.org	Gregg Gress ICC Chicago District Office 1-888-ICC-SAFE, ext 4343 FAX: 708/799-0320 ggress@iccsafe.org	Fred Grable ICC Chicago District Office 1-888-ICC-SAFE, ext 4359 FAX: 708/799-0320 fgrable@iccsafe.org
ISPSC	IWUIC	IZC	
Fred Grable ICC Chicago District Office 1-888-ICC-SAFE, ext 4359 FAX: 708/799-0320 fgrable@iccsafe.org	Bill Rehr ICC Chicago District Office 1-888-ICC-SAFE, ext 4342 FAX: 708/799-0320 brehr@iccsafe.org	Ed Wirtschoreck ICC Chicago District Office 1-888-ICC-SAFE, ext 4317 FAX: 708/799-0320 ewirtschoreck@iccsafe.org	

COMMITTEE A ASSIGNMENT CROSSOVER LIST—WITHIN THE IBC

The 2012/2013 Staff Secretaries assignments on page x indicate which chapters of the International Building Code are generally within the responsibility of each IBC Code Committee. However, within each of these IBC Chapters are subjects that are most appropriately maintained by another IBC Code Committee. For example, the provisions of Section 403.5 deal with means of egress from high-rise buildings. Therefore, even though Chapter 4 is within the responsibility of the IBC – General Committee, this section would most appropriately be maintained by the IBC – Means of Egress Committee. The following table indicates responsibilities by IBC Code Committees other than the main committee for those chapters, for code changes submitted for the 2012 portion (Group A) of the 2012/2013 Cycle.

SECTION	CHAPTER MAINTAINED BY	SECTION MAINTAINED BY	CODE CHANGE PROPOSALS
403.5	IBC-General	IBC-Means of Egress	E4, E7
405.7.1	IBC-General	IBC-Means of Egress	E3
411.7	IBC-General	IBC-Means of Egress	E3
1508.1	IBC-Structural	IBC-Fire Safety	FS178
3401.2	IBC-General	IBC-Structural	S90
3406.1.3	IBC-General	IBC-Means of Egress	E4
3406.4	IBC-General	IBC-Means of Egress	E4
3411.8.4	IBC-General	IBC-Means of Egress	E4
3411.8.15	IBC-General	IBC-Means of Egress	E211



CP# 28-05 CODE DEVELOPMENT

Approved: 9/24/05
Revised: 10/29/11

CP # 28-05 is an update to ICC's *Code Development Process for the International Codes* dated May 15, 2004.

1.0 Introduction

- 1.1 **Purpose:** The purpose of this Council Policy is to prescribe the Rules of Procedure utilized in the continued development and maintenance of the International Codes (Codes).
- 1.2 **Objectives:** The ICC Code Development Process has the following objectives:
 - 1.2.1 The timely evaluation and recognition of technological developments pertaining to construction regulations.
 - 1.2.2 The open discussion of proposals by all parties desiring to participate.
 - 1.2.3 The final determination of Code text by public officials actively engaged in the administration, formulation or enforcement of laws, ordinances, rules or regulations relating to the public health, safety and welfare and by honorary members.
- 1.3 **Code Publication:** The ICC Board of Directors (ICC Board) shall determine the title and the general purpose and scope of each Code published by the ICC.
 - 1.3.1 **Code Correlation:** The provisions of all Codes shall be consistent with one another so that conflicts between the Codes do not occur. Where a given subject matter or code text could appear in more than one Code, the ICC Board shall determine which Code shall be the primary document, and therefore which code development committee shall be responsible for review and maintenance of the code text. Duplication of content or text between Codes shall be limited to the minimum extent necessary for practical usability of the Codes, as determined in accordance with Section 4.4.
- 1.4 **Process Maintenance:** The review and maintenance of the Code Development Process and these Rules of Procedure shall be by the ICC Board. The manner in which ICC codes are developed embodies core principles of the organization. One of those principles is that the final content of ICC codes is determined by a majority vote of the governmental and honorary members. It is the policy of the Board that there shall be no change to this principle without the affirmation of two-thirds of the governmental and honorary members responding.
- 1.5 **Secretariat:** The Chief Executive Officer shall assign a Secretariat for each of the Codes. All correspondence relating to code change proposals and public comments shall be addressed to the Secretariat.
- 1.6 **Recording:** Individuals requesting permission to record any meeting or hearing, or portion thereof, shall be required to provide the ICC with a release of responsibility disclaimer and shall acknowledge that ICC shall retain sole ownership of the recording, and that they have insurance coverage for liability and misuse of recording materials. Equipment and the process used to record shall, in the judgment of the ICC Secretariat, be conducted in a manner that is not disruptive to the meeting. The ICC shall not be responsible for equipment, personnel or any other provision necessary to accomplish the recording. An unedited copy of the recording shall be forwarded to ICC within 30 days of the meeting. Recordings shall not otherwise be copied, reproduced or distributed in any manner. Recordings shall be returned to

ICC or destroyed upon the request of ICC.

2.0 Code Development Cycle

- 2.1 Intent:** The code development cycle shall consist of the complete consideration of code change proposals in accordance with the procedures herein specified, commencing with the deadline for submission of code change proposals (see Section 3.5) and ending with publication of final action on the code change proposals (see Section 7.6).
- 2.2 New Editions:** The ICC Board shall determine the schedule for publishing new editions of the Codes. Each new edition shall incorporate the results of the code development activity since the last edition.
- 2.3 Supplements:** The results of code development activity between editions may be published.
- 2.4 Emergency Procedures:**
- 2.4.1 Scope:** Emergency actions are limited to those issues representing an immediate threat to health and safety that warrant a more timely response than allowed by the Code Development Process schedule.
- 2.4.2 Initial Request:** A request for an emergency action shall be based upon perceived threats to health and safety and shall be reviewed by the ICC Codes and Standards Council for referral to the Board of Directors for action with their analysis and recommendation.
- 2.4.3 Board and Member Action:** In the event that the ICC Board determines that an emergency amendment to any Code is warranted, the same may be adopted by the ICC Board. Such action shall require an affirmative vote of at least two-thirds of the ICC Board.

The ICC membership shall be notified within ten days after the ICC Boards' official action of any emergency amendment. At the next Annual Business Meeting, any emergency amendment shall be presented to the members for ratification by a majority of the ICC Governmental Member Representatives and Honorary Members present and voting.

All code revisions pursuant to these emergency procedures and the reasons for such corrective action shall be published as soon as practicable after ICC Board action. Such revisions shall be identified as an emergency amendment.

Emergency amendments to any Code shall not be considered as a retro-active requirement to the Code. Incorporation of the emergency amendment into the adopted Code shall be subjected to the process established by the adopting authority.

3.0 Submittal of Code Change Proposals

- 3.1 Intent:** Any interested person, persons or group may submit a code change proposal which will be duly considered when in conformance to these Rules of Procedure.
- 3.2 Withdrawal of Proposal:** A code change proposal may be withdrawn by the proponent (WP) at any time prior to Final Action Consideration of that proposal. A withdrawn code change proposal shall not be subject to a public hearing, motions, or Final Action Consideration.
- 3.3 Form and Content of Code Change Submittals:** Each code change proposal shall be submitted separately and shall be complete in itself. Each submittal shall contain the following information:
- 3.3.1 Proponent:** Each code change proposal shall include the name, title, mailing address, telephone number, and email address of the proponent. Email addresses shall be published with the code change proposals unless the proponent otherwise requests on the submittal form.
- 3.3.1.1** If a group, organization or committee submits a code change proposal, an individual with prime responsibility shall be indicated.
- 3.3.1.2** If a proponent submits a code change on behalf of a client, group, organization or committee, the name and mailing address of the client, group, organization or committee shall be indicated.

- 3.3.2 Code Reference:** Each code change proposal shall relate to the applicable code sections(s) in the latest edition of the Code.
- 3.3.2.1** If more than one section in the Code is affected by a code change proposal, appropriate proposals shall be included for all such affected sections.
- 3.3.2.2** If more than one Code is affected by a code change proposal, appropriate proposals shall be included for all such affected Codes and appropriate cross referencing shall be included in the supporting information.
- 3.3.3 Multiple code change proposals to a code section.** A proponent shall not submit multiple code change proposals to the same code section. When a proponent submits multiple code change proposals to the same section, the proposals shall be considered as incomplete proposals and processed in accordance with Section 4.3. This restriction shall not apply to code change proposals that attempt to address differing subject matter within a code section.
- 3.3.4 Text Presentation:** The text proposal shall be presented in the specific wording desired with deletions shown struck out with a single line and additions shown underlined with a single line.
- 3.3.4.1** A charging statement shall indicate the referenced code section(s) and whether the proposal is intended to be an addition, a deletion or a revision to existing Code text.
- 3.3.4.2** Whenever practical, the existing wording of the text shall be preserved with only such deletions and additions as necessary to accomplish the desired change.
- 3.3.4.3** Each proposal shall be in proper code format and terminology.
- 3.3.4.4** Each proposal shall be complete and specific in the text to eliminate unnecessary confusion or misinterpretation.
- 3.3.4.5** The proposed text shall be in mandatory terms.
- 3.3.5 Supporting Information:** Each code change proposal shall include sufficient supporting information to indicate how the proposal is intended to affect the intent and application of the Code.
- 3.3.5.1 Purpose:** The proponent shall clearly state the purpose of the proposed code change (e.g. clarify the Code; revise outdated material; substitute new or revised material for current provisions of the Code; add new requirements to the Code; delete current requirements, etc.)
- 3.3.5.2 Reasons:** The proponent shall justify changing the current Code provisions, stating why the proposal is superior to the current provisions of the Code. Proposals which add or delete requirements shall be supported by a logical explanation which clearly shows why the current Code provisions are inadequate or overly restrictive, specifies the shortcomings of the current Code provisions and explains how such proposals will improve the Code.
- 3.3.5.3 Substantiation:** The proponent shall substantiate the proposed code change based on technical information and substantiation. Substantiation provided which is reviewed in accordance with Section 4.2 and determined as not germane to the technical issues addressed in the proposed code change may be identified as such. The proponent shall be notified that the proposal is considered an incomplete proposal in accordance with Section 4.3 and the proposal shall be held until the deficiencies are corrected. The proponent shall have the right to appeal this action in accordance with the policy of the ICC Board. The burden of providing substantiating material lies with the proponent of the code change proposal. All substantiating material published by ICC is material that has been provided by the proponent and in so publishing ICC makes no representations or warranties about its quality or accuracy.
- 3.3.5.4 Bibliography:** The proponent shall submit a bibliography of any substantiating material submitted with the code change proposal. The bibliography shall be published with the code change and the proponent shall make the substantiating materials available for review at the appropriate ICC office and during the public

hearing.

3.3.5.5 Copyright Release: The proponent of code change proposals, floor modifications and public comments shall sign a copyright release reading: "I hereby grant and assign to ICC all rights in copyright I may have in any authorship contributions I make to ICC in connection with any proposal and public comment, in its original form submitted or revised form, including written and verbal modifications submitted in accordance Section 5.5.2. I understand that I will have no rights in any ICC publications that use such contributions in the form submitted by me or another similar form and certify that such contributions are not protected by the copyright of any other person or entity."

3.3.5.6 Cost Impact: The proponent shall indicate one of the following regarding the cost impact of the code change proposal: 1) the code change proposal will increase the cost of construction; or 2) the code change proposal will not increase the cost of construction. The proponent should submit information that supports their claim. Any information submitted will be considered by the code development committee. This information will be included in the bibliography of the published code change proposal.

3.4 Number: One copy of each code change proposal, two copies of each proposed new referenced standard and one copy of all substantiating information shall be submitted. Additional copies may be requested when determined necessary by the Secretariat to allow such information to be distributed to the code development committee. Where such additional copies are requested, it shall be the responsibility of the proponent to send such copies to the respective code development committee. A copy of the code change proposal in electronic form is preferred.

3.5 Submittal Deadline: Each code change proposal shall be received at the office of the Secretariat by the posted deadline. Such posting shall occur no later than 120 days prior to the code change deadline. The submitter of a proposed code change is responsible for the proper and timely receipt of all pertinent materials by the Secretariat.

3.6 Referenced Standards: In order for a standard to be considered for reference or to continue to be referenced by the Codes, a standard shall meet the following criteria:

3.6.1 Code References:

3.6.1.1 The standard, including title and date, and the manner in which it is to be utilized shall be specifically referenced in the Code text.

3.6.1.2 The need for the standard to be referenced shall be established.

3.6.2 Standard Content:

3.6.2.1 A standard or portions of a standard intended to be enforced shall be written in mandatory language.

3.6.2.2 The standard shall be appropriate for the subject covered.

3.6.2.3 All terms shall be defined when they deviate from an ordinarily accepted meaning or a dictionary definition.

3.6.2.4 The scope or application of a standard shall be clearly described.

3.6.2.5 The standard shall not have the effect of requiring proprietary materials.

3.6.2.6 The standard shall not prescribe a proprietary agency for quality control or testing.

3.6.2.7 The test standard shall describe, in detail, preparation of the test sample, sample selection or both.

3.6.2.8 The test standard shall prescribe the reporting format for the test results. The format shall identify the key performance criteria for the element(s) tested.

3.6.2.9 The measure of performance for which the test is conducted shall be clearly defined in either the test standard or in Code text.

3.6.2.10 The standard shall not state that its provisions shall govern whenever the referenced standard is in conflict with the requirements of the referencing Code.

3.6.2.11 The preface to the standard shall announce that the standard is promulgated according to a consensus procedure.

3.6.3 Standard Promulgation:

- 3.6.3.1** Code change proposals with corresponding changes to the code text which include a reference to a proposed new standard or a proposed update of an existing referenced shall comply with this section. The standard shall be completed and readily available prior to Final Action Consideration based on the cycle of code development which includes the proposed code change proposal. In order for a new standard to be considered for reference by the Code, such standard shall be submitted in at least a consensus draft form in accordance with Section 3.4. If a new standard is not submitted in at least draft form, the code change shall be considered incomplete and shall not be processed. Updating of standards without corresponding code text changes shall be accomplished administratively in accordance with Section 4.5.
- 3.6.3.2** The standard shall be developed and maintained through a consensus process such as ASTM or ANSI.

4.0 Processing of Proposals

- 4.1 Intent:** The processing of code change proposals is intended to ensure that each proposal complies with these Rules of Procedure and that the resulting published proposal accurately reflects that proponent's intent.
- 4.2 Review:** Upon receipt in the Secretariat's office, the code change proposals will be checked for compliance with these Rules of Procedure as to division, separation, number of copies, form, language, terminology, supporting statements and substantiating data. Where a code change proposal consists of multiple parts which fall under the maintenance responsibilities of different code committees, the Secretariat shall determine the code committee responsible for determining the committee action in accordance with Section 5.6.
- 4.3 Incomplete Proposals:** When a code change proposal is submitted with incorrect format, without the required information or judged as not in compliance with these Rules of Procedure, the Secretariat shall notify the proponent of the specific deficiencies and the proposal shall be held until the deficiencies are corrected, with a final date set for receipt of a corrected submittal. If the Secretariat receives the corrected proposal after the final date, the proposal shall be held over until the next code development cycle. Where there are otherwise no deficiencies addressed by this section, a proposal that incorporates a new referenced standard shall be processed with an analysis of referenced standard's compliance with the criteria set forth in Section 3.6.
- 4.4 Editorial:** The Chief Executive Officer shall have the authority at all times to make editorial and format changes to the Code text, or any approved changes, consistent with the intent, provisions and style of the Code. An editorial or format change is a text change that does not affect the scope or application of the code requirements.
- 4.5 Updating Standards:**
- 4.5.1 Standards referenced in the I-Codes:** The updating of standards referenced by the Codes shall be accomplished administratively by the Administrative code development committee in accordance with these full procedures except that the deadline for availability of the updated standard and receipt by the Secretariat shall be December 1 of the third year of each code cycle. The published version of the new edition of the Code which references the standard will refer to the updated edition of the standard. If the standard is not available by the deadline, the edition of the standard as referenced by the newly published Code shall revert back to the reference contained in the previous edition and an errata to the Code issued Multiple standards to be updated may be included in a single proposal.
- 4.6 Preparation:** All code change proposals in compliance with these procedures shall be prepared in a standard manner by the Secretariat and be assigned separate, distinct and consecutive numbers. The Secretariat shall coordinate related proposals submitted in accordance with Section 3.3.2 to facilitate the hearing process.
- 4.7 Publication:** All code change proposals shall be posted on the ICC website at least 30 days prior to the public hearing on those proposals and shall constitute the agenda for the public hearing. Code

change proposals which have not been published shall not be considered.

5.0 Public Hearing

- 5.1 Intent:** The intent of the public hearing is to permit interested parties to present their views including the cost and benefits on the code change proposals on the published agenda. The code development committee will consider such comments as may be presented in the development of their action on the disposition of such proposals. At the conclusion of the code development committee deliberations, the committee action on each code change proposal shall be placed before the hearing assembly for consideration in accordance with Section 5.7.
- 5.2 Committee:** The Code Development Committees shall be appointed by the Board of Directors.
- 5.2.1 Chairman/Moderator:** The Chairman and Vice-Chairman shall be appointed by the Steering Committee on Councils from the appointed members of the committee. The ICC President shall appoint one or more Moderators who shall act as presiding officer for the public hearing.
- 5.2.2 Conflict of Interest:** A committee member shall withdraw from and take no part in those matters with which the committee member has an undisclosed financial, business or property interest. The committee member shall not participate in any committee discussion on the matter or any committee vote. A committee member who is a proponent of a proposal shall not participate in any committee discussion on the matter or any committee vote. Such committee member shall be permitted to participate in the floor discussion in accordance with Section 5.5 by stepping down from the dais.
- 5.2.3 Representation of Interest:** Committee members shall not represent themselves as official or unofficial representatives of the ICC except at regularly convened meetings of the committee.
- 5.2.4 Committee Composition:** The committee may consist of representation from multiple interests. A minimum of thirty-three and one-third percent (33.3%) of the committee members shall be regulators.
- 5.3 Date and Location:** The date and location of each public hearing shall be announced not less than 60 days prior to the date of the public hearing.
- 5.4 General Procedures:** *The Robert's Rules of Order* shall be the formal procedure for the conduct of the public hearing except as a specific provision of these Rules of Procedure may otherwise dictate. A quorum shall consist of a majority of the voting members of the committee.
- 5.4.1 Chair Voting:** The Chairman of the committee shall vote only when the vote cast will break a tie vote of the committee.
- 5.4.2 Open Meetings:** Public hearings of the Code Development Committees are open meetings. Any interested person may attend and participate in the Floor Discussion and Assembly Consideration portions of the hearing. Only eligible voters (see Section 5.7.4) are permitted to vote on Assembly Considerations. Only Code Development Committee members may participate in the Committee Action portion of the hearings (see Section 5.6). Participants shall not advocate a position on specific code changes with Committee Members other than through the methods provided in this policy.
- 5.4.3 Presentation of Material at the Public Hearing:** Information to be provided at the hearing shall be limited to verbal presentations and modifications submitted in accordance with Section 5.5.2. Each individual presenting information at the hearing shall state their name and affiliation, and shall identify any entities or individuals they are representing in connection with their testimony. Audio-visual presentations are not permitted. Substantiating material submitted in accordance with Section 3.3.4.4 and other material submitted in response to a code change proposal shall be located in a designated area in the hearing room and shall not be distributed to the code development committee at the public hearing.
- 5.4.4 Agenda Order:** The Secretariat shall publish an agenda for each public hearing, placing individual code change proposals in a logical order to facilitate the hearing. Any public hearing attendee may move to revise the agenda order as the first order of business at the public

hearing, or at any time during the hearing except while another proposal is being discussed. Preference shall be given to grouping like subjects together, and for moving items back to a later position on the agenda as opposed to moving items forward to an earlier position. A motion to revise the agenda order is subject to a 2/3 vote of those present and voting.

5.4.5 Reconsideration: There shall be no reconsideration of a proposed code change after it has been voted on by the committee in accordance with Section 5.6; or, in the case of assembly consideration, there shall be no reconsideration of a proposed code change after it has been voted on by the assembly in accordance with Section 5.7.

5.4.6 Time Limits: Time limits shall be established as part of the agenda for testimony on all proposed changes at the beginning of each hearing session. Each person requesting to testify on a change shall be given equal time. In the interest of time and fairness to all hearing participants, the Moderator shall have limited authority to modify time limitations on debate. The Moderator shall have the authority to adjust time limits as necessary in order to complete the hearing agenda.

5.4.6.1 Time Keeping: Keeping of time for testimony by an individual shall be by an automatic timing device. Remaining time shall be evident to the person testifying. Interruptions during testimony shall not be tolerated. The Moderator shall maintain appropriate decorum during all testimony.

5.4.6.2 Proponent Testimony: The Proponent is permitted to waive an initial statement. The Proponent shall be permitted to have the amount of time that would have been allocated during the initial testimony period plus the amount of time that would be allocated for rebuttal. Where the code change proposal is submitted by multiple proponents, this provision shall permit only one proponent of the joint submittal to be allotted additional time for rebuttal.

5.4.7 Points of Order: Any person participating in the public hearing may challenge a procedural ruling of the Moderator or the Chairman. A majority vote of the eligible voters as determined in Section 5.7.4 shall determine the decision.

5.5 Floor Discussion: The Moderator shall place each code change proposal before the hearing for discussion by identifying the proposal and by regulating discussion as follows:

5.5.1 Discussion Order:

1. *Proponents.* The Moderator shall begin by asking the proponent and then others in support of the proposal for their comments.
2. *Opponents.* After discussion by those in support of a proposal, those opposed hereto, if any, shall have the opportunity to present their views.
3. *Rebuttal in support.* Proponents shall then have the opportunity to rebut points raised by the opponents.
4. *Re-rebuttal in opposition.* Opponents shall then have the opportunity to respond to the proponent's rebuttal.

5.5.2 Modifications: Modifications to proposals may be suggested from the floor by any person participating in the public hearing. The person proposing the modification is deemed to be the proponent of the modification.

5.5.2.1 Submission and Written Copies. All modifications must be written, unless determined by the Chairman to be either editorial or minor in nature. The modification proponent shall provide 20 copies to the Secretariat for distribution to the committee.

5.5.2.2 Criteria. The Chairman shall rule proposed modifications in or out of order before they are discussed on the floor. A proposed modification shall be ruled out of order if it:

1. is not legible, unless not required to be written in accordance with Section 5.5.2.1; or

2. changes the scope of the original proposal; or
3. is not readily understood to allow a proper assessment of its impact on the original proposal or the code.

The ruling of the Chairman on whether or not the modification is in or out of order shall be final and is not subject to a point of order in accordance with Section 5.4.7.

5.5.2.3 Testimony. When a modification is offered from the floor and ruled in order by the Chairman, a specific floor discussion on that modification is to commence in accordance with the procedures listed in Section 5.5.1.

5.6 Committee Action: Following the floor discussion of each code change proposal, one of the following motions shall be made and seconded by members of the committee.

1. Approve the code change proposal as submitted (AS) or
2. Approve the code change proposal as modified with specific modifications (AM), or
3. Disapprove the code change proposal (D)

Discussion on this motion shall be limited to Code Development Committee members. If a committee member proposes a modification which had not been proposed during floor discussion, the Chairman shall rule on the modification in accordance with Section 5.5.2.2 If a committee member raises a matter of issue, including a proposed modification, which has not been proposed or discussed during the floor discussion, the Moderator shall suspend the committee discussion and shall reopen the floor discussion for comments on the specific matter or issue. Upon receipt of all comments from the floor, the Moderator shall resume committee discussion.

The Code Development Committee shall vote on each motion with the majority dictating the committee's action. Committee action on each code change proposal shall be completed when one of the motions noted above has been approved. Each committee vote shall be supported by a reason.

The Code Development Committee shall maintain a record of its proceedings including the action on each code change proposal.

5.7 Assembly Consideration: At the conclusion of the committee's action on a code change proposal and before the next code change proposal is called to the floor, the Moderator shall ask for a motion from the public hearing attendees who may object to the committee's action. If a motion in accordance with Section 5.7.1 is not brought forward on the committee's action, the results of the public hearing shall be established by the committee's action. If a motion in accordance with Section 5.7.1 is brought forward and is sustained in accordance with Section 5.7.3, both the committee's action and the assemblies' action shall be reported as the results of the public hearing.

5.7.1 Floor Motion: Any attendee may raise an objection to the committee's action in which case the attendee will be able to make a motion to:

1. Approve the code change proposal as submitted from the floor (ASF), or
2. Approve the code change proposal as modified from the floor (AMF) with a specific modification that has been previously offered from the floor and ruled in order by the Chairman during floor discussion (see Section 5.5.2) or has been offered by a member of the Committee and ruled in order by the Chairman during committee discussion (see Section 5.6), or
3. Disapprove the code change proposal from the floor (DF).

5.7.2 Discussion: On receipt of a second to the floor motion, the Moderator shall place the motion before the assembly for a vote. No additional testimony shall be permitted.

5.7.3 Assembly Action: A successful assembly action shall be a majority vote of the votes cast by eligible voters (See 5.7.4).

5.7.4 Eligible Voters: All members of ICC in attendance at the public hearing shall be eligible to vote on floor motions. Each member is entitled to one vote, except that each Governmental Member Voting Representative in attendance may vote on behalf of its Governmental Member. Code Development Committee members shall be eligible to vote on floor motions. Application, whether

new or updated, for ICC membership must be received by the Code Council ten days prior to the commencement of the first day of the public hearing.

- 5.8 Report of the Public Hearing:** The results of the public hearing, including committee action and successful assembly action, shall be posted on the ICC website not less than 60 days prior to Final Action Consideration except as approved by the ICC Board.

6.0 Public Comments

- 6.1 Intent:** The public comment process gives attendees at the Final Action Hearing an opportunity to consider specific objections to the results of the public hearing and more thoughtfully prepare for the discussion for Final Action Consideration. The public comment process expedites the Final Action Consideration at the Final Action Hearing by limiting the items discussed to the following:

6.1.1 Consideration of items for which a public comment has been submitted; and

6.1.2 Consideration of items which received a successful assembly action at the public hearing.

- 6.2 Deadline:** The deadline for receipt of a public comment to the results of the public hearing shall be announced at the public hearing but shall not be less than 30 days from the availability of the report of the results of the public hearing (see Section 5.8).

- 6.3 Withdrawal of Public Comment:** A public comment may be withdrawn by the public commenter at any time prior to Final Action Consideration of that comment. A withdrawn public comment shall not be subject to Final Action Consideration. If the only public comment to a code change proposal is withdrawn by the public commenter prior to the vote on the consent agenda in accordance with Section 7.3.4, the proposal shall be considered as part of the consent agenda. If the only public comment to a code change proposal is withdrawn by the public commenter after the vote on the consent agenda in accordance with Section 7.3.4, the proposal shall continue as part of the individual consent agenda in accordance with Section 7.3.5, however the public comment shall not be subject to Final Action Consideration.

- 6.4 Form and Content of Public Comments:** Any interested person, persons, or group may submit a public comment to the results of the public hearing which will be considered when in conformance to these requirements. Each public comment to a code change proposal shall be submitted separately and shall be complete in itself. Each public comment shall contain the following information:

6.4.1 Public comment: Each public comment shall include the name, title, mailing address, telephone number and email address of the public commenter. Email addresses shall be published with the public comments unless the commenter otherwise requests on submittal form. If group, organization, or committee submits a public comment, an individual with prime responsibility shall be indicated. If a public comment is submitted on behalf a client, group, organization or committee, the name and mailing address of the client, group, organization or committee shall be indicated. The scope of the public comment shall be consistent with the scope of the original code change proposal, committee action or successful assembly action. Public comments which are determined as not within the scope of the code change proposal, committee action or successful assembly action shall be identified as such. The public commenter shall be notified that the public comment is considered an incomplete public comment in accordance with Section 6.5.1 and the public comment shall be held until the deficiencies are corrected. A copyright release in accordance with Section 3.3.4.5 shall be provided with the public comment.

6.4.2 Code Reference: Each public comment shall include the code change proposal number and the results of the public hearing, including successful assembly actions, on the code change proposal to which the public comment is directed.

6.4.3 Multiple public comments to a code change proposal. A proponent shall not submit multiple public comments to the same code change proposal. When a proponent submits multiple public comments to the same code change proposal, the public comments shall be considered as incomplete public comments and processed in accordance with Section 6.5.1. This restriction shall not apply to public comments that attempt to address differing subject matter within a code section.

6.4.4 Desired Final Action: The public comment shall indicate the desired final action as one of the following:

1. Approve the code change proposal as submitted (AS), or
2. Approve the code change proposal as modified (AM) by one or more specific modifications published in the Results of the Public Hearing or published in a public comment, or
3. Disapprove the code change proposal (D)

6.4.5 Supporting Information: The public comment shall include in a statement containing a reason and justification for the desired final action on the code change proposal. Reasons and justification which are reviewed in accordance with Section 6.4 and determined as not germane to the technical issues addressed in the code change proposal or committee action may be identified as such. The public commenter shall be notified that the public comment is considered an incomplete public comment in accordance with Section 6.5.1 and the public comment shall be held until the deficiencies are corrected. The public commenter shall have the right to appeal this action in accordance with the policy of the ICC Board. A bibliography of any substantiating material submitted with a public comment shall be published with the public comment and the substantiating material shall be made available at the Final Action Hearing. All substantiating material published by ICC is material that has been provided by the proponent and in so publishing ICC makes no representations or warranties about its quality or accuracy.

6.4.6 Number: One copy of each public comment and one copy of all substantiating information shall be submitted. Additional copies may be requested when determined necessary by the Secretariat. A copy of the public comment in electronic form is preferred.

6.5 Review: The Secretariat shall be responsible for reviewing all submitted public comments from an editorial and technical viewpoint similar to the review of code change proposals (See Section 4.2).

6.5.1 Incomplete Public Comment: When a public comment is submitted with incorrect format, without the required information or judged as not in compliance with these Rules of Procedure, the public comment shall not be processed. The Secretariat shall notify the public commenter of the specific deficiencies and the public comment shall be held until the deficiencies are corrected, or the public comment shall be returned to the public commenter with instructions to correct the deficiencies with a final date set for receipt of the corrected public comment.

6.5.2 Duplications: On receipt of duplicate or parallel public comments, the Secretariat may consolidate such public comments for Final Action Consideration. Each public commenter shall be notified of this action when it occurs.

6.5.3 Deadline: Public comments received by the Secretariat after the deadline set for receipt shall not be published and shall not be considered as part of the Final Action Consideration.

6.6 Publication: The public hearing results on code change proposals that have not been public commented and the code change proposals with public commented public hearing results and successful assembly actions shall constitute the Final Action Agenda. The Final Action Agenda shall be posted on the ICC website at least 30 days prior to Final Action consideration.

7.0 Final Action Consideration

7.1 Intent: The purpose of Final Action Consideration is to make a final determination of all code change proposals which have been considered in a code development cycle by a vote cast by eligible voters (see Section 7.4).

7.2 Agenda: The final action consent agenda shall be comprised of proposals which have neither an assembly action nor public comment. The agenda for public testimony and individual consideration shall be comprised of proposals which have a successful assembly action or public comment (see Sections 5.7 and 6.0).

7.3 Procedure: *The Robert's Rules of Order* shall be the formal procedure for the conduct of the Final Action Consideration except as these Rules of Procedure may otherwise dictate.

7.3.1 Open Meetings: Public hearings for Final Action Consideration are open meetings. Any

interested person may attend and participate in the Floor Discussion.

- 7.3.2 Agenda Order:** The Secretariat shall publish an agenda for Final Action Consideration, placing individual code change proposals and public comments in a logical order to facilitate the hearing. The proponents or opponents of any proposal or public comment may move to revise the agenda order as the first order of business at the public hearing, or at any time during the hearing except while another proposal is being discussed. Preference shall be given to grouping like subjects together and for moving items back to a later position on the agenda as opposed to moving items forward to an earlier position. A motion to revise the agenda order is subject to a 2/3 vote of those present and voting.
- 7.3.3 Presentation of Material at the Public Hearing:** Information to be provided at the hearing shall be limited to verbal presentations. Each individual presenting information at the hearing shall state their name and affiliation, and shall identify any entities or individuals they are representing in connection with their testimony. Audio-visual presentations are not permitted. Substantiating material submitted in accordance with Section 6.4.4 and other material submitted in response to a code change proposal or public comment shall be located in a designated area in the hearing room.
- 7.3.4 Final Action Consent Agenda:** The final action consent agenda (see Section 7.2) shall be placed before the assembly with a single motion for final action in accordance with the results of the public hearing. When the motion has been seconded, the vote shall be taken with no testimony being allowed. A simple majority (50% plus one) based on the number of votes cast by eligible voters shall decide the motion.
- 7.3.5 Individual Consideration Agenda:** Upon completion of the final action consent vote, all proposed changes not on the final action consent agenda shall be placed before the assembly for individual consideration of each item (see Section 7.2).
- 7.3.6 Reconsideration:** There shall be no reconsideration of a proposed code change after it has been voted on in accordance with Section 7.3.8.
- 7.3.7 Time Limits:** Time limits shall be established as part of the agenda for testimony on all proposed changes at the beginning of each hearing session. Each person requesting to testify on a change shall be given equal time. In the interest of time and fairness to all hearing participants, the Moderator shall have limited authority to modify time limitations on debate. The Moderator shall have the authority to adjust time limits as necessary in order to complete the hearing agenda.
- 7.3.7.1 Time Keeping:** Keeping of time for testimony by an individual shall be by an automatic timing device. Remaining time shall be evident to the person testifying. Interruptions during testimony shall not be tolerated. The Moderator shall maintain appropriate decorum during all testimony.
- 7.3.8 Discussion and Voting:** Discussion and voting on proposals being individually considered shall be in accordance with the following procedures:
- 7.3.8.1 Allowable Final Action Motions:** The only allowable motions for final action are Approval as Submitted, Approval as Modified by one or more modifications published in the Final Action Agenda, and Disapproval.
- 7.3.8.2 Initial Motion:** The Code Development Committee action shall be the initial motion considered.
- 7.3.8.3 Motions for Modifications:** Whenever a motion under consideration is for Approval as Submitted or Approval as Modified, a subsequent motion and second for a modification published in the Final Action Agenda may be made (see Section 6.4.3). Each subsequent motion for modification, if any, shall be individually discussed and voted before returning to the main motion. A two-thirds majority based on the number of votes cast by eligible voters shall be required for a successful motion on all modifications.
- 7.3.8.4 Voting:** After dispensing with all motions for modifications, if any, and upon

completion of discussion on the main motion, the Moderator shall then ask for the vote on the main motion. If the motion fails to receive the majority required in Section 7.5, the Moderator shall ask for a new motion.

7.3.8.5 Subsequent Motion: If the initial motion is unsuccessful, a motion for one of the other allowable final actions shall be made (see Section 7.3.8.1) and dispensed with until a successful final action is achieved. If a successful final action is not achieved, Section 7.5.1 shall apply.

7.3.9 Proponent testimony: The Proponent of a public comment is permitted to waive an initial statement. The Proponent of the public comment shall be permitted to have the amount of time that would have been allocated during the initial testimony period plus the amount of time that would be allocated for rebuttal. Where a public comment is submitted by multiple proponents, this provision shall permit only one proponent of the joint submittal to waive an initial statement.

7.3.10 Points of Order: Any person participating in the public hearing may challenge a procedural ruling of the Moderator. A majority vote of the eligible voters as determined in Section 5.7.4 shall determine the decision.

7.4 Eligible voters: ICC Governmental Member Representatives and Honorary Members in attendance at the Final Action Hearing shall have one vote per eligible attendee on all International Codes.

Applications for Governmental Membership must be received by the ICC by April 1st of the applicable year in order for its designated representatives to be eligible to vote at the Final Action Hearing. Applications, whether new or updated, for governmental member voting representative status must be received by the Code Council thirty (30) days prior to the commencement of the first day of the Final Action Hearing in order for any designated representative to be eligible to vote. An individual designated as a Governmental Member Voting Representative shall provide sufficient information to establish eligibility as defined in the ICC Bylaws. The Executive Committee of the ICC Board, in its discretion, shall have the authority to address questions related to eligibility. Decisions of the Executive Committee shall be final and not appealable pursuant to CP 1, other than claims of fraud or misrepresentation, supported by reasonably credible evidence, that were material to the outcome of the Final Action Hearing.

7.5 Majorities for Final Action: The required voting majority based on the number of votes cast of eligible voters shall be in accordance with the following table:

Committee Action (see note)	Desired Final Action		
	AS	AM	D
AS	Simple Majority	2/3 Majority	Simple Majority
AM	2/3 Majority	Simple Majority to sustain the Public Hearing Action or; 2/3 Majority on additional modifications and 2/3 on overall AM	Simple Majority
D	2/3 Majority	2/3 Majority	Simple Majority

7.5.1 Failure to Achieve Majority Vote: In the event that a code change proposal does not receive any of the required majorities for final action in Section 7.5, final action on the code change proposal in question shall be disapproval.

7.6 Publication: The Final action on all proposed code changes shall be published as soon as practicable after the determination of final action. The exact wording of any resulting text modifications shall be made available to any interested party.

8.0 Appeals

8.1 Right to Appeal: Any person may appeal an action or inaction in accordance with CP-1.

2012 ICC CODE DEVELOPMENT CYCLE CROSS INDEX OF PROPOSED CODE CHANGES

Some of the proposed code changes include sections that are outside of the scope of the chapters or the code listed in the table of 2012/2013 Staff Secretaries on page x. This is done in order to facilitate coordination among the International Codes which is one of the fundamental principles of the International Codes.

Listed in this cross index are proposed code changes that include sections of codes or codes other than those listed on page ix. For example, IBC Section 703.2.3 is proposed for revision in code change S70-12, which is to be heard by the IBC Structural Committee. This section of the IBC is typically the responsibility of the IBC Fire Safety Committee as listed in the table of 2012/2013 Staff Secretaries. It is therefore identified in this cross index. Another example is Section 905.4 of the International Fire Code. The International Fire Code is normally maintained by the IFC Committee, but Section 905.4 will be considered for revision in proposed code change E4-12 which will be placed on the IBC Means of Egress Committee agenda. In some instances, there are other subsections that are revised by an identified code change that is not included in the cross index. For example, numerous sections in Chapter 10 of the International Fire Code would be revised by the proposed changes to Chapter 10 of the IBC. This was done to keep the cross index brief enough for easy reference.

This information is provided to assist users in locating all of the proposed code changes that would affect a certain section or chapter. For example, to find all of the proposed code changes that would affect Chapter 7 of the IBC, review the proposed code changes in the portion of the monograph for the IBC Fire Safety Committee (listed with a FS prefix) then review this cross reference for Chapter 7 of the IBC for proposed code changes published in other code change groups. While care has been taken to be accurate, there may be some omissions in this list.

Letter prefix: Each proposed change number has a letter prefix that will identify where the proposal is published. The letter designations for proposed changes and the corresponding publications are as follows:

PREFIX	PROPOSED CHANGE GROUP (see monograph table of contents for location)
ADM	Administrative
E	International Building Code - Means of Egress
EB	International Existing Building Code
CE	International Energy Conservation Code – Commercial
RE	International Energy Conservation Code – Energy
F	International Fire Code
FG	International Fuel Gas Code
FS	International Building Code - Fire Safety
G	International Building Code – General
GEW	International Green Construction Code – Energy/Water
GG	International Green Construction Code – General
M	International Mechanical Code
PC	ICC Performance Code
P	International Plumbing Code
PSD	International Private Sewage Disposal Code
PM	International Property Maintenance Code
RE	International Residential Code - Building
RM	International Residential Code - Mechanical
RP	International Residential Code - Plumbing
S	International Building Code – Structural
SP	International Swimming Pool and Spa Code
WUIC	International Wildland-Urban Interface Code
Z	International Zoning Code

International Building Code		907.2.10.1	G71
		907.2.13.2	E4
101.4	G201	907.5.2.2	E4
101.4.7 (New)	G201	909.4.6	G32 Part II
104.11.3 (New)	FS73	909.9	S70
107.2.6	G198	909.18	S113, S117
110.3.5	S304	909.20	E4, E5
116.5	G201	909.21.7	S113
202	P27, P29	911.1.5	E4
403.5	E4, E7	1003.2	G62
404.6	FS41, FS99	Table 1004.1.2	G193
405.7.1	E3	1004.3	S90
410.6.1	E3	1005.7.2	G73
411.7	E3	1007.1	G237
414.7.2	E3	1007.6	G57
505.2.3	E7	1009.3	FS51, FS99
505.3	E101	1015.2.1	G85
703.2.3	S70	1015.4	G57
706.1	G103	1015.5	G57
707.5.1	E7	Table 1016.2	G32 Part I, G87
707.6	E4	1018.1	G31 Part I
707.7.1	E4	Table 1018.1	G32 Part I
709.5	G31 Part I	Table 1018.2	G32 part I
710.8	G32 Part I	1018.4	G32 Part I
711.4	E7	Table 1021.2(2)	G57
712.1.8	G32 Part I, G54, E7	1022.7	G85
712.1.12	E7	1027.1	G175
713.1	E4, E7	1203.1	M36, M37, M38, M39
713.14.1	G32 Part I, E110	1205.4	E4
713.14.1.2 (new)	G174 Part III	1207.1	E4
Table 716.5	G51, E4	1403.7	S102, S103
716.5.3	E3	1404.13 (New)	S309
717.5.5	G32 Part I	1507.16	G98
718.2.4	E4	1507.16.1	G98
722.5	S238	1508.1	FS178
Table 803.9	E4	1609.1.2	G199
901.5	S90	1808.7.3	G193
903.2.6	G31 Part II, G32 Part II	2103.15(New)	FS177
903.2.8	G31 Part II	2110.1.1	E4
903.2.8.1	G31 Part II	2303.1.4 (new)	G142 Part II
903.2.8.2 (new)	G31 Part II	2308.12.7	E4
903.2.8.2	G31 Part II	2405.3	G199
903.2.8.3 (new)	G31 Part II	2406.4	G193
903.3.1.3	G31 Part II	2406.4.5	G193
903.3.2	G32 Part II	2406.4.6	E4
905.3.3	E4	2406.4.7	E4
905.4	E4	2607.4	G199
906.2	G71	2609.4	G193, G199
Table 906.3(1)	G71	Table 2902.1.2 (New)	P27
Table 906.3(2)	G71	2902.2	P34
907.2.6	G32 Part II, G71	2902.3	P35
907.2.6.1	G31 Part II	2902.3.1	P36
907.2.6.4 (new)	G32 Part II	2902.3.5	P37

International Building Code (continued)		1003.2	G62
		Table 1004.1.2	G193
2902.4.1	P39	1005.7.2	G73
2902.6 (New)	P30	1007.1	G237
Table 2902.1.2 (New)	P27	1007.6	G57
3007.7	E110	1015.2.1	G85
3007.9	FS138	1015.4	G57
3008.7	E110	1015.5	G57
3008.9	FS138	Table 1016.2	G32 Part I, G87
3111.1	S3	1018.1	G31 Part I
3306.8	S90	Table 1018.1	G32 Part I
3311.1	E4	Table 1018.2	G32 part I
3401.2	S90	1018.4	G32 Part I
3406.1.3	E4	Table 1021.2(2)	G57
3406.4	E4	1022.7	G85
3411.8.4	E4	1027.1	G175
3411.8.15	E211	1104.6.1	E4
International Fire Code		1104.9	E4
		1104.10	E4
202	G1, G2, G11, G13, G31 Part I, G32 Part I, G43, G70	1104.12	E4
Definition of Group A	G27	1104.16	E4
Definition of Group B	G28, G29, G30	1104.20	E4
Definition of Group E	G27	1104.21	E4
Definition of Group I	G31 Part I, G32 Part I, G33, G34, G35, G36, G37	1104.23	E4
Definition of Group R	G31 Part I, G34, G36, G38, G39, G40, G41	3313.1	E4
Definition of Group S	G42	5005.4.4	E3
508.1.5	E4	5704.2.9.4	E4
604.2.16 (new)	G77	5706.5.1.12	E4
903.2.6	G31 Part II, G32 Part II	INTERNATIONAL PLUMBING CODE	
903.2.8	G31 Part II		
903.2.8.1	G31 Part II	202	G8, G193 Part IV, P3(HEARD BY IBC-S)
903.2.8.2 (new)	G31 Part II	309.2	P20 (HEARD BY IBC-S)
903.2.8.2	G31 Part II	403.3.3	G71
905.3.3	E4	403.3.4	G71
905.4	E4	403.5	G71
903.2.8.3 (new)	G31 Part II	423.1	G193 Part IV
903.3.1.3	G31 Part II	612.1	G193 Part IV
903.3.2	G32 Part II	801.1	G193 Part IV
906.2	G71	802.1.4	G193 Part IV
Table 906.3(1)	G71	INTERNATIONAL MECHANICAL CODE	
Table 906.3(2)	G71		
907.2.6	G32 Part II, G71	202	G8
907.2.6.1	G31 Part II	304.11	E108
907.2.6.4 (new)	G32 Part II	306.5.1	E4
907.2.10.1	G71	403.2.1	G193 Part II
907.2.13.2	E4	Table 403.3	G193 Part II
907.5.2.2	E4	601.3	E228, E229
909.4.6	G32 Part II	901.5	FG3

INTERNATIONAL MECHANICAL CODE (continued)		406.1	G225, G226
		410.5.1(new)	G235
901.6	FG3	410.6	G235, G236, G237
926.2	FG38	410.7	G237, G238, G240
926.3	FG38	410.7.1	G240
1107.2	E4	410.8	G239, E211
1401.1	G193 Part II	410.8 (new)	G237
INTERNATIONAL FUEL GAS CODE		410.8.1 (new)	G237
		410.8.4	G241
202	G8	410.8.6	G242
306.5.1	E4	410.8.9	G235, G236
614.6	M71	410.8.11	G243
Section 617	G193 Part III	606.2.2	G221 Part II
617.1	G193 Part III	606.2.3.1	G224 Part II
629.1	M169	907.2	G213 Part II
INTERNATIONAL PRIVATE SEWAGE DISPOSAL CODE		907.2.1	G213 Part II
		907.2.2	G213 Part II
		1401.2	G244
202	G8, P228 (HEARD BY IBC-S)	1401.2.5	G245
401.3.2	G193 Part IV	1401.3.2	G246
Table 406.1	G193 Part IV	Table 1401.3.2(new)	G246
Table 604.1(2)	G193 Part IV	1401.6	G244
Table 802.7.2	G193 Part IV	1401.6.1	G101
Table 802.8	G193 Part IV	1401.6.1.1	G101
INTERNATIONAL EXISTING BUILDING CODE		1401.6.2	G101, G244
		1401.6.2.1	G101
Chapters 3 through 14	G205	1401.6.4	G244
202	G23, G24	Table 1401.6.4	G244
402.1	G210	1401.6.5	G244
402.4	G211	Table 1401.6.5	G57, G244
403.1	G210, G212	1401.6.6	G51
403.3 (new)	G213 Part I	1401.6.7	G244
403.3.1 (new)	G213 Part I	1401.6.8	G244
403.3.2 (new)	G213 Part I	Table 1401.6.8	G244
403.3.3 (new)	G213 Part I	1401.6.8.1	G244
403.4	G211	1401.6.9	G244
403.4.1(new)	G214	Table 1401.6.9	G244
403.4.5 (new)	G215, G216, G217	1401.6.10	G244
403.5 (new)	G218	Table 1401.6.10	G244
403.7 (new)	G219	1401.6.11	G244
403.7.1(new)	G219	Table 1401.6.11	G244
403.7.2(new)	G219	1401.6.12	G244
403.7.3(new)	G219	Table 1401.6.12	G244
404.1	G212	1401.6.12.1	G244
404.2 (new)	G220	1401.6.16	G244
404.2	G221 Part I	1401.6.16.1	G244
404.2.1	G211	1401.6.17	G244
404.2.2	G222	Table 1401.6.17	G244
404.3	G223	1401.6.18	G244
404.3.1	G224 Part I	Table 1401.6.18	G244
404.4	G222	1401.6.20 (new)	G244
404.2.3	G211, G212	Table 1401.6.20 (new)	G244
404.5	G212	1401.6.21 (new)	G244

**INTERNATIONAL EXISTING BUILDING CODE
(continued)**

Table 1401.6.21.1 (new)	G244
1401.6.21.1.1(new)	G244
1401.6.21.2(new)	G244
Table 1401.6.21.2(new)	G244
1401.6.21.2.1(new)	G244
1401.6.21.3(new)	G244
Table 1401.6.21.3	G244
1401.6.21.3.1(new)	G244
Table 1401.7	G244
1401.8	G244
Table 1401.8	G244

2012 GROUP A CODE DEVELOPMENT HEARING SCHEDULE

April 29 – May 8, 2012

Sheraton Dallas Hotel

Unless noted by “Start no earlier than X am,” each Code Committee will begin immediately upon completion of the hearings for the prior Committee. Thus the actual start times for the various Code Committees are tentative. The hearing volume is higher than previous cycles. The schedule anticipates that the hearings will finish by the times noted as “Finish” for each track.

Please note that the hearing start on Sunday, April 29th has been revised from 10:00 am to 12:00 pm from the originally posted version. Prior to the hearings starting at noon on Sunday, the following is also scheduled:

- Membership Councils: 8:00 am – 10:00 am
- CDP ACCESS update (Expanding code development participation): 10:15 am – 11:15 am

For more information on the scheduling of these two activities, be sure to check the link to the Member Committees page on the ICC Website: <http://www.iccsafe.org/membership/pages/committees.aspx>

	Sunday April 29	Monday April 30	Tuesday May 1	Wednesday May 2	Thursday May 3
TRACK 1	Start 12 pm IBC - FS End 9 pm	Start 8 am IBC - FS End 9 pm	Start 8 am IBC - FS IBC - G (Start no earlier than 8 am) End 9 pm	Start 8 am IBC - G End 9 pm	Start 8 am IBC - G IBC - E (Start no earlier than 8 am) End 9 pm
TRACK 2	Start 12 pm IFGC IPC/IPSDC End 9 pm	Start 8 am IPC/IPSDC End 9 pm	Start 8 am IPC/IPSDC IMC (Start no earlier than 8 am) End 9 pm	Start 8 am IMC End 9 pm	Start 8 am IMC IEBC - S (Start no earlier than 8 am) IBC - S End 9 pm

	Friday May 4	Saturday May 5	Sunday May 6	Monday May 7	Tuesday May 8
TRACK 1	Start 8 am IBC - E End 9 pm	Start 8 am IBC - E End 9 pm	Start 8 am IBC - E Finish 12 pm		
TRACK 2	Start 8 am IBC - S End 9 pm	Start 8 am IBC - S End 9 pm	Start 8 am IBC - S End 9 pm	Start 8 am IBC - S End 9 pm	Start 8 am IBC - S Finish 12 pm

Notes:

1. IEBC - S: Structural provisions in the IEBC to be heard by the IBC - Structural Code Committee.
2. Hearing times may be modified at the discretion of the Chairman.
3. Breaks will be announced. Lunch and dinner breaks planned for each track. There will not be a lunch break on Sunday, April 29th.

**2012 PROPOSED CHANGES TO
THE INTERNATIONAL CODES**

<u>CODE</u>	<u>PAGE</u>
International Building Code	
Fire Safety	FS1
General	G1
Means of Egress	E1
Structural (Including portions of International Existing Building Code).....	S1
 International Fuel Gas Code	 FG1
 International Plumbing Code	 P1
 International Mechanical Code	 M1
 Code Correlation Committee	 CCC1

2012 PROPOSED CHANGES TO THE INTERNATIONAL BUILDING CODE – GENERAL

GENERAL CODE COMMITTEE

Jerome Sanzone - Chair

District Director BOAF
Building Officials Association of Florida
Delray Beach, FL

Christina Jamison - Vice Chair

Division Chief/Fire Marshal
San Ramon Valley Fire Protection District
San Ramon, CA

Brian Black

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President
BDBlack & Associates
Hamburg, NY

Amy Carpenter, AIA, LEED

Principal
Lenhardt Rodgers/Architecture + Interiors
Fort Washington, PA

John D. Catlett, MCP

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Anthony Merlino

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Plans Examiner
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Daniel E. Nichols, PE

Fire Protection Engineer
New York State Division of Code Enforcement and
Administration
Albany, NY

Gregory Nicholls, AIA

Chief Building Official
City of Mason, Ohio
Mason, OH

Carroll Pruitt, FAIA, NCARB

President/CEO
Pruitt Consulting Inc.
Fort Worth, TX

John Stovall

Rep: National Association of Home Builders
NSArchitects
Rockville, MD

Staff Secretariat

Beth Tubbs, PE

Senior Staff Engineer
Codes and Standards Development
ICC - Boston Field Office
Northbridge, MA

TENTATIVE ORDER OF DISCUSSION 2012 PROPOSED CHANGES TO THE INTERNATIONAL BUILDING CODE

GENERAL

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation **does not** necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some IBC-G code change proposals may not be included on this list, as they are being heard by other committees. Please consult the Cross Index of Proposed Changes.

G27-12	G54-12	G87-12	G115-12
G28-12	G55-12	G88-12	G118-12
G29-12	G56-12	G89-12	G119-12
G30-12	G60-12	G90-12	G120-12
G1-12	G61-12	G91-12	G121-12
G31-12	G62-12	G94-12	G122-12
G32-12	G63-12	G95-12	G123-12
G34-12	G64-12	G96-12	G124-12
G35-12	G65-12	G98-12	G125-12
G36-12	G79-12	G99-12	G126-12
G37-12	G66-12	G100-12	G128-12
G33-12	G67-12	G2-12	G127-12
G38-12	G69-12	G101-12	G129-12
G39-12	G70-12	G102-12	G130-12
G41-12	G74-12	G103-12	G131-12
G40-12	G75-12	G104-12	G132-12
G42-12	G76-12	G105-12	G133-12
G43-12	G92-12	G106-12	G134-12
G44-12	G77-12	G107-12	G135-12
G45-12	G80-12	G108-12	G136-12
G46-12	G78-12	G109-12	G137-12
G47-12	G97-12	G110-12	G138-12
G13-12	G93-12	G111-12	S52-12
G48-12	G82-12	G112-12	S65-12
G49-12	G19-12	G113-12	G139-12
G50-12	G83-12	G114-12	G140-12
G256-12	G84-12	G116-12	G141-12
G53-12	G86-12	G117-12	G142-12, Part I

G143-12	G181-12	G247-12
G144-12	G183-12	G248-12
G145-12	G184-12	G249-12
G146-12	G190-12	G250-12
G147-12	G191-12	G251-12
G148-12	G192-12	G252-12
G149-12	G193-12, Part I	G253-12
G150-12	G193-12, Part II	G254-12
G151-12	G193-12, Part III	G255-12
G152-12	G193-12, Part IV	
G153-12	G194-12	
M35-12	G195-12	
G154-12	G196-12	
G155-12	G197-12	
G156-12	G198-12	
G157-12	G203-12	
G158-12	G199-12	
G159-12	G200-12	
G160-12	G201-12	
G161-12	G205-12 Part I	
G162-12, Part I	G205-12 Part II	
G162-12, Part II	G205-12 Part III	
G162-12, Part III	G205-12 Part IV	
G162-12, Part IV	G205-12 Part V	
G162-12, Part V	G205-12 Part VI	
G162-12, Part VI	G205-12 Part VII	
G162-12, Part VII	G205-12 Part VIII	
G163-12	G205-12 Part IX	
G164-12	G205-12 Part X	
G165-12	G205-12 Part XI	
G166-12	G205-12 Part XII	
G167-12	G202-12	
G169-12	G204-12	
G168-12, Part I	G206-12	
G168-12, Part II	G207-12	
G170-12	G208-12	
G171-12	G209-12	
G172-12	G210-12	
G173-12	G219-12	
G174-12, Part I	G220-12	
G174-12, Part II	G225-12	
G175-12	G226-12	
G176-12	G227-12	
G182-12	G229-12	
G177-12	G230-12	
G178-12	G231-12	
G179-12	G232-12	
G185-12	G233-12	
FS138-12	G244-12	
G180-12	G246-12	

G1 – 12

202

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care, Carl Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee

Revise as follows:

24-HOUR CARE BASIS. The actual time that a person is an occupant within a facility for the purpose of receiving care. It shall not include a facility that is open for 24 hours and is capable of providing care to someone visiting the facility during any segment of the 24 hours.

Reason: This code change is intended to clarify the code. In the last code cycle a change was made attempting to clarify the phrase “24 hour basis”. This term is used when determining the appropriate occupancy classification for facilities that provide custodial, medical or supervised care, including Group I-1, I-2 and R-4 (IBC 308.3, 308.4, 310.6). The committee accepted the clarification that in this context 24 hour care was intended to refer to the actual time that a patient is receiving care. Unfortunately, the code change used a phrase that was descriptive of the concept not the actual phrase used in the code. This code change corrects the term to the one used in code.

This proposal is submitted by the ICC Ad Hoc Committee on Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

Cost Impact: The proposed changes will not increase the cost of construction.

G1-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-24 HOUR BASIS-G-WILLIAMS-ADHOC

G2 – 12

202, Table 503

Proponent: Ron Burton, PTW advisors, LLC, representing Building Owners and Managers Association (BOMA) International (ronburton@ptwadvisors.com)

Revise as follows:

~~**AREA, BUILDING.** The area included within surrounding exterior walls (or exterior walls and fire walls) exclusive of vent shafts and courts. Areas of the building not provided with surrounding walls shall be included in the building area if such areas are included within the horizontal projection of the roof or floor above.~~

AREA, TOTAL BUILDING FLOOR: The total area of all floors within a building shall be determined in accordance with one of the following:

1. ANSI/BOMA Z65.1.
2. ANSI/BOMA Z65.2.
3. ANSI/BOMA Z65.3.
4. ANSI/BOMA Z65.4.
5. ANSI/BOMA Z65.5.

AREA, TOTAL FLOOR: The floor area of a building shall be determined in accordance with one of the following:

1. ANSI/BOMA Z65.1.
2. ANSI/BOMA Z65.2.
3. ANSI/BOMA Z65.3.
4. ANSI/BOMA Z65.4.
5. ANSI/BOMA Z65.5.

TABLE 503 ALLOWABLE BUILDING HEIGHTS AND AREAS^{a, b}

Building height limitations shown in feet above grade plane. Story limitations shown as stories above grade plane.

Building area limitations shown in square feet, as determined by the definition of “Area, building,”
“Area, Total Building Floor” per story
(Portions of table not shown remain unchanged)

Add new standards to Chapter 35 as follows:

BOMA

Building Owners and Managers Association (BOMA) International
1101 15th Street NW, Suite 800
Washington, DC 20005

ANSI/BOMA Z65.1-10 Office Buildings: Standard Methods of Measurement

ANSI/BOMA Z65.2-09 Industrial Buildings: Standard Methods of Measurement

ANSI/BOMA Z65.3-09 The Gross Areas of a Building: Standard Methods of Measurement

ANSI/BOMA Z65.4-10 Multi-Unit Residential Buildings: Standard Methods of Measurement

ANSI/BOMA Z65.5-10 Retail Buildings: Standard Methods of Measurement

Reason: In 1915, BOMA created the *Standard Method of Floor Measurement* for office buildings. This voluntary standard has gradually evolved through several updates to the current *Office Buildings: Standard Methods of Measurement (2010)*. Typically referred to as “the BOMA standard”, it is now one of five ANSI certified measurement standards published by BOMA. Four of the standards address different product types – Office, Retail, Industrial and Multi-Unit Residential buildings – and one, the Gross Area measurement standard, applies to all product types and certain leasing situations.

- *Office Buildings: Standard Methods of Measurement (2010)* is intended to measure floor areas in buildings whose occupancy is at least 75% office space, including ground level retail storefronts. It has been designated as an American National Standard by the American National Standards Institute (ANSI) and is referred to as ANSI/BOMA Z65.1-2010.
- *Industrial Buildings: Standard Methods of Measurement (2009)* is intended to measure floor areas in buildings whose occupancy is at least 51% industrial, including warehouses, distribution centers and factories. Developed jointly with the Society of Industrial and Office Realtors (SIOR) and originally published in 2004, it has been designated as an American National Standard by the American National Standards Institute (ANSI) and is referred to as ANSI/BOMA Z65.2-2009.
- *Multi-Unit Residential Buildings: Standard Methods of Measurement (2010)* is targeted at residential buildings containing four or more living units, including apartments and condominiums. It was developed jointly with the Institute of Real Estate Management (IREM), the National Association of Home Builders (NAHB) and the National Multi Housing Council (NMHC), and has been designated as an American National Standard by the American National Standards Institute (ANSI) and is referred to as ANSI/BOMA Z65.4-2010.
- *Retail Buildings: Standard Method of Measurement (2010)* applies to shopping centers, strip shopping centers, big-box stores, and similar retail buildings. It has been designated as an American National Standard by the American National Standards Institute (ANSI) and is referred to as ANSI/BOMA Z65.5-2010.
- *The Gross Areas of a Building: Methods of Measurement (2009)* can be applied to any product type and is often used as a basis for construction cost estimating, some kinds of appraisal and tax assessment. Where an entire building is leased to single tenant, leases are often based upon the gross area of a building. It has been designated as an American National Standard by the American National Standards Institute (ANSI) and is referred to as ANSI/BOMA Z65.3-2009.

The current definition for Area, Building contained in Section 202 is overly broad and can easily result in misinterpretation of the actual area encompassed by each building floor and the total area of the building. The five standards listed for the measurement of floor and building area reference are ANSI standards and provide consistency in determining the measurement of building areas in specific occupancies and multi-use buildings governed by the IBC.

Cost Impact: The proposed changes will **NOT** increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, ANSI/BOMA Z65.1-10, Z65.2-09, Z65.3—09, Z65.4-10 AND Z65.5-10 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2012.

G2-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-AREA, BUILDING-G-BURTON

G3 – 12 202

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Proponent: Jason Thompson (jthompson@ncma.org), National Concrete Masonry Association, Phil Samblanet (psamblanet@masonrysociety.org), The Masonry Society, representing Masonry Alliance for Codes and Standards

Revise definitions in Chapter 2 as follows:

~~**BOND BEAM.** A horizontal grouted element within *masonry* in which reinforcement is embedded.~~

~~**CLEANOUT.** An opening to the bottom of a grout space of sufficient size and spacing to allow the removal of debris.~~

MASONRY. A built-up construction or combination of building units or materials of clay, shale, concrete, glass, gypsum, stone or other *approved* units bonded together with or without *mortar* or grout or other accepted methods of joining.

~~**Ashlar masonry.** Masonry composed of various sized rectangular units having sawed, dressed or squared bed surfaces, properly bonded and laid in *mortar*.~~

~~**Coursed ashlar.** Ashlar masonry laid in courses of stone of equal height for each course, although different courses shall be permitted to be of varying height.~~

Glass unit masonry. Masonry composed of glass units bonded by *mortar*.

Plain masonry. Masonry in which the tensile resistance of the masonry is taken into consideration and the effects of stresses in reinforcement are neglected.

~~**Random ashlar.** Ashlar masonry laid in courses of stone set without continuous *joints* and laid up without drawn patterns. When composed of material cut into modular heights, discontinuous but aligned horizontal *joints* are discernible.~~

Reinforced masonry. Masonry construction in which reinforcement acting in conjunction with the masonry is used to resist forces.

Solid masonry. Masonry consisting of solid masonry units laid contiguously with the *joints* between the units filled with *mortar*.

Unreinforced (plain) masonry. Masonry in which the tensile resistance of masonry is taken into consideration and the resistance of the reinforcing steel, if present, is neglected.

RUBBLE MASONRY. *Masonry* composed of roughly shaped stones.

~~**Coursed rubble.** Masonry composed of roughly shaped stones fitting approximately on level beds and well bonded.~~

~~**Random rubble.** Masonry composed of roughly shaped stones laid without regularity of coursing but well bonded and fitted together to form well divided *joints*.~~

~~**Rough or ordinary rubble.** Masonry composed of unsquared field stones~~

SHEAR WALL (For Chapter 21)

Detailed plain masonry shear wall. A masonry shear wall designed to resist lateral forces neglecting stresses in reinforcement, and designed in accordance with Section 2106.1.

Intermediate prestressed masonry shear wall. A prestressed masonry shear wall designed to resist lateral forces considering stresses in reinforcement, and designed in accordance with Section 2106.1.

Intermediate reinforced masonry shear wall. A masonry shear wall designed to resist lateral forces considering stresses in reinforcement, and designed in accordance with Section 2106.1.

Ordinary plain masonry shear wall. A masonry shear wall designed to resist lateral forces neglecting stresses in reinforcement, and designed in accordance with Section 2106.1.

Ordinary plain prestressed masonry shear wall. A prestressed masonry shear wall designed to resist lateral forces considering stresses in reinforcement, and designed in accordance with Section 2106.1.

Ordinary reinforced masonry shear wall. A masonry shear wall designed to resist lateral forces considering stresses in reinforcement, and designed in accordance with Section 2106.1.

Special prestressed masonry shear wall. A prestressed masonry shear wall designed to resist lateral forces considering stresses in reinforcement and designed in accordance with Section 2106.1 except that only grouted, laterally restrained tendons are used.

Special reinforced masonry shear wall. A masonry shear wall designed to resist lateral forces considering stresses in reinforcement, and designed in accordance with Section 2106.1.

STACK BOND. The placement of *masonry units* in a bond pattern is such that head *joints* in successive courses are vertically aligned. For the purpose of this code, requirements for stack bond shall apply to *masonry* laid in other than *running bond*.

STONE MASONRY. *Masonry* composed of field, quarried or *cast stone* units bonded by *mortar*.

Ashlar stone masonry. Stone masonry composed of rectangular units having sawed, dressed or squared bed surfaces and bonded by *mortar*.

Rubble stone masonry. Stone masonry composed of irregular shaped units bonded by *mortar*.

WALL. A vertical element with a horizontal length-to-thickness ratio greater than three, used to enclose space.

Cavity wall. A wall built of *masonry units* or of concrete, or a combination of these materials, arranged to provide an airspace within the wall, and in which the inner and outer parts of the wall are tied together with metal ties.

Composite wall. A wall built of a combination of two or more *masonry units* bonded together, one forming the backup and the other forming the facing elements.

Dry-stacked, surface-bonded wall. A wall built of concrete *masonry units* where the units are stacked dry, without *mortar* on the bed or head *joints*, and where both sides of the wall are coated with a surface-bonding *mortar*.

~~**Masonry-bonded hollow wall.** A multi-wythe wall built of masonry units arranged to provide an air space between the wythes and with the wythes bonded together with masonry units.~~

Parapet wall. The part of any wall entirely above the roof line.

Reason: This change proposal deletes masonry-specific terms that are no longer used within Chapter 21 or elsewhere within the IBC.

Cost Impact: The code change proposal will not increase the cost of construction.

G3-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-BOND BEAM-G-SAMBLANET-THOMPSON

G4 – 12

202

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Proponent: Chuck Bajnai, Chesterfield County, VA., Robert Rice, Josephine County Oregon, representing Oregon Building Officials Association (structdesigner@yahoo.com)

Revise as follows:

BRACED WALL LINE. ~~A series of *braced wall panels* in a single story that meets the requirements of Section 2308.3 or 2308.12.4.~~ A straight line through the building plan that represents the location of the lateral resistance provided by the wall bracing.

BRACED WALL PANEL. ~~A section of wall braced in accordance with Section 2308.9.3 or 2308.12.4.~~ A full-height section of wall constructed to resist in-plane shear loads through interaction of framing members, sheathing material and anchors. The panel's length meets the requirements of its particular bracing method, and contributes toward the total amount of bracing required along its *braced wall line* in accordance with Section 2308.6.

Reason: This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

This proposal clarifies the requirements of both "Braced wall lines" and "Braced wall panels". The proposed definitions are consistent with the definitions in the IRC which reflect the work of ICC's Ad-Hoc Wall Bracing Committee from previous code cycles.

Cost Impact: The proposed changes will not increase the cost of construction.

G4-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-BRACED WALL LINE-G-BAJNAI-RICE

G5 – 12
202

THIS PROPOSAL IS ON THE AGENDA OF THE IBC FIRE SAFETY CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC GENERAL CODE DEVELOPMENT COMMITTEE.

Proponent: Bob Eugene, Underwriters Laboratories (Robert.Eugene@ul.com)

Revise as follows:

CEILING RADIATION DAMPER. A *listed* device installed in a ceiling membrane of a fire-resistance-rated floor/ceiling or roof/ceiling assembly to limit *automatically* the radiative heat transfer through an air inlet/outlet opening. Ceiling radiation dampers include air terminal units, ceiling dampers and ceiling air diffusers.

Reason: The added wording specifies the three types of products which provide protection at air inlet/outlet openings.

Cost Impact: The proposed changes will not increase the cost of construction.

G5-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-CEILING RADIATION DAMPER-G-EUGENE

G6 – 12 202

THIS PROPOSAL IS ON THE AGENDA OF THE IBC FIRE SAFETY CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC FIRE SAFETY CODE DEVELOPMENT COMMITTEE.

Proponent: Tony Crimi, A.C. Consulting Solutions Inc., representing International Firestop Council (tcrimi@sympatico.ca)

Revise as follows:

CERAMIC FIBER BLANKET. A high temperature mineral wool insulation material made of alumina-silica ceramic or calcium magnesium silicate soluble fibers and weighing 4 to 10 pounds per cubic foot (pcf) (64 to 160 kg/m³).

Reason: The current IBC definition for ceramic fiber blanket is out of date. Current ceramic fiber technology includes either alumino-silica or calcium magnesium silicate soluble fibers. This definition is referenced in 722.2.1.3.1 and Figure 722.2.1.3.1 which shows thicknesses of *ceramic fiber blankets* to be used generically to insulate joints between precast concrete wall panels for various panel thicknesses and joint widths.

Calcium magnesium silicate fibers have been found to provide equivalent or better performance when tested to numerous Standards referenced in the IBC & IMC, including ASTM E136, ASTM E119, ASTM E814, and ASTM E2336.

Cost Impact: This change will not affect the cost of construction.

G6-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-CERAMIC FIBER BLANKET-G-CRIMI

G7 – 12
202

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Proponent: Gregg Achman, Hearth & Home Technologies (achmang@hearthnhome.com)

Revise as follows:

[M] CHIMNEY. A primarily vertical ~~enclosure~~ structure containing one or more ~~passageways~~ flues, for ~~conveying flue gases to the outside~~ the purpose of carrying gaseous products of combustion and air from a fuel burning appliance to the outdoor atmosphere.

Factory-built chimney. *A listed and labeled chimney composed of factory-made components, assembled in the field in accordance with manufacturer's instructions and the conditions of the listing.*

Masonry chimney. *A field-constructed chimney composed of solid masonry units, bricks, stones, or concrete.*

Metal chimney. *A field-constructed chimney of metal.*

Reason: This provides common language for the definition of a CHIMNEY in the IBC with both the IMC and IFGC.

Cost Impact: The code change proposal will not increase cost of the construction.

G7-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-CHIMNEY-G-ACHMAN

G8 – 12 202

Proponent: John Ingargiola and Gregory Wilson, representing Department of Homeland Security, Federal Emergency Management Agency (john.ingargiola@dhs.gov, gregory.p.wilson@dhs.gov), Rebecca Quinn, RCQuinn Consulting, Inc., representing Federal Emergency Management Agency (rcquinn@earthlink.net).

THIS IS A 4 PART CODE CHANGE PROPOSAL. ALL FOUR PARTS WILL BE HEARD BY THE IBC STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

PART I – IPC

Revise as follows:

SECTION 202 DEFINITIONS

IPC [B] DESIGN FLOOD ELEVATION. The elevation of the “design flood,” including wave height, relative to the datum specified on the community’s legally designated flood hazard map. In areas designated as Zone AO, the *design flood elevation* shall be the elevation of the highest existing grade of the *building’s* perimeter plus the depth number (in feet) specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number shall be taken as being equal to 2 feet (610 mm).

PART II – IMC

Revise as follows:

SECTION 202 DEFINITIONS

IMC [B] DESIGN FLOOD ELEVATION. The elevation of the “design flood,” including wave height, relative to the datum specified on the community’s legally designated flood hazard map. In areas designated as Zone AO, the *design flood elevation* shall be the elevation of the highest existing grade of the *building’s* perimeter plus the depth number (in feet) specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number shall be taken as being equal to 2 feet (610 mm).

PART III – IFGC

Revise as follows:

SECTION 202 DEFINITIONS

IFGC [B] DESIGN FLOOD ELEVATION. The elevation of the “design flood,” including wave height, relative to the datum specified on the community’s legally designated flood hazard map. In areas designated as Zone AO, the *design flood elevation* shall be the elevation of the highest existing grade of the *building’s* perimeter plus the depth number (in feet) specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number shall be taken as being equal to 2 feet (610 mm).

PART IV – IPSDC

Revise as follows:

**SECTION 202
DEFINITIONS**

IPSDC [B] DESIGN FLOOD ELEVATION. The elevation of the “design flood,” including wave height, relative to the datum specified on the community’s legally designated flood hazard map. In areas designated as Zone AO, the *design flood elevation* shall be the elevation of the highest existing grade of the *building’s* perimeter plus the depth number (in feet) specified on the flood hazard map. In areas designated as Zone AO where a depth number is not specified on the map, the depth number shall be taken as being equal to 2 feet (610 mm).

Reason: This definition is controlled by the IBC; this proposal brings the IPC, IMC, IFGC, and IPSDC, IEBC definitions in line with the term as defined by the IBC.

Cost Impact: The code change proposal will not increase the cost of construction.

G8-12

PART I - IPC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II - IMC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART III - IFGC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART IV - IPSDC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-P-DESIGN FLOOD ELEVATION-INGARGIOLA-WILSON.doc

G9 – 12

202

Proponent: Gregory R. Keith, Professional heuristic Development, representing The Boeing Company (grkeith@mac.com)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Delete and Substitute as follows:

SECTION 202 DEFINITIONS

~~**EXIT, HORIZONTAL.** A path of egress travel from one building to an area in another building on approximately the same level, or a path of egress travel through or around a wall or partition to an area on approximately the same level in the same building, which affords safety from fire and smoke from the area of incidence and areas communicating therewith.~~

HORIZONTAL EXIT. An exit component consisting of fire-resistance rated construction and opening protectives intended to compartmentalize portions of a building thereby creating refuge areas that afford safety from the fire and smoke from the area of fire origin.

Reason: This proposed definition clarifies what a horizontal exit actually is. Clearly, it is not a path of egress travel as is currently stated. Contained within the definition of "EXIT," a horizontal exit is classified as an "exit component." Section 1025 provides for the physical construction requirements intended to segregate portions of the building and intended to create refuge areas. The proposed definition more accurately describes the general nature of the horizontal exit and leaves the specifics of the various building configuration and fire-resistance rating options to Section 1025.

Cost Impact: The code change proposal will not increase the cost of construction.

G9-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-EXIT, HORIZONTAL-G-KEITH

G10 – 12

202

Proponent: Stephen Kerr, SE, (skerr@jwa-se.com) Josephson Werdotatz and Associates, representing Structural Engineers Association of California (SEAOC)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Revise as follows:

FABRICATED ITEM. Structural, load-bearing or lateral load-resisting assemblies consisting of materials or manufactured items assembled prior to installation in a building or structure, or subjected to operations such as heat treatment, thermal cutting, cold working or reforming after manufacture and prior to installation in a building or structure. Materials produced in accordance with standard specifications referenced by this code, such as rolled structural steel shapes, steel reinforcing bars, *masonry units* and wood structural panels, or in accordance with a referenced standard which provides requirements for quality control done under the supervisions of a third-party quality control agency, shall not be considered “fabricated items.”

PREFABRICATED ITEM. A fabricated item.

Reason: Fabricated items can include assemblies of manufactured items such as a truss made of glu-lams, or a wall panel that includes plywood. The new definition of “prefabricated item” is needed so that such items will be subject to the same inspection and special inspection as fabricated items. Examples of the use of the term “prefabricated” in the code include **1703.6 Evaluation and follow-up inspection services**, and **1705.5 Wood Construction**.

Cost Impact: The code change proposal will not increase the cost of construction.

Staff note: While the term ‘prefabricated’ is used in the code, the term ‘prefabricated item’ is not used in the code.

G10-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-FABRICATED ITEM-G-KERR

G11 – 12

202

Proponent: Tim Nogler, Washington State Building Code Council, representing Washington Association of Building Officials Technical Code Development Committee (time.nogler@des.wa.gov)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC FIRE SAFETY CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC FIRE SAFETY CODE DEVELOPMENT COMMITTEE.

Revise as follows:

FIRE SEPARATION DISTANCE. The distance measured from the ~~building face~~ foundation wall or face of the wall framing, whichever is closer, to one of the following:

1. The closest interior *lot line*;
2. To the centerline of a street, an alley or *public way*; or
3. To an imaginary line between two buildings on the property.

The distance shall be measured at right angles from the ~~face of the wall~~.

Reason: The purpose of this code change proposal is to clarify where the building separation distance measurement is made, increasing consistency in enforcement. The current code states "measured from the building face". The term "building face" is not defined in the code, causing differing interpretations. The fire separation distance measurement is normally verified during the foundation inspection. The nearest face of the foundation stem wall is typically the point from which the building inspector measures. For designs including cantilevered floors, the measurement is derived by review of the plans and calculated based on distance specified from foundation to exterior wall. Either way the building placement commitment occurs at the time the foundation is set. The definition in the code should establish a consistent and uniform location which reflects the actual measurement taken on site.

Cost Impact: The code change proposal will not increase the cost of construction.

G11-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-FIRE SEPARATION DISTANCE-G-NOGLER

G12 – 12

202

Proponent: Gregg Achman, Hearth & Home Technologies (achmang@hearthnhome.com)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Revise as follows:

FIREPLACE. ~~A hearth and fire chamber or similar prepared place in which a fire may be made and which is built in conjunction with a chimney.~~ An assembly consisting of a hearth and fire chamber of noncombustible material and provided with a *chimney*, for use with solid fuels.

Factory-built fireplace. A *listed* and *labeled* fireplace and *chimney* system composed of factory-made components, and assembled in the field in accordance with manufacturer's instructions and the conditions of the listing.

Masonry fireplace. A field-constructed fireplace composed of solid masonry units, bricks, stones or concrete.

Reason: This provides common language for the definition of a FIREPLACE in the IBC to that of the IMC and IFGC

Cost Impact: The code change proposal will not increase the cost of construction.

G12-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-FIREPLACE-G-ACHMAN

G13 – 12

202

Proponent: Gene Boecker, Code Consultants, Inc., representing self

Revise as follows:

HIGH-RISE BUILDING. A building with an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access. In determining the lowest level of fire department vehicle access, it shall not be required to consider recessed loading docks for four vehicles or less and conditions where topography makes access from the fire department vehicle to the building impractical or impossible.

Reason: Add to the definition the same exception as is found in exception #5 to Section 905.3.1. Section 905.3.1 provides two reasonable clarifications of how the lowest level of fire department vehicle access should be determined. This should also be applied in this case as part of the definition for a high-rise building. A small loading dock should not be the factor that causes a building to be considered high rise. Nor should a building be considered high rise where the structure is only four stories in height but has one side that overlooks a ravine with a road at the bottom.

Cost Impact: The code change proposal will not increase the cost of construction.

G13-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-E-HIGH-RISE-BOECKER (2)

G14 – 12

202

Proponent: Tony Crimi, A.C. Consulting Solutions (tcrimi@smpatico.ca), Gary Hamilton, Hamilton Benchmark; William Koffel, P.E., Koffel Associates; John Valiulis, Hilti, Inc. (john.valiulis@hilti.com), representing Firestop Contractors International Association

THIS PROPOSAL IS ON THE AGENDA OF THE IBC FIRE SAFETY CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC FIRE SAFETY CODE DEVELOPMENT COMMITTEE.

Revise as follows:

SECTION 202 DEFINITIONS

JOINT. ~~The opening in or between adjacent assemblies that~~ The junction where adjacent assemblies intersect without applying a static load from one element to another, with or without physical contact between the assemblies, which is created due to building tolerances, or is designed to allow independent movement of the building in any plane caused by thermal, seismic, wind or any other loading.

Reason: The definition is revised to clarify that a “joint” is not an opening, per se, but rather is where two independent surfaces intersect, with or without contact, and with or without an obvious opening. For example, if the space between two building elements has been filled with some material (e.g. a backer rod), then it is still a “joint”, even though the opening was filled, thus literally leaving no opening.

The definition proposed here is based on the definition of building joint from Wikipedia.org.

Cost Impact: Will not increase the cost of construction.

G14-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-JOINT-G-CRIMI-HAMILTON-KOFFEL-VALIULIS.doc

G15 – 12

202

Proponent: William Koffel, P.E., Koffel Associates, representing Firestop Contractors International Association (wkoffel@koffel.com)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC FIRE SAFETY CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC FIRE SAFETY CODE DEVELOPMENT COMMITTEE.

Revise as follows:

JOINT. The opening in or between adjacent assemblies that interrupts the continuity of a fire-rated or smoke-rated assembly and either involves the intersection of dissimilar materials or assemblies, is created due to building tolerances, or is designed to allow independent movement of the building in any plane caused by thermal, seismic, wind or any other loading.

Reason: The test of a fire resistance rated assembly involves testing the joints within the assembly. However, the edges of the assembly are not evaluated in the same manner. Thermocouples are not placed within 12 inches of the edges of the assembly unless an element of the assembly is located only near the edge of the assembly. In addition to the current concept, that a joint is created due to building tolerances or to allow independent movement, an additional situation would also be considered a joint. If a fire resistance rated gypsum wall assembly intersects with a concrete masonry wall assembly, the intersection would now be considered a joint.

Cost Impact: Increased cost of construction where joints are currently not being properly protected

G15-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-JOINT-G-KOFFEL

G16 – 12

202

Proponent: Joe Nebbia and Mark Nowak, Steel Framing Alliance

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Add new definition as follows:

METHODS OF TERMITE PROTECTION. Framing materials such as concrete, treated wood, or steel which remove the food source for termites, or products or services which control the access to and entry of termites into a building or structure.

Reason: Section 2304.11.6 specifies methods of termite protection but provides no guidance for the designer or building official as to what these methods are. There are many different types of approaches used to prevent termite damage in addition to treated wood. This proposal will identify other options currently being used successfully for termite protection.

Cost Impact: This code change proposal will not increase the cost of construction.

G16-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-METHODS OF TERMITE PROTECTION (NEW)-G-NEBBIA-NOWAK

G17 – 12

202

Proponent: Terry L. Amburgey, PhD, AMBAR, Inc., representing A Group of Independent Wood Scientists located in the USA and Canada (terramburgey@yahoo.com)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Revise as follows:

NATURALLY DURABLE WOOD. The heartwood of the following species except for the occasional piece with corner sapwood, provided 90 percent or more of the width of each side on which it occurs is heartwood.

Decay resistant. Redwood, cedar, black locust and black walnut.

Termite resistant. Redwood, Alaska yellow cedar, Eastern red cedar and ~~both heartwood and all sapwood~~ of Western red cedar

Reason: It is well known that the sapwood of virtually all wood species is susceptible to deterioration by fungi and insects such as subterranean termites. However, it should be recognized that the durability of all "naturally durable" woods can be classified as moderately resistant, resistant, or very resistant. In addition, the heartwood durability of a given species may vary according to its position in a tree, so caution should be used when specifying the use of naturally durable wood in lieu of pressure treated wood. We suggest that you reference a readily-available source of literature (e.g., Wood Handbook. "Wood as an Engineering Material", General Technical Report FPL-GTR-113. Forest Products Laboratory, USDA Forest Service) as a source of information on naturally durable (resistant) wood species.

Cost Impact: This code change proposal will not increase the cost of construction.

G17-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-NATURALLY DURABLE WOOD-G-AMBURGEY

G18 – 12

202 (NEW)

Proponent: Tony Crimi, A.C. Consulting Solutions, representing North American Insulation Manufacturers Association (NAIMA) (tcrimi@smpatico.ca)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC FIRE SAFETY CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC FIRE SAFETY CODE DEVELOPMENT COMMITTEE.

Add new definition to Chapter 2 as follows:

SECTION 202 DEFINITIONS

NONCOMBUSTIBLE MATERIAL. A material that is not capable of igniting and burning. Materials that meet the acceptance criteria of ASTM E 136 or ASTM E2652 are considered noncombustible materials.

Reason: There is a need for a definition of “noncombustible material” in the IBC. Several of the I-Codes have varying definitions of the term “non-combustible material”, each based upon the way in which the concept of “non-combustible” is used within that Code. Throughout the ICC code system, the concept of “noncombustible material” is based on the idea that the material should not ignite or burn when subjected to fire or heat The IBC, which uses the term extensively, does not contain a specific definition.

Justification: The concept of “noncombustible materials” and “noncombustibility” in terms of types of construction is widely used throughout the International Codes. While the IRC, IMC, and IWUIC all contain definitions of the term, they are all different from each other.

In contrast, the IBC, IFC, IEBC and IFGC do not contain a separate definition, even though they use the terminology “non-combustible materials”. There is a need for a consistent definition of “noncombustible material” in all ICC codes that use the term.

In common usage, the term “noncombustible” is used to denote materials which do not ignite or are not capable of sustaining combustion. The common Dictionary definitions for “noncombustible” are typically as follows:

Noncombustible, adj – not capable of igniting and burning (Webster’s Third New International Dictionary of the English Language, Unabridged, 2007)

In contrast to the common usage, the traditional use of the terminology and concept of “noncombustible materials” in the Codes has been based on acceptable performance when tested in accordance with ASTM E136, Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C. Materials passing the test are permitted limited flaming and other indications of combustion. However, these have traditional been acceptable. The criterion requiring four specimens to be tested recognizes the variable nature of the measurements and the fact that there are difficulties in observing the presence and duration of flaming.

Understandably, ASTM E136 does not replicate the full spectrum of actual building fire exposure conditions. However, this test method does provide an assessment indicating those materials which do not act to aid combustion or add appreciable heat to an ambient fire. According to the 2009 IBC Commentary, the defined furnace temperature in the standard, 1,382°F (750°C), is representative of temperatures that are known to exist during building fires, although temperatures between 1,800°F (982°C) and 2,200°F (1204°C) are frequently achieved during intense fires. For most building materials, however, complete burning of the combustible fraction will occur as readily at 1,382°F (750°C) as compared to higher temperatures.

While each of the model I-Codes which reference the term “noncombustible” do have unique additional attributes, we are in agreement with the original proponent, that these are best addressed outside of the definition. For example, section 703.4 of the IBC does provide additional requirements and acceptance criteria which are specific to its own intent and contained in Sections 602.2, 602.3, and 602.4. However, this section only describes “Noncombustibility Tests”, rather than providing a definition.

Cost Impact: This proposal does not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E 2652 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2012. Note that ASTM E 136 is already referenced in the IBC.

G18-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-NON COMBUSTIBLE MATERIAL (NEW)-G-CRIMI

G19 – 12

202

Proponent: Al Godwin, CBO, CPM, representing Aon Fire Protection Engineering (al.godwin@aon.com)

Revise as follows:

PLATFORM. A raised area within a building used for worship, the presentation of music, plays or other entertainment; the head table for special guest; the raised area for lecturers and speakers; boxing and wrestling rings; theater-in-the-round stages; and similar purposes wherein, other than horizontal sliding curtains, there are no overhead hanging curtains, drops, scenery or stage effects other than lighting and sound. A temporary platform is one installed for not more than 30 days.

Reason: The definition is not clear if the overhead curtain is a vertical curtain or does it prohibit horizontal curtains as well. The commentary states “Thus, since the fuel load on platforms is ordinarily low and there is no fuel load overhead in areas that would be difficult to access, the code requirements for platforms are less stringent than for stages.” Thus, it is implied that the definition of overhead hanging curtains is vertical. As such, horizontal curtains are permitted. Many schools have a raised platform in the cafeteria used for school presentations. These designs have existed for years with no problems. It should be made more clear in the code that horizontal curtains are permitted.

Cost Impact: This code change proposal will not increase the cost of construction.

G19-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-PLATFORM-GODWIN

G20 – 12 202

Proponent: Michael D. Fischer, Kellen Company, representing Asphalt Roofing Manufacturers Association (mfischer@kellencompany.com)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Revise as follows:

ROOF RECOVER. ~~The process of installing~~ An alteration consisting of the installation of an additional roof covering over a prepared existing roof covering without removing the existing roof covering.

ROOF REPLACEMENT. ~~The process of removing~~ An alteration consisting of the removal of the existing roof covering, repairing any damaged substrate and installing a new roof covering.

Reason: This proposal modifies the current definitions for roof recover to clarify that these activities are alterations. This identification is necessary to ensure that all pertinent provisions of Chapter 34 are considered.

Cost Impact: The proposal will not increase the cost of construction.

G20-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-ROOF RECOVER-G-FISCHER

G21 – 12 202

Proponent: Gary J. Ehrlich, P.E., National Association of Home Builders (NAHB) (gehrlich@nahb.org)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Add new definition to Chapter 2 as follows:

SHINGLE FASHION. A method of installing roof or wall coverings, water-resistive barriers, flashing, or other building components such that upper or outer layers of material are placed overlapping lower or inner layers of material to provide for drainage and moisture control.

Reason: The purpose of this code change is to introduce a definition for “shingle fashion”. This term is used in the IBC and IRC to describe the required method of applying moisture control layers such as roof underlayment and water-resistive barriers to the building. The intent is to direct the builder, contractor or installer to place upper layers of material lapping over lower layers of material, in the fashion of placing roof shingles, so moisture is provided with a clear path to drain down and away from the building. In field investigations of buildings with mold and moisture issues, it is frequently discovered that flashing, WRBs or underlayment have been placed in *reverse* shingle fashion, with the upper layer tucked behind the lower layer. This permits moisture to drain behind or below the intended protective layer or material where it can be trapped and lead to mold and decay of building components. A definition would therefore be of use in giving direction as to the proper installation of these materials.

Cost Impact: The code change proposal will not increase the cost of construction.

G21-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-SHINGLE FASHION (NEW)-G-EHRLICH

G22 – 12

202

Proponent: Philip Brazil, P.E., Reid Middletown, Inc., representing Washington Association of Building Officials, Technical Code Development (pbrazil@reidmiddleton.com)

Delete without substitution as follows:

SPECIFIED. ~~Required by construction documents.~~

Reason: Given the use of the term in a multitude of contexts throughout the building code, it is not considered appropriate to define "specified" in such a narrow manner as "required by construction documents." Note that the definition was located in Section 2102 of in the 2009 IBC and the scoping statement in Section 2102.1 specified that all the definitions in Section 2102 are applicable throughout the building code.

Cost Impact: The code change proposal will not increase the cost of construction.

G22-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-SPECIFIED-BRAZIL

G23 – 12 202

Proponent: John Ingargiola (john.ingargiola@dhs.gov) and Gregory Wilson (gregory.p.wilson@dhs.gov), representing Department of Homeland Security, Federal Emergency Management Agency, Rebecca C. Quinn, RCQuinn Consulting, Inc. (rcqinn@earthlink.net), representing Department of Homeland Security, Federal Emergency Management Agency

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Revise as follows:

SUBSTANTIAL IMPROVEMENT. Any *repair*, reconstruction, rehabilitation, alteration, addition or other improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or *repair* is started. If the structure has sustained *substantial damage*, any repairs are considered substantial improvement regardless of the actual *repair* work performed. The term does not, however, include either:

1. Any project for improvement of a building required to correct existing health, sanitary or safety code violations identified by the *building official* and that ~~are~~ is the minimum necessary to assure safe living conditions.
2. Any *alteration* of a historic structure provided that the *alteration* will not preclude the structure's continued designation as a historic structure.

Reason: The IBC Chapter 34 and the International Existing Building Code are structured to govern repairs, alterations, change of occupancy, and additions. Sections 3404.2, EB403.2 and EB701.3 have requirements for compliance with flood provisions if alterations are determined to be substantial improvement. This proposal does not change any meaning or technical requirement. It simply adds the term "alteration" for consistency with terms used in the code, and adds the word "other" to capture any improvement regardless of what it is called, including those associated with change of occupancy.

Cost Impact: None

G23-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-SUBSTANTIAL IMPROVEMENT-G-INGARGIOLA-WILSON-QUINN

G24 – 12 202

Proponent: David Bonowitz, David Bonowitz S.E., representing NCSEA Code Advisory Committee, Existing Buildings Subcommittee (dbonowitz@att.net)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Revise as follows:

SUBSTANTIAL STRUCTURAL DAMAGE. A condition where:

1. ~~In any story, the~~ The vertical elements of the lateral force resisting system have suffered damage such that the lateral load-carrying capacity of ~~the structure~~ any store in any horizontal direction has been reduced by more than 33 percent from its predamage condition; or
2. The capacity of any ~~vertical gravity load-carrying component,~~ vertical component carrying gravity load, or any group of such components, that supports more than 30 percent of the total area of the structure's floors and roofs has been reduced more than 20 percent from its predamage condition and the remaining capacity of such affected elements, with respect to all dead and *live loads*, is less than 75 percent of that required by this code for new buildings of similar structure, purpose and location.

Reason: The proposal makes two clarifications to remove potential confusion. Both changes maintain the intent of the current definition.

In item 1, the change clarifies that the potential loss of capacity can be in any story and that the focus on "any story" relates to the capacity loss, not necessarily to the location of the damage.

In item 2, the change clarifies that "vertical" refers to the orientation of the components of interest, not the direction of the gravity loads.

Cost Impact: The proposed changes will not increase the cost of construction.

G24-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-SUBSTANTIAL STRUCTURE DAMAGE

G25 – 12

202, Chapter 35

Proponent: Marcelo M. Hirschler, GBH International (gbhint@aol.com)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Revise as follows:

SECTION 202 DEFINITIONS

FIRE-RETARDANT TREATED WOOD. A homogeneous wood product, impregnated with chemical by a pressure process or other means during manufacture, which complies with the requirements of ASTM E2768.

TREATED WOOD. Wood and wood-based materials that use vacuum-pressure impregnation processes to enhance fire retardant or preservative properties.

~~**Fire-retardant-treated wood.** Pressure-treated lumber and plywood that exhibit reduced surface burning characteristics and resist propagation of fire.~~

Preservative-treated wood. Pressure-treated wood products that exhibit reduced susceptibility to damage by fungi, insects or marine borers.

Add new standard to Chapter 35 as follows:

ASTM E2768- 2011 Standard Test Method for Extended Duration Surface Burning Characteristics of Building Materials (30 min Tunnel Test)

Reason: ASTM has now issued a test method, ASTM E2768, which contains the three requirements discussed in section 2303.2, namely that a product be tested in accordance with ASTM E84 or UL 723, and exhibit a flame spread index of 25 or less, show no evidence of significant progressive combustion when the test is continued for 30 minutes (i.e. an additional 20-minute period over the standard ASTM E84 duration of 10 minutes) and that the flame front not progress more than 101/2 feet (3200 mm) beyond the centerline of the burners at any time during the test.

The existing definition of "fire-retardant treated wood" in chapter 2 is inconsistent with the requirements within section 2303.2 in two respects: (a) it can be met by a material that has minimal amount of fire retardant treatment and (b) it requires the fire retardant treatment to be incorporated by a "pressure treatment" and not, as in 2303.2, by a "pressure process or other means during manufacture". During the 2012 ICC code development process this issue was discussed, in proposal S201 (to the IBC and IRC) and associated comments, and the requirements in 2303.2 were upheld. The definition of fire-retardant treated wood needs to be a stand alone definition that contains the requirements and that is consistent with 2303.2.

Moreover, the addition of the requirement that fire-retardant treated wood must be a "homogeneous" product is necessary to ensure that products that are coated or only partially impregnated with chemicals are not considered "fire-retardant treated wood" as they are not.

Changes in the definition of fire-retardant treated wood need to be made even if no changes are made to section 2303.2, as I recommend in an alternate proposal, because of the inconsistency between the requirements in the definition and those in section 2303.2.

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E2768-2011 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2012.

G25-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-FIRE RETARDANT TREATED WOOD (NEW)-G-HIRSCHLER.doc

G26 – 12 202

Proponent: Dennis Pitts, American Wood Council (dpits@awc.org)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Revise as follows:

TREATED WOOD. ~~Wood and wood-based materials products that use vacuum-pressure impregnation processes are conditioned~~ to enhance fire retardant or preservative properties.

Fire-retardant-treated wood. ~~Pressure-treated lumber and plywood~~ Wood products that, when impregnated with chemicals by a pressure process or other means during manufacture, exhibit reduced surface-burning characteristics and resist propagation of fire.

Preservative-treated wood. ~~Pressure-treated wood~~ Wood products that , conditioned with chemicals by a pressure process or other means that exhibit reduced susceptibility to damage by fungi, insects or marine borers.

Reason: Pressure-treatment is not the only method permitted by the code for treated wood. Fire retardant treated wood (FRTW) can be impregnated with chemicals by pressure treatment or “other means during manufacture” (see Section 2303.2 and 2303.2.2). Preservative treated wood can be pressure treated or treated by a number of other methods indicated in the AWPA standards referenced in Section 2303.1.8. The current definition assumes pressure-treatment and therefore conflicts with the requirements in the text for both FRTW and preservative-treated wood.

Cost Impact: The code change proposal will not increase the cost of construction. No increase in cost.

G26-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-FIRE RETARDANT TREATED WOOD-G-PITTS

G27 – 12

303.1.4, 305.1.1 (IFC [B] 202)

Proponent: Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee

Revise as follows:

303.1.4 Accessory to places of religious worship. Accessory religious educational rooms and religious auditoriums with *occupant loads* of less than 100 per room or space are not considered separate occupancies.

305.1.1 Accessory to places of religious worship. Religious educational rooms and religious auditoriums, which are accessory to *places of religious worship* in accordance with Section 303.1.4 and have *occupant loads* of less than 100 per room or space, shall be classified as Group A-3 occupancies.

Reason: This proposal is intended to clarify the application of Sections 303.1.4 and 305.1.1. As currently written it is not clear if the occupant load is intended to be all inclusive, or per room or space. When it is recognized that the language includes “auditoriums” as one of the spaces to consider, an accumulative occupant load would not provide the intended benefit of the language.

The proposed language clarifies that the occupant load of 100 is per room or space, a reasonable number when considering religious educational rooms and auditoriums.

This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

Cost Impact: This proposal will lower the cost of construction by clarifying the intent and application of the language.

G27-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

303.1.4-G-BAJNAI-BCAC

G28 – 12

304.1 (IFC [B] 202)

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering (al.godwin@aon.com)

Revise as follows:

304.1 Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

- Airport traffic control towers
- Ambulatory care facilities*
- Animal hospitals, kennels and pounds
- Banks
- Barber and beauty shops
- Car wash
- Civic administration
- Clinic, outpatient*
- Dry cleaning and laundries: pick-up and delivery stations and self-service
- Educational occupancies for students above the 12th grade
- Electronic data processing
- Food processing establishments and commercial kitchens with an occupant load less than 25 and not associated with restaurants, cafeterias and similar dining facilities.
- Laboratories: testing and research
- Motor vehicle showrooms
- Post offices
- Print shops
- Professional services (architects, attorneys, dentists, physicians, engineers, etc.)
- Radio and television stations
- Telephone exchanges
- Training and skill development not within a school or academic program

Reason: It is not uncommon to have catering services, bakeries, takeout pizza, and other food prep establishments in retail strip centers. Calling such uses an F-1 actually invokes change of use provisions that are not necessary. To avoid this, many jurisdictions will just call them "retail sales". However, they actually are more closely related to a small café and should be considered as such. Or, they should be listed under Group M.

With 200 sq. ft. per person occupant load calculation, 25 occupants equates to 5,000 sq. ft.

Cost Impact: This code change proposal will not increase the cost of construction but could reduce the cost of unnecessary change of use.

G28-12

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

304.1-G-GODWIN

G29 – 12

304.1 (IFC [B] 202)

Proponent: Lee J. Kranz, City of Bellevue, WA, representing Washington Association of Building Officials Technical Code Development (lkranz@bellevuewa.gov)

Revise as follows:

304.1 Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

- Airport traffic control towers
- Ambulatory health care facilities
- Animal hospitals, kennels and pounds
- Banks
- Barber and beauty shops
- Car wash
- Civic administration
- Clinic-outpatient
- Dry cleaning and laundries: pick-up and delivery stations and self-service
- Educational occupancies for students above the 12th grade
- Electronic data processing
- Laboratories: testing and research
- Motor vehicle showrooms
- Post offices
- Print shops
- Professional services (architect, attorneys, dentists, physicians, engineers, etc)
- Radio and television stations
- Telephone exchanges
- Training, educational tutoring and skill development not within a school or academic program.

Reason: This code change is intended to clarify that educational tutoring centers, such as those typically found in strip malls or office buildings, are considered to be classified as Group "B" occupancies. The term "educational tutoring" is descriptive of the type of use associated with training and skill development outside of a full time K-12 school and are used by students after normal mid-day school hours. It also more specifically and accurately describes the type of moderate occupant load commercial space used to provide focused learning opportunities for individual students.

"Academic program" has been deleted because it broadly describes many different learning situations or teaching methods which would otherwise be considered part of a conventional school environment and has caused many building officials to erroneously classify these uses as Group "E" occupancies.

Many building officials are classifying businesses like Sylvan, Huntington and Kumon Learning Centers as Group "E" occupancies which places the building in a higher risk occupancy category than is necessary to protect the occupants. The student-to-teacher ratio in educational tutoring centers is typically very low and the overall occupant load is moderately low which creates a safer environment similar to a group "B" occupancy.

Cost impact: The code change proposal will increase the cost of construction.

G29-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

304.1-G-KRANZ

G30 – 12

304.1 (IFC [B] 202)

Proponent: Adria Paesani, Fountain Valley Fire Department (adria.paesani@fountainvalley.org); Robert Marshall, Contra Costa Fire Department representing CalChiefs

Revise as follows:

304.1 Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

- Airport traffic control towers
- Ambulatory health care facilities serving five or fewer patients (see Section 308.3.2 for facilities serving more than five patients)
- Animal hospitals, kennels and pounds
- Banks
- Barber and beauty shops
- Car wash
- Civic administration
- Clinic – outpatient
- Dry cleaning and laundries: pick-up and delivery stations and self-service
- Educational occupancies for students above the 12th grade
- Electronic data processing
- Laboratories: testing, research
- Motor vehicle showrooms
- Post offices
- Print shops
- Professional services (architects, attorneys, dentists, physicians, engineers, etc)
- Radio and television stations
- Telephone exchanges
- Training and skill development not within a school or academic program (this shall include, but not be limited to, tutoring centers, martial arts studios, gymnastics, and similar uses regardless of the ages served, and where not classified as a Group A occupancy)

Reason: The 2012 International Building Code defines a Group E occupancy as *the use of a building or structure, or a portion thereof, by six or more persons at any one time for educational purposes through the 12th grade*. There are a variety of local interpretations on whether a tutoring center falls into a Group B or Group E classification. This code proposal is intended to classify tutoring centers and similar transient occupancies that cater to children as Group B occupancies per section 304.1. Enforcing Group E regulations greatly increases the cost to tutoring centers, in particular, as other similar uses clearly do not fall into the academic provisions of the Group E occupancies, i.e. martial arts, gymnastics, etc. The majority of tutoring centers are placed in multi-unit, Type V structures. Placing a Group E occupancy in a Type V building requires either a one-hour or two-hour wall between adjoining occupancies depending on fire sprinkler coverage. In addition, a manual fire alarm system is required in all Group E occupancies having an occupant load of more than 30, unless provided with fire sprinklers.

Cost Impact: The code change proposal will not increase the cost of construction

G30-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

304.1-G-PAESANI

G31 – 12

PART I – INTERNATIONAL BUILDING CODE

202, 308.3, 308.3.1, 308.3.2, 308.4.1, 310.6, 310.6.1 (NEW), 310.6.2 (NEW), 420, 420.1, 420.4 (NEW), 420.4.1 (NEW), 504.2, 709.5, 1018.1; (IFC [B] 202, 1018.1)

PART II – INTERNATIONAL FIRE CODE

IFC 903.2.6, 903.2.8.1, 903.2.8.2, 903.2.8.3 (NEW), 903.2.8.3.1 (NEW), 903.2.8.3.2 (NEW), 903.3.1.3, 907.2.6.1; (IBC [F] 420.5, 903.2.6, 903.2.8.1, 903.2.8.2, 903.2.8.3 (NEW), 903.2.8.3.1 (NEW), 903.2.8.3.2 (NEW), 903.3.1.3, 907.2.6.1)

Proponent: Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee

THIS IS A 2 PART CODE CHANGES. BOTH PARTS WILL BE HEARD BY HEARD BY THE IBC GENERAL CODE COMMITTEE AS 2 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THE IBC GENERAL COMMITTEE.

PART I – INTERNATIONAL BUILDING CODE

Revise as follows:

SECTION 202 DEFINITIONS

24-HOUR CARE BASIS. The actual time that a person is an occupant within a facility for the purpose of receiving care. It shall not include a facility that is open for 24 hours and is capable of providing care to someone visiting the facility during any segment of the 24 hours.

CUSTODIAL CARE. Assistance with day-to-day living tasks; such as assistance with cooking, taking medication, bathing, using toilet facilities and other tasks of daily living. Custodial care ~~include~~ includes occupants ~~who~~ that have the ability to respond to emergency situations and evacuate at a slower rate and/or who have mental and psychiatric complications.

GROUP HOME. A facility for social rehabilitation, substance abuse or mental health problems that contains a group housing arrangement that provides *custodial care* but does not provide ~~acute~~ medical care.

SECTION 308 INSTITUTIONAL GROUP I

308.3 Institutional Group I-1. This occupancy shall include buildings, structures or portions thereof for more than 16 persons, excluding staff, who reside on a 24 hour basis in a supervised environment and receive *custodial care*. ~~The persons receiving care are capable of self preservation.~~ Buildings of Group I-1 shall be classified as one of the occupancy conditions indicated in Sections 308.3.1 or 308.3.2. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- Convalescent facilities
- Group homes*
- Halfway houses
- Residential board and ~~custodial~~ *care* facilities
- Social rehabilitation facilities

308.3.1 Condition 1. This occupancy condition shall include buildings in which all persons receiving custodial care who, without any assistance, are capable of responding to an emergency situation to complete building evacuation.

308.3.2 Condition 2. This occupancy condition shall include buildings in which there are any persons receiving custodial care who require limited verbal or physical assistance while responding to an emergency situation to complete building evacuation.

~~308.3.2~~ **308.3.3 Six to sixteen persons receiving custodial care.** A facility ~~such as above,~~ housing not fewer than six and not more than 16 persons receiving such custodial care, shall be classified as Group R-4.

~~308.3.4~~ **308.3.4 Five or fewer persons receiving custodial care.** A facility ~~such as the above~~ with five or fewer persons receiving such custodial care shall be classified as Group R-3 or shall comply with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *International Residential Code*.

308.4 Institutional Group I-2. This occupancy shall include buildings and structures used for *medical care* on a 24-hour basis for more than five persons who are *incapable of selfpreservation*. This group shall include, but not be limited to, the following:

Foster care facilities
Detoxification facilities
Hospitals
Nursing homes
Psychiatric hospitals

308.4.1 Five or fewer persons receiving medical care. A facility ~~such as the above~~ with five or fewer persons receiving such medical care shall be classified as Group R-3 or shall comply with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *International Residential Code*.

SECTION 310 RESIDENTIAL GROUP R

310.6 Residential Group R-4. This occupancy shall include buildings, structures or portions thereof for more than five but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive *custodial care*. ~~The persons receiving care are capable of self-preservation.~~ Buildings of Group R-4 shall be classified as one of the occupancy conditions indicated in Sections 310.6.1 or 310.6.2 This group shall include, but not be limited to, the following:

Alcohol and drug centers
Assisted living facilities
Congregate care facilities
Convalescent facilities
Group homes
Halfway houses
Residential board and ~~custodial~~ care facilities
Social rehabilitation facilities

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code.

310.6.1 Condition 1. This occupancy condition shall include buildings in which all persons receiving custodial care, who without any assistance, are capable of responding to an emergency situation to complete building evacuation.

310.6.2 Condition 2. This occupancy condition shall include buildings in which there are any persons receiving custodial care who require limited verbal or physical assistance while responding to an emergency situation to complete building evacuation.

SECTION 420 GROUPS I-1, R-1, R-2, R-3, R-4

420.1 General. Occupancies in Groups I-1, R-1, R-2 and R-3 and R-4 shall comply with the provisions of Sections 420.1 through ~~420.5~~ 420.6 and other applicable provisions of this code.

420.4 Smoke barriers in Group I-1 Condition 2. Smoke barriers shall be provided in Group I-1 Condition 2 to subdivide every story used by persons receiving care, treatment or sleeping and to provide other stories with an occupant load of 50 or more persons, into no fewer than two smoke compartments. Such stories shall be divided into smoke compartments with an area of not more than 22,500 square feet (2092 m²) and the travel distance from any point in a smoke compartment to a smoke barrier door shall not exceed 200 feet (60 960 mm). The smoke barrier shall be in accordance with Section 709.

420.4.1 Refuge area. Refuge areas shall be provided within each smoke compartment. The size of the refuge area shall accommodate the occupants and care recipients from the adjoining smoke compartment. Where a smoke compartment is adjoined by two or more smoke compartments, the minimum area of the refuge area shall accommodate the largest occupant load of the adjoining compartments. The size of the refuge area shall provide the following:

1. Not less than 15 net square feet (1.4 m²) for each care recipient.
2. Not less than 6 net square feet (0.56 m²) for other occupants.

Areas or spaces permitted to be included in the calculation of the refuge area are corridors, lounge or dining areas and other low hazard areas.

[F] 420.4 420.5 Automatic sprinkler system. *(No change)*

[F] 420.5 420.6 Smoke detection and fire alarm system. *(see Part II)*

SECTION 504 BUILDING HEIGHT

504.2 Automatic sprinkler system increase. Where a building is equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one. These increases are permitted in addition to the *building area* increase in accordance with Sections 506.2 and 506.3. For Group R buildings equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.2, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one, but shall not exceed 60 feet (18 288 mm) or four *stories*, respectively.

Exception: The use of an *automatic sprinkler system* to increase *building heights* shall not be permitted for the following conditions:

1. Buildings, or portions of buildings, classified as a Group I-1 Condition 2, of Type IIB, III, IV or V construction or Group I-2 occupancy occupancies of Type IIB, III, IV or V construction.
2. Buildings, or portions of buildings, classified as a Group H-1, H-2, H-3 or H-5 occupancy.
3. Buildings where an *automatic sprinkler system* is substituted for fire-resistance rated construction in accordance with Table 601, Note d.

SECTION 709 SMOKE BARRIERS

709.5 Openings. Openings in a *smoke barrier* shall be protected in accordance with Section 716.

Exceptions:

1. In Group I-1 Condition 2, Group I-2 and ambulatory care facilities, where doors are installed across *corridors*, a pair of opposite- swinging doors without a center mullion shall be installed having vision panels with fire-protection- rated glazing materials in fire-protection-rated frames, the area of which shall not exceed that tested. The doors shall be close fitting within operational tolerances, and shall not have undercuts in excess of 3/4-inch, louvers or grilles. The doors shall have head and jamb stops, astragals or rabbets at meeting edges and shall be automatic-closing by smoke detection in accordance with Section 716.5.9.3. Where permitted by the door manufacturer's listing, positive-latching devices are not required.
2. In Group I-1 Condition 2, Group I-2 and ambulatory care facilities, horizontal sliding doors installed in accordance with Section 1008.1.4.3 and protected in accordance with Section 716.

SECTION 1018 (IFC [B] 1018) CORRIDORS

1018.1 (IFC [B] 1018.1) Construction. *Corridors* shall be fire-resistance rated in accordance with Table 1018.1. The *corridor walls* required to be fire-resistance rated shall comply with Section 708 for *fire partitions*.

Exceptions:

1. A *fire-resistance rating* is not required for *corridors* in an occupancy in Group E where each room that is used for instruction has at least one door opening directly to the exterior and rooms for assembly purposes have at least one-half of the required *means of egress* doors opening directly to the exterior. Exterior doors specified in this exception are required to be at ground level.
2. A *fire-resistance rating* is not required for *corridors* contained within a dwelling or sleeping unit in an occupancy in Group I-1 and Group R.
3. A *fire-resistance rating* is not required for *corridors* in *open parking garages*.
4. A *fire-resistance rating* is not required for *corridors* in an occupancy in Group B which is a space requiring only a single *means of egress* complying with Section 1015.1.
5. *Corridors* adjacent to the *exterior walls* of buildings shall be permitted to have unprotected openings on unrated *exterior walls* where unrated walls are permitted by Table 602 and unprotected openings are permitted by Table 705.8.

PART II – INTERNATIONAL FIRE CODE

Revise as follows:

IBC [F] ~~420.5~~ 420.6 Smoke detection and fire alarm systems and smoke alarms. Fire alarm systems and smoke alarms shall be provided in Group I-1, R-1, ~~and~~ R-2 ~~and~~ Group R-4 occupancies in accordance with Sections 907.2.6, 907.2.8, ~~and~~ 907.2.9 ~~and~~ 907.2.10, respectively. Single-or multiple-station smoke alarms shall be provided in Groups I-1, R-2, R-3 and R-4 in accordance with Section 907.2.11.

SECTION 903 (IBC [F] 903) AUTOMATIC SPRINKLER SYSTEMS

903.2.6 (IBC [F] 903.2.6) Group I. An automatic sprinkler system shall be provided throughout buildings with a Group I fire area.

Exceptions:

1. An automatic sprinkler system installed in accordance with Section 903.3.1.2 shall be permitted in Group I-1 Condition 1 facilities.
2. ~~An automatic sprinkler system installed in accordance with Section 903.3.1.3 shall be allowed in Group I-1 facilities when in compliance with all of the following:~~
 - 2.1. ~~A hydraulic design information sign is located on the system riser~~
 - 2.2. ~~Exception 1 of Section 903.4 is not applied, and~~
 - 2.3. ~~Systems shall be maintained in accordance with the requirements of Section 903.3.1.2.~~
3. ~~An automatic sprinkler system is not required where Group I-4 day care facilities are at the level of exit discharge and where every room where care is provided has at least one exterior exit door.~~
4. In buildings where Group I-4 day care is provided on levels other than the level of exit discharge, an automatic sprinkler system in accordance with 903.3.1.1 shall be installed on the entire floor where care is provided and all floors between the level of care and the level of exit discharge, all floors below the level of exit discharge, other than areas classified as an open parking garage.

903.2.8 (IBC [F] 903.2.8) Group R. An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.

903.2.8.1 (IBC [F] 903.2.8.1) Group R-3 or R-4 congregate residence. An automatic sprinkler system installed in accordance with 903.3.1.3 shall be permitted in Group R-3. ~~or R-4 congregate residence with 16 or fewer residents.~~

903.2.8.2 (IBC [F] 903.2.8.2) Group R-4 Condition 1. An automatic sprinkler system installed in accordance with 903.3.1.3 shall be permitted in Group R-4 Condition 1.

903.2.8.3 (IBC [F] 903.2.8.3) Group R-4 Condition 2. An automatic sprinkler system installed in accordance with 903.3.1.2 shall be permitted in Group R-4 Condition 2. Attics shall be protected in accordance with Sections 903.2.8.3.1 or 903.2.8.3.2.

903.2.8.3.1 (IBC [F] 903.2.8.3.1) Attics used for living purposes, storage or fuel fired equipment. Attics used for living purposes, storage or fuel fired equipment shall be protected throughout with automatic sprinkler system installed in accordance with 903.3.1.2.

903.2.8.3.2 (IBC [F] 903.2.8.3.2) Attics not used for living purposes, storage or fuel fired equipment . Attics not used for living purposes, storage or fuel fired equipment shall be protected in accordance with one of the following:

1. Attics protected throughout by a heat detector system arranged to activate the building fire alarm system in accordance with Section 907.2.10.
2. Attics constructed of non-combustible materials.
3. Attics constructed of fire-retardant-treated wood framing complying with Section 2303.2.
4. The automatic fire sprinkler system shall be extended to provide protection throughout the attic space.

903.2.8.2 903.2.8.4 (IBC [F] 903.2.8.2 903.2.8.4) Care facilities. An automatic sprinkler system installed in accordance with 903.3.1.3 shall be permitted in care facilities with 5 or fewer individuals in a single family dwelling.

903.3.1.3 (IBC [F] 903.3.1.3) NFPA 13D sprinkler systems. Automatic sprinkler systems installed in one and two-family dwellings, Group R-3, and R-4 ~~congregate residences~~ Condition 1 and townhouses shall be permitted to be installed throughout in accordance with NFPA 13D.

SECTION 907 (IBC [F] 907) FIRE ALARM AND DETECTION SYSTEMS

907.2.6.1 (IBC [F] 907.2.6.1) Group I-1. In Group I-1 occupancies, an automatic smoke detection system shall be installed in corridors, waiting areas open to corridors and habitable spaces other than sleeping units and kitchens. The system shall be activated in accordance with Section 907.5.

Exceptions:

1. For Group I-1 Condition 1 smoke ~~Smoke~~ detection in habitable spaces is not required where the facility is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
2. Smoke detection is not required for exterior balconies.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

GENERAL PURPOSE

The current IBC requires all occupants receiving Custodial Care to be able to evacuate on their own without any assistance from others. Most state Custodial Care (assisted living/ residential care/ group homes) licensing agencies allow occupants who require limited assistance with evacuation.¹ The lack of consistency between what the states allow and the IBC Custodial Care provisions causes inconsistent application of the IBC.² This proposal resolves that conflict and will result in better consistency. The proposal integrates allowing both residents who require limited assistance with evacuation and those that do not in Custodial Care occupancies. It accomplishes this while maintaining current residential occupancy safeguards along with adding appropriate Group I-2 safeguards, for those requiring assistance with evacuation.

The proposed Group I-1 and R-4 custodial care revisions accomplish the following:

- It provides "condition classifications" for both Groups I-1 and R-4. It makes Condition 1 for the buildings, as currently allowed, with residents capable of responding on their own during emergencies. It adds a Condition 2 for buildings residents who may require some assistance with evacuation.
- The added "condition" classification is already utilized in Group I-3 and is also proposed to be included in Group I-2, under a separate proposal by the ICC Ad Hoc Committee on Healthcare.
- It adds to the new Group I-1 Condition 2, four more stringent requirements due to the new resident type allowed, in addition to the existing current Group I-1 Condition 1 requirements: story limitations, smoke barriers, increased sprinkler protection, and additional smoke detection.
- It adds to the new Group R-4 Condition 2, due to the new resident type allowed, two more stringent requirements in addition to the capable Group R-4 Condition 1 requirements: story limitations, and additional attic detection or protection, considering the smaller facilities.
- It clarifies in the revised Custodial Care definition and in Group I-1 and R-4 Condition 2 occupancies that they are not Group I-2, which provides Medical Care. Group I-1 Custodial Care has persons with some physical or mental limitations, who may require limited assistance in emergency evacuation, but who are still capable enough to participate in complete building evacuation during emergencies. This limit of the level of care or resident type in Group I-1 and R-4 does not include Group I-2 higher acuity occupants who require full nursing care or Medical Care as defined. Those receiving Medical Care in Group I-2 may be bedridden during emergencies, may be on life support systems, or may be semiconscious or unconscious, all in which evacuation concepts allows for defend in place strategies.
- It leaves the other current IBC base I-1/ R-4 requirements, and the capable Group I-1 and R-4 Condition 1 requirements unchanged from the current code, except for minor clerical revisions.
- The substantiation for both the IBC and correlating IFC changes relating to this Group I-1/R4 proposal are integrated below in IBC section order, to provide a comprehensive correlation of both sets of changes for both codes.

GENERAL REASONS AND SUBSTANTIATION

The new Group I-1 Condition 2 requirements add appropriate Group I-2 protection features. It also maintains more restrictive Group I-1 residential protection features than current Group I-2 requirements. Other differences between Group I-1 and Group I-2 are also maintained. The numerous differences between Group I-1/ R-4 Custodial Care and Group I-2 Medical Care occupancies in relation to resident types, care levels, and functional facility design concepts relating to protection noted below, substantiate why it is appropriate to regulate them differently in separate occupancy groups.

- **Group I-1 Condition 2 & Group I-2 similarity:** Group I-1 Condition 2 adds NFPA 13 full sprinkler coverage system requirements, like Group I-2 Medical Care.
- **Group I-1 Condition 2 & Group I-2 similarity & difference:** Group I-1 Condition 2 adds smoke barriers like Group I-2 medical care occupancies. Smoke barriers provide temporary protection for custodial care residents that require assistance from others in an emergency. These Group I-1 facilities still eventually complete building evacuation and residents still participate in fire drills as in the current IFC, versus the “defend in place” and non fire drill participation in Group I-2 Medical Care facilities. The proponent is also proposing minor Group I-1 Condition 2 changes in the IFC, still requiring fire drill participation, and full evacuation, while utilizing smoke compartments to allow for staged building evacuation.
- **Group I-1 Condition 2 & Group I-2 differences:** Group I-1 Condition 2 still has appropriate corridor protections, dwelling and sleeping unit separation, smoke detection, and unit smoke alarms, which Group I-2 Medical Care does not require. This is due to small apartments generally occurring in Custodial Care that may have some domestic cooking appliances, while Group I-2 Medical Care has sleeping rooms where cooking is prohibited in the rooms. It is also due to resident to staff ratios that are generally less in Custodial Care than Group I-2 Medical Care during night time.
- **Group I-1/R-4 Condition 2 & Group I-2 difference:** Group I-1 and R-4 Condition 2 occupancies through state licensing agencies, do not allow residents that must remain in bed during emergency evacuation, so Group I-2 increased means of egress width requirements in Chapter 10 for bed movement are not applied.
- **Group I-1/R-4 Condition 2 & Group I-2 differences:** Other differences between traditional Group I-2 occupancies and new Group I-1 and R-4 Condition 2 occupancies are maintained due to differences between the types of care provided (Medical Care versus Custodial Care), and other characteristics of the two occupancy groups. One example is that Medical Care may have semiconscious or unconscious persons who are totally dependent on others for their safety during emergencies. Custodial Care has persons who are conscious but may not be as functional or responsive to emergencies as compared to the general population. These persons still have sufficient functional ability to participate in evacuation with or without assistance. This aspect of the revised Group I-1 is also consistent with all state assisted living regulations.

These Custodial Care occupancies are also often controlled by individual state licensing agency requirements, which can vary greatly between different states by use, name, and occupant capabilities². This proposal concept clarifies that irrelevant of state licensing regulations, the determining factors for IBC occupancy classification and related safeguards are based on three aspects characterizing the care occupancies:

- **The type of IBC defined care that is provided (Medical or Custodial).** The care level limits Group I-1 to provide Custodial Care and does not allow the higher resident acuity levels allowed in nursing facilities or hospitals (Medical Care).
- **The type of evacuation process and evacuation capability that is allowed in Custodial Care versus Medical Care.** It limits Custodial Care to residents that may require limited assistance in evacuation but who are capable of actively participating in complete building evacuation versus the defend in place concept for Medical Care
- **That they receive care on a 24 hour basis as defined.**

Finally, these concepts proposed herein are already being applied by a majority of the state licensing agencies for custodial care uses, especially in the largest use assisted living/ residential care. State licensing agencies also do control their types of licensed care. All states have nursing licensure and create a line in the sand differentiating nursing licensure from their custodial care licensures. The IBC specifically lists the two uses (nursing and custodial care uses) in separate occupancies, so these proposed changes will not allow for nursing to be in the new Group I-1 Condition 2 occupancy.

ITEMIZED IBC/ IFC SECTION SUBSTANTIATION/ REASONS

The relating substantiation for both the IBC and IFC proposed code changes includes all of the substantiation, in IBC section order, to provide a comprehensive correlation of both sets of changes for both codes.

Section 202 - 24 Hour Basis. The term “24 Hour Basis” revises the old “24 Hour Care” term to reflect the actual term words used throughout the code.

Section 202 - Group Home. The Group Home definition is revised to reflect current defined term of “medical care.”

Section 202 - Custodial Care. The revision to the custodial care definition clarifies the difference between custodial care and medical care. Medical care allows for defend in place as is proposed by the ICC Ad Hoc Committee on Healthcare. The revised text clarifies that custodial care includes persons that can still respond to emergencies at a slower rate than the general population for complete building evacuation, due to mental, psychiatric or physical complications.

Section 308.3 Group I-1 is revised to allow persons who can respond to an emergency situation with or without assistance from others. Assisted living is the largest use group of the custodial care uses with over 32,000 facilities. Currently nearly all state licensing agencies allow a majority of their assisted living classifications to have residents that may require limited assistance from others during emergency evacuation. There are also numerous other uses in Group I-1 that have all persons that can evacuation on their own with assistance from others. The “Condition” concept is utilized from the Group I-3 detention occupancy to differentiate Group I-1 occupancies between needing assistance and not needing assistance in evacuation. The “condition” classification is also proposed to be included in Group I-2, under a separate proposal by the ICC Ad Hoc Committee on Healthcare.

The revised section implements language from the existing correlating section in Group I-3, stating that a building shall also be classified with one of the conditions. This clarifies that Group I-1 buildings shall classified on their building permit application and occupancy permit with either a “Group I-1 Condition 1” or “Group I-1 Condition 2” occupancy classification. Most assisted living facilities should be classified as Group I-1 Condition 2 unless the permit application drawings quote licensing regulations limiting the resident type to Condition 1.

The proposed custodial care Condition 2 occupancies include those who may need limited assistance in evacuation. The key aspect of the wording is to differentiate Group I-1 from Group I-2. Group I-1 is limited to custodial care and Group I-2 is for medical care. The intent of using the words “limited verbal or physical assistance” in Group I-1/R-4 Condition 2 is to clarify the difference of capability levels of emergency evacuation between custodial and medical care. Group I-1 Custodial care is limited to those persons

needing limited assistance in evacuation but who can still participate in emergency evacuation response and who can still evacuate with or without assistance. Custodial care evacuation assistance is limited versus medical care which includes those who cannot get out of bed during emergencies, or someone completely incapable of helping themselves by being unconscious or semiconscious, or on life support systems.

Many assisted living, residential care, and some group home facilities have some residents that may fall under the following limited assistance with evacuation condition as paraphrased from the NFPA 101A Guide on Alternative Approaches to Life Safety. This guide has been utilized by many states licensing agencies, starting since the early 1990's, to determine the relative emergency evacuation capability of residents of custodial care types of residents, with or without assistance from others. It is used here to show the relative nuances of evacuation assistance that will be included in custodial care in the IBC. The concepts are similar as proposed herein, that the occupants still actively participate in fire drills and are trained to complete building evacuation during emergencies, with or without assistance from others:

- A person who has mild to more resistance or confusion to respond to an alarm, or needing someone to help them with instructions as found with persons with dementia or persons with Alzheimer's.
- A person needing extra intermediate or continuous help during their emergency evacuation.
- A person who has some physical impairment needing physical assistance to help them evacuate.
- A person who needs some assistance getting out of bed or is considered not self starting, but can continue with or without assistance in building evacuation.
- A person with seconds or even a few minutes of impaired consciousness intermittently a few times over a few months due to medications or illness.
- A person requiring minor or constant supervision or attention to help them receive, comprehend, and follow through instructions during emergencies.
- A person who is on medications, or even exceptionally sound sleepers, making them have some chance of not having a waking response to an alarm.
- All persons still have the capability level to participate in emergency evacuation with or without assistance from others.

308.4 Group I-2 is revised with the clerical change clarifying that Group I-2 provides medical care as defined.

Section 310.6 Group R-4 is revised like the Group I-1 to allow persons who can respond to an emergency situation with or without assistance from others for the same reasons cited in the Section 308.3 Group I-1 Reason section.

Section 420.1 Group R-4 is added to the scoping language clarifying that Group R-4 shall conform to Section 420 requirements. The 2012 IBC did not list R-4 in this section even though it was implied that it also had to comply with section 420, because Group R-4 also had to comply with Group R-3 requirements.

Section 420.4 Smoke barriers are added as a requirement in the Group I-1 Condition 2. Smoke barriers are added due to new proposed resident type allowed and to create similar requirements as Group I-2. Compartmentalization is a key aspect of occupancies with occupants who may need assistance with evacuation. There are also state licensing regulations in a majority of states requiring smoke barriers in their assisted living facilities. The smoke barrier sections utilize and match technical requirements, language and format from the current I-2 Section 407 for smoke barriers. The smoke compartment area matches the current area limit.

Section 420.4.1 Matches the format and requirements of the smoke barrier requirements from Section 407. The 15 square feet refuge area is smaller than the Group I-2 refuge area requirements due to no bedridden residents being allowed in custodial care uses by all state regulatory agencies. The 15 square feet matches over the one third of states that have similar state assisted living refuge areas in their licensing life safety regulations compared to this custodial care proposal.

The "sleeping rooms" are also removed as a refuge area space as compared to Group I-2. This is appropriate because custodial care often includes apartments or sleeping rooms that have domestic cooking facilities with the associated room and corridor smoke and fire separation requirements included in Group I-1 and R. This is also another difference between custodial care and medical care.

(IFC) Section 420.5 and 420.6 The current Section "420.4 Automatic sprinkler system" is moved to Section 420.5 as a clerical change due to the new proposed added sections prior. The current Section "420.5 Smoke detection and fire alarm system" is moved to section 420.6 as a clerical change due to the new proposed added sections prior. There are proposed clerical changes to the new section 420.6 that add all of the actual occupancies cross-referenced in the sections referenced in the section.

Section 504.2 requires that the new Group I-1 and R-4 Condition 2 not be allowed to use sprinklers for story increases in Type IIB, III, IV, or V construction, matching the current exception for Group I-2. The limitation is proposed due to the new resident type. It is also because about 30 states licensing agencies already limit their custodial care facilities with residents needing assistance with evacuation to less than the four stories that are currently allowed in Group I-1 in the combustible construction types.

This proposal also essentially matches Oregon's State building code, based on the IBC but with amendments in Groups I-1 and R-4. Oregon's state building code has utilized the specific concepts proposed here in this proposal since 1991. It has the longest history of implementing hybrid Group I and R occupancy requirements by allowing residents needing assistance with evacuation in custodial care, with NFPA 13 sprinklers, smoke barriers, 3 story wood frame limits along with Group R corridor and apartment separation and protections. Oregon has had no multiple fire death fires in over 100 buildings using these concepts and requirements, and all fires were contained.

Section 709.5 includes adding cross corridor doors in the new required smoke barriers in Group I-1 Condition 2, matching the same exceptions allowed for I-2. Adding compartmentalization is a key provision in dealing with occupants that move as individuals or as a group at slower pace, with or without assistance, than the general population during emergency evacuation.

(IFC) Section 903.2.6 requires full NFPA 13 sprinkler coverage in the Group I-1 Condition 2 facility fire areas. The NFPA 13 requirement is added due to the new proposed resident type allowed. Full sprinkler coverage provided by a NFPA 13 system is a key aspect of larger occupancies with residents needing some assistance with evacuation. Currently over half the states licensing agencies already require NFPA 13 sprinklers in their large assisted living facilities with residents needing assistance with evacuation. The exception is revised to allow NFPA 13R in other Group I-1 Condition 1 facilities, maintaining the current exception

for the current capable Group I-1 uses.

The exception number 2 is deleted since a NFPA 13D system for single family residential or other small facilities was never intended to be allowed in and Group I-1 facility serving more than 16 residents, irrelevant of whether they require assistance with evacuation.

(IFC) Section 903.2.8.1 is revised to separate the Group R-3 and Group R-4 provisions.

(IFC) Section 903.2.8.2 is added as a clerical revision maintaining the current requirement of sprinklers in accordance with Section 903.3.1.3 in capable Group R-4 which is the new Group R-4 Condition 1.

(IFC) Section 903.2.8.3 is revised to allow for the new R-4 Condition 2 occupancy. The R-4 Condition 2 occupancy would have both an NFPA13R sprinkler system required as well as added attic protection. In attics not used for living purposes, storage or fuel fired equipment, there are four options offered. Either the smoke detection system will provide early warning of an attic fire, or the chance of a fire in the attic is reduced by construction or sprinklers. Automatic sprinklers in the unheated attic space would have a freezing issue in group homes in northern climates, so additional options are necessary.

(IFC) Section 903.3.1.3 Automatic sprinkler system requirement is revised to reflect the proposed changes to the Group R-4 occupancy.

(IFC) Section 907.2.6.1 is revised to eliminate the smoke detection exception only in buildings housing Group I-1 Condition 2 occupancies. This proposal still allows the exception to be applied to other buildings with Group I-1 Condition 1 as defined by fire walls or exterior walls.

Section 1018.1 Corridor Construction is revised to allow halls within dwelling units in Group I-1 be non-rated just like R occupancies as a missed oversight from previous editions of the code.

Footnotes

1. The substantiation of residents needing some assistance with evacuation occurring in assisted living and other custodial care uses was cited in the original G21 proposal for IBC changes during the 2009/10 code change cycle. It substantiated findings from a national analysis on assisted living performed for the State of Hawaii in 2007 titled "Assisted Living Analysis of All State Regulations Relative to Building Codes and Life Safety Codes." It showed that virtually all states allow residents needing limited assistance with evacuation in at least one of their categories of assisted living/ residential care facilities and that about two-thirds of all categories allow this occupant type. The analysis confirmed that assisted living/ residential care facilities receive custodial care (older IBC term personal care) and not medical care, and also confirmed the division of size of facilities in Groups I-1 and R-4, so it is appropriately categorized in the IBC relative to care type and sizes. It substantiated that assisted living/ residential care is the largest and fastest growing use in Groups I-1 and R-4. The analysis also confirmed other various aspects of a custodial care program, uses, and protection features differentiating it from medical (health) care. It presented findings and conclusions that a combination of both Group I and R protection features for custodial care with residents needing some assistance with evacuation as is proposed here, is the consistent to what the largest number of various state licensing agencies have implemented in regulating life safety protection for this use by individual states. It showed that the concepts proposed herein are also consistent or similar to what at least three states have already incorporated into their statewide amendments for the IBC (California, Oregon, and Washington.)
2. Industry representatives confirmed in information provided to the CTC that custodial care and especially assisted living/ residential care IBC occupancy classification varies greatly across the country. Industry substantiated that it is mostly due to the IBC stating that only occupants who can evacuate on their own occur in IBC custodial care occupancies versus what actually occurs nationally. This conflict then causes some custodial care to be classified as a hybrid of Group I-1 and I-2 in states amending the IBC, some classified as Group I-2, some classified as general I-1 or I-2 hybrids in states enforcing other varying standards (NFPA 101), some individual projects applying alternative means creating a hybrid occupancy, and some miss-applying the capability standard. The industry representatives were associated with the American Health Care Association, Assisted Living Federation of America, and Leading Age as the three industry trade associations representing almost all assisted living/ residential care in the country.

Cost Impact: The proposed changes will not increase the cost of construction. Reduction

G31-12

PART I – INTERNATIONAL BUILDING CODE

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – INTERNATIONAL FIRE CODE

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

308-G-BALDASSARRA-CTC (2)

G32 – 12

PART I – INTERNATIONAL BUILDING CODE

202, 308.1, 308.4, 308.7 (NEW), 404.5, 425 (NEW), Table 503, 504.2, Table 509, 710.8, 712.1.8, 713.14.1, 717.5.5, Table 1016.2, Table 1018.1, Table 1018.2, 1018.4, 1107.5.3.1, 3304.8 (NEW), 3311.3 (NEW); (IFC [B] 202, Table 1016.2, Table 1018.1, Table 1018.2, 1018.4)

PART II – INTERNATIONAL FIRE CODE

IFC 903.2.6, 903.3.2, 907.2.6, 907.2.6.2, 907.2.6.4 (NEW), 909.4.6; (IBC [F] 425.5, 425.6, 425.7, 903.2.6, 903.3.2, 907.2.6, 907.2.6.2, 907.2.6.4 (NEW), 909.4.6)

Proponent: Jeff Bresette, FP&C Consultants, Inc.

THIS IS A 2 PART CODE CHANGES. BOTH PARTS WILL BE HEARD BY HEARD BY THE IBC GENERAL CODE COMMITTEE AS 2 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THE IBC GENERAL COMMITTEE.

Revise as follows:

SECTION 202 DEFINITIONS

CARE SUITE. In Group I-5 occupancies, a group of treatment rooms, care recipient sleeping rooms and the support rooms or spaces and circulation space within the suite where staff are in attendance for supervision of all care recipients within the suite, and the suite is in conformance with the requirements of Section 425.4.2.

CARE SUITE. Within Group I-2 occupancies, a group of treatment rooms, care recipient sleeping rooms and their associated support rooms or spaces and circulation space within Group I-2 occupancies where staff are in attendance for supervision of all care recipients within the suite, and the suite is in compliance with the requirements of Section 407.4.3.

DEFEND IN PLACE. A method of emergency response that engages building components and trained staff to provide occupant safety during an emergency. Emergency response involves remaining in place, relocating within the building, or both, without evacuating the building.

Revise as follows:

308.1 Institutional Group I. Institutional Group I occupancy includes, among others, the use of a building or structure, or a portion thereof, in which care or supervision is provided to persons who are or are not capable of self-preservation without physical assistance or in which persons are detained for penal or correctional purposes or in which the liberty of the occupants is restricted. Institutional occupancies shall be classified as Group I-1, I-2, I-3, ~~or I-4~~ or I-5.

308.4 Institutional Group I-2. This occupancy shall include buildings and structures used for ~~medical care~~ custodial care on a 24-hour basis for more than five persons who are *incapable of self-preservation*. This group shall include, but not be limited to, the following:

Foster care facilities
Detoxification facilities
Hospitals
Nursing homes
Psychiatric hospitals

308.7 Group I-5, Hospitals. This occupancy shall include buildings and structures used for *medical care*, on a 24-hour basis for more than five persons who are *incapable of self-preservation*. This group shall include, but not be limited to, the following:

Hospitals and psychiatric hospitals.

Revise as follows:

404.5 Smoke control. A smoke control system shall be installed in accordance with Section 909.

Exception: In other than Groups I-2 and I-5, smoke control is not required for *atriums* that connect only two *stories*.

SECTION 425 **GROUP I-5 HOSPITALS AND PSYCHIATRIC HOSPITALS**

425.1 General. Occupancies in Group I-5 shall comply with the provisions of Sections 425.1 through 425.9 and other applicable provisions of this code.

425.2 Corridors. *Corridors* in occupancies in Group I-5 shall be continuous to the *exits* and separated from other areas in accordance with Section 424.3 except spaces conforming to Sections 425.2.1 through 425.2.3.

425.2.1 Areas open to corridor unlimited area shall be permitted to be open to a *corridor*, provided there is no treatment, patient sleeping or hazardous areas open to the *corridor* and are constructed as required for *corridors* and where all of the following criteria are met:

1. The open space is protected by an automatic fire detection system installed in accordance with Section 907.
2. The *corridors* onto which the spaces open, in the same smoke compartment, are protected by an automatic fire detection system installed in accordance with Section 907, or the smoke compartment in which the spaces are located is equipped throughout with quick-response sprinklers in accordance with Section 903.3.2.
3. The space is arranged so as not to obstruct the *exit access* to the required *exits*.

425.2.2 Care providers' stations. Spaces for care providers', supervisory staff, doctors' and nurses' charting, communications and related clerical areas shall be permitted to be open to the *corridor*, when such spaces are constructed as required for *corridors*.

425.2.3 Gift shops. Gift shops and associated storage less than 500 square feet (46.5 m²) in area shall be permitted to be open to the *corridor* provided the gift shop and storage areas are fully sprinklered and storage areas are protected in accordance with Section 509.4.

425.3 Corridor walls. *Corridor* walls shall be constructed as smoke partitions in accordance with Section 711.

425.3.1 Corridor doors. *Corridor* doors, other than those in a wall required to be rated by Section 509.4 or for the enclosure of a vertical opening or an *exit*, shall not have a required *fire protection rating* and shall not be required to be equipped with self-closing or automatic-closing devices, but shall provide an effective barrier to limit the transfer of smoke and shall be equipped with positive latching. Roller latches are not permitted. Other doors shall conform to Section 716.5.

425.3.2 Locking devices. Locking devices that restrict access to the patient room from the *corridor*, and that are operable only by staff from the *corridor* side, shall not restrict the *means of egress* from the patient room except for patient rooms in mental health facilities.

425.4 Means of egress. Group I-5 occupancies shall be provided with a means of egress complying with Chapter 10 and Sections 407.4.1 through 407.4.3.6.2 and this section. The fire safety and evacuation plans provided in accordance with Section 1001.4 shall identify the building components necessary to support a *defend in place* emergency response in accordance with Sections 404 and 408 and the International Fire Code.

425.4.1 Travel distance. The travel distance between any point in a Group I-5 occupancy sleeping room, not located in a *care suite*, and an *exit access* door in that room shall be not greater than 50 feet (15 240 mm).

425.4.2 Group I-5 care suites. *Care suites* in Group I-5 shall comply with Section 425.4.2.1 through 425.4.2.2 and either Section 425.4.2.3 or 425.4.2.4.

425.4.2.1 Exit access through care suites. *Exit access* from all other portions of a building not classified as a *care suite* shall not pass through a *care suite*. In a *care suite* required to have more than one *exit*, one *exit access* is permitted to pass through an adjacent *care suite* provided all of the other requirements of Sections 425.4 and 1014.2 are satisfied.

425.4.2.2 Separation. *Care suites* shall be separated from other portions of the building by a smoke partition complying with Section 710.

425.4.2.3 Access to Corridor. Movement from habitable rooms shall not require passage through no more than 3 doors and 100 feet (30 480 mm) travel distance within the suite.

Exception: The travel distance shall be permitted to be increased to 125 feet (38 100 mm) where an automatic smoke detection system is provided throughout the *care suite* and installed in accordance with NFPA 72.

425.4.2.4 Care suites containing sleeping room areas. Sleeping rooms shall be permitted to be grouped into *care suites* if one of the following conditions is met:

1. The *care suite* is not used as an *exit access* for more than eight care recipient beds.
2. The arrangement of the *care suite* allows for direct and constant visual supervision into the sleeping rooms by care providers.
3. An automatic smoke detection system is provided in the sleeping rooms and installed in accordance with NFPA 72.

425.4.2.4.1 Area. *Care suites* containing sleeping rooms shall be not greater than 7,500 square feet (696 m²) in area.

Exception: *Care suites* containing sleeping rooms shall be permitted to be not greater than 10,000 sq feet (929 m²) in area where an automatic smoke detection system is provided throughout the *care suite* and installed in accordance with NFPA 72.

425.4.2.4.2 Exit access. Any sleeping room, or any *care suite* that contains sleeping rooms, of more than 1,000 square feet (93 m²) shall have no fewer than two *exit access* doors from the *care suite* located in accordance with Section 1015.2.

425.4.2.5 Care suites not containing sleeping rooms. Areas not containing sleeping rooms, but only treatment areas and the associated rooms, spaces or circulation space shall be permitted to be grouped into *care suites* and shall conform to the limitations in Section 425.4.2.5.1 and 425.4.2.5.2.

425.4.2.5.1 Area. *Care suites* of rooms, other than sleeping rooms, shall have an area not greater than 10,000 square feet (929 m²).

425.4.2.5.2 Exit access. *Care suites*, other than sleeping rooms, with an area of more than 2,500 square feet (232 m²) shall have no fewer than two *exit access* doors from the *care suite* located in accordance with Section 1015.2.

425.4 Smoke barriers. *Smoke barriers* shall be provided to subdivide every *story* used by persons receiving care, treatment or sleeping and to divide other *stories* with an *occupant load* of 50 or more persons, into no fewer than two *smoke compartments*. Such *stories* shall be divided into *smoke compartments* with an area of not more than 22,500 square feet (2,092 m²) in Group I-2 occupancies and not more than 40,000 square feet in Group I-5 hospitals and the travel distance from any point in a *smoke compartment* to a *smoke barrier* door shall be not greater than 200 feet (60,960 mm). The *smoke barrier* shall be in accordance with Section 709.

Exception: Atriums provided with smoke control complying with Section 404 are not limited in area for a smoke compartment.

425.4.1 Refuge area. Refuge areas shall be provided within each *smoke compartment*. The size of the refuge area shall accommodate the occupants and care recipients from the adjoining *smoke compartments*. Where a *smoke compartment* is adjoined by two or more *smoke compartments* the minimum area of the refuge area shall accommodate the largest *occupant load* of the adjoining compartments. The size of the refuge area shall provide the following:

1. Not less than 30 net square feet (2.8 m²) for each care recipient confined to bed or gurney.
2. Not less than 6 square feet (0.6 m²) for each ambulatory care recipient not confined to bed or gurney and for other occupants.

425.4.2 Independent egress. A *means of egress* shall be provided from each smoke compartment created by *smoke barriers* without having to return through the smoke compartment from which *means of egress* originated.

425.4.3 Horizontal assemblies. *Horizontal assemblies* supporting *smoke barriers* required by this section shall be designed to resist the movement of smoke and shall comply with Section 711.9.

(For Sections 425.5 through 425.7 see Part II)

425.8 Hyperbaric facilities. Hyperbaric facilities in Group I-5 occupancies shall meet the requirements contained in Chapter 20 of NFPA 99.

425.9 Additions. Additions shall be separated from any existing structure, which is not conforming to the provisions for new construction, by fire walls per Table 706.4 or fire barriers per Table 707.3.10 with not less than 2-hour fire resistance construction.

425.10 Elevator Lobbies. Elevator lobbies required by Sections 711.9 and 713.14.1 shall comply with all of the following:

1. Be a minimum of 120 square feet (11.1 m²) in area.
2. Constructed as required for *smoke partitions* in accordance with Section 710.

Revise as follows:

**TABLE 503
ALLOWABLE BUILDING HEIGHTS AND AREAS^{a, b}**

Building height limitations shown in feet above grade plane. Story limitations shown as stories above grade plane.

Building area limitations shown in square feet, as determined by the definition of "Area, building," per story

		TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
GROUP	HEIGHT (feet)	A	B	A	B	A	B	HT	A	B
	STORIES (S) AREA (A)									
I-5	$\frac{S}{A}$	$\frac{UL}{UL}$	$\frac{4}{UL}$	$\frac{2}{15,000}$	$\frac{1}{11,000}$	$\frac{1}{12,000}$	$\frac{NP}{NP}$	$\frac{1}{12,000}$	$\frac{1}{9,500}$	$\frac{NP}{NP}$

(Portions of table not shown remain unchanged)

504.2 Automatic sprinkler system increase. Where a building is equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one. These increases are permitted in addition to the *building area* increase in accordance with Sections 506.2 and 506.3. For Group R buildings equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.2, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one, but shall not exceed 60 feet (18 288 mm) or four *stories*, respectively.

Exception: The use of an *automatic sprinkler system* to increase *building heights* shall not be permitted for the following conditions:

1. Buildings, or portions of buildings, classified as a Group I-2 and I-5 ~~occupancy~~ occupancies of Type IIB, III, IV or V construction.
2. Buildings, or portions of buildings, classified as a Group H-1, H-2, H-3 or H-5 occupancy.
3. Buildings where an *automatic sprinkler system* is substituted for fire-resistance rated construction in accordance with Table 601, Note d.

**TABLE 509
INCIDENTAL USES**

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input.	1 hour or provide automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen cutoff rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies
Incinerator rooms	2 hours and provide automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system
In Group E occupancies, Laboratories and vocational shops, not classified as Group H, located in Group E or I-2 occupancy	1 hour or provide automatic sprinkler system
In Group I-2 and I-5 occupancies, laboratories not classified as a Group H	1 hour and provide automatic sprinkler system
In ambulatory care facilities, laboratories not classified as a Group H	1 hour or provide automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system

ROOM OR AREA	SEPARATION AND/OR PROTECTION
In Group I-2 and I-5 occupancies, laundry rooms over 100 square feet	1 hour
Group I-3 cells and Group I-2 and I-5 patient rooms equipped with padded surfaces	1 hour
In Group I-2 and I-5, physical plant maintenance shops.	1 hour
In Group I-2 and I-5 or ambulatory care facilities, Waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater	1 hour
In other than ambulatory care facilities and Group I-2 and I-5, Waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system
In Group I-2 and I-5 or ambulatory care facilities, storage rooms greater than 100 square feet	1 hour
Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I, and R occupancies

Revise as follows:

710.8 Ducts and air transfer openings. The space around a duct penetrating a smoke partition shall be filled with an *approved* material to limit the free passage of smoke. Air transfer openings in smoke partitions shall be provided with a *smoke damper* complying with Section 717.3.2.2.

Exceptions:

1. Where the installation of a *smoke damper* will interfere with the operation of a required smoke control system in accordance with Section 909, *approved* alternative protection shall be utilized.
2. Smoke dampers shall not be required in duct penetrations of smoke partitions in fully ducted heating, ventilating and air-conditioning systems and the mechanical system will shut down upon detection of smoke and in buildings provided with an *automatic sprinkler system* complying with Sections 903.3.1.1 and 903.3.2.

712.1.8 Two-story openings. In other than Groups I-2 and I-3, a floor opening that is not used as one of the applications listed in this section shall be permitted if it complies with all of the items below.

1. Does not connect more than two stories.
2. Does not contain a stairway or ramp required by Chapter 10.
3. Does not penetrate a horizontal assembly that separates fire areas or smoke barriers that separate smoke compartments.
4. Is not concealed within the construction of a wall or a floor/ceiling assembly.
5. Is not open to a corridor in Group I and R occupancies.
6. Is not open to a corridor on nonsprinklered floors.
7. Is separated from floor openings and air transfer openings serving other floors by construction conforming to required shaft enclosures.

713.14.1 Elevator lobby. An enclosed elevator lobby shall be provided at each floor where an elevator shaft enclosure connects more than three *stories*. The lobby enclosure shall separate the elevator shaft enclosure doors from each floor by *fire partitions*. In addition to the requirements in Section 708 for *fire partitions*, doors protecting openings in the elevator lobby enclosure walls shall also comply with Section

716.5.3 as required for *corridor* walls and penetrations of the elevator lobby enclosure by ducts and air transfer openings shall be protected as required for *corridors* in accordance with Section 717.5.4.1. Elevator lobbies shall have at least one *means of egress* complying with Chapter 10 and other provisions within this code. Elevator lobbies within Group I-5 occupancies shall comply with Section 425.10

Exceptions:

1. through 7. (*Exceptions not shown remain unchanged*)

717.5.5 Smoke barriers. A *listed smoke damper* designed to resist the passage of smoke shall be provided at each point a duct or air transfer opening penetrates a *smoke barrier*. *Smoke dampers* and *smoke damper* actuation methods shall comply with Section 717.3.3.2.

Exceptions:

1. *Smoke dampers* are not required where the openings in ducts are limited to a single *smoke compartment* and the ducts are constructed of steel.
2. Smoke dampers shall not be required in Ambulatory Care Facilities and Groups I-2 and I-5 occupancies where the HVAC is fully ducted in accordance with Section 603 of the International Mechanical Code and where buildings are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 and equipped with quick response sprinklers in accordance with Section 903.3.2.

Revise as follows:

**TABLE 1016.2 (IFC [B] 1016.2)
EXIT ACCESS TRAVEL DISTANCE^a**

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, M, R, S-1	200	250 ^b
I-1	Not Permitted	250 ^c
B	200	300 ^c
F-2, S-2, U	300	400 ^c
H-1	Not Permitted	75 ^c
H-2	Not Permitted	100 ^c
H-3	Not Permitted	150 ^c
H-4	Not Permitted	175 ^c
H-5	Not Permitted	200 ^c
I-2, I-3, I-4, <u>I-5</u>	Not Permitted	200 ^c

For SI: 1 foot = 304.8 mm.

- See the following sections for modifications to *exit access* travel distance requirements:
 - Section 402.8: For the distance limitation in *malls*.
 - Section 404.9: For the distance limitation through an *atrium* space.
 - Section 407.4: For the distance limitation in Group I-2.
 - Sections 408.6.1 and 408.8.1: For the distance limitations in Group I-3.
 - Section 411.4: For the distance limitation in special amusement buildings.
 - Section 425.3: For the distance limitation in Group I-5.
 - Section 1015.4: For the distance limitation in refrigeration machinery rooms.
 - Section 1015.5: For the distance limitation in refrigerated rooms and spaces.
 - Section 1021.2: For buildings with one *exit*.
 - Section 1028.7: For increased limitation in assembly seating.
 - Section 1028.7: For increased limitation for assembly open-air seating.
 - Section 3103.4: For temporary structures.
 - Section 3104.9: For pedestrian walkways.
- Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where *automatic sprinkler systems* are permitted in accordance with Section 903.3.1.2.
- Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

**TABLE 1018.1 (IFC [B] TABLE 1018.1)
CORRIDOR FIRE-RESISTANCE RATING**

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system
I-2 ^a , I-4, I-5	All	Not permitted	0

(Portions of Table not shown remain unchanged)

**TABLE 1018.2 (IFC [B] TABLE 1018.2)
MINIMUM CORRIDOR WIDTH**

Occupancy	Width (minimum)
Any facilities not listed below	44 inches
Access to and utilization of mechanical, plumbing or electrical systems or equipment	24 inches
With a required occupancy capacity less than 50	36 inches
Within a dwelling unit	36 inches
In Group E with a <i>corridor</i> having a required capacity of 100 or more	72 inches
In <i>corridors</i> and areas serving gurney traffic in occupancies where patients receive outpatient medical care, which causes the patient to be incapable of <i>self-preservation</i>	72 inches
Group I-2 and I-5 in areas where required for bed movement	96 inches

For SI: 1 inch = 25.4 mm.

1018.4 (IFC [B] 1018.4) Dead ends. Where more than one *exit* or *exit access doorway* is required, the *exit access* shall be arranged such that there are no dead ends in *corridors* more than 20 feet (6096 mm) in length.

Exceptions:

1. In occupancies in Group I-3 of Occupancy Condition 2, 3 or 4 (see Section 308.5), the dead end in a *corridor* shall not exceed 50 feet (15 240 mm).
2. In occupancies in Groups B, E, F, I-1, M, R-1, R-2, R-4, S and U, where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, the length of the dead-end *corridors* shall not exceed 50 feet (15 240 mm).
3. A dead-end *corridor* shall not be limited in length where the length of the dead-end *corridor* is less than 2.5 times the least width of the dead-end *corridor*.
4. In occupancies in Group I-5 occupancies where the building is equipped throughout with an *automatic sprinkler system* in accordance with Sections 903.3.1.1 and 903.3.2 the length of the dead-end corridor shall not exceed 30 feet (9 144 mm).

Revise as follows:

1107.5.3 Group I-2 hospitals. *Accessible units* and *Type B units* shall be provided in general-purpose hospitals, psychiatric facilities and detoxification facilities of Group I-2 and Group I-5 occupancies in accordance with Sections 1107.5.3.1 and 1107.5.3.2.

1107.5.3.1 Accessible units. At least 10 percent, but not less than one, of the *dwelling units* and *sleeping units* shall be *Accessible units*.

Exception: Entry doors to Accessible dwelling or sleeping units shall not be required to provide the maneuvering clearance beyond the latch side of the door.

Revise as follows:

3304.8 Group I-5. For buildings employing a *defend in place* method in Group I-5 occupancies, an on-site fire watch shall be provided in accordance with the Section 901.7 of the *International Fire Code*.

3311.3 Group I-5. Temporary construction within corridors serving bed or stretcher movement in Group I-5 occupancies shall not reduce the corridor width to less than 60 inches.

PART II – INTERNATIONAL FIRE CODE

Add new definition as follows:

IBC [F] 425.5 Automatic sprinkler system. Quick-response or residential sprinklers shall be provided in accordance with Section 903.3.2

IBC [F] 425.6 Fire alarm system. A fire alarm system shall be provided in accordance with Section 907.2.6.

IBC [F] 425.7 Automatic fire detection. Group I-5 occupancies shall be equipped with smoke detection as required in Section 425.2.

Revise as follows:

903.2.6 (IBC [F] 903.2.6) Group I. An *automatic sprinkler system* shall be provided throughout buildings with a Group I *fire area*.

Exceptions:

1. An automatic sprinkler system installed in accordance with Section 903.3.1.2 shall be permitted in Group I-1 facilities.
2. An *automatic sprinkler system* installed in accordance with Section 903.3.1.3 shall be allowed in Group I-1 facilities when in compliance with all of the following:
 - 2.1. A hydraulic design information sign is located on the system riser;
 - 2.2. Exception 1 of Section 903.4 is not applied; and
 - 2.3. Systems shall be maintained in accordance with the requirements of Section 903.3.1.2.
3. An *automatic sprinkler system* is not required where day care facilities are at the *level of exit discharge* and where every room where care is provided has at least one exterior exit door.
4. In buildings where Group I-4 day care is provided on levels other than the *level of exit discharge*, an *automatic sprinkler system* in accordance with Section 903.3.1.1 shall be installed on the entire floor where care is provided and all floors between the level of care and the level of *exit discharge*, all floors below the *level of exit discharge*, other than areas classified as an open parking garage.
5. In Group I-5 occupancies, an *automatic sprinkler system* is not required in closets less than 6 square feet in area.

903.3.2 (IBC [F] 903.3.2) Quick-response and residential sprinklers. Where *automatic sprinkler systems* are required by this code, quick-response or residential automatic sprinklers shall be installed in the following areas in accordance with Section 903.3.1 and their listings:

1. Throughout all spaces within a smoke compartment containing care recipient *sleeping units* in Group I-2 in accordance with this code.
2. Throughout all spaces within a smoke compartment containing treatment rooms in ambulatory care facilities.

3. *Dwelling units and sleeping units* in Group I-1 and R occupancies.
4. Light-hazard occupancies as defined in NFPA 13.
5. Group I-5 occupancies.

907.2.6 (IBC [F] 907.2.6) Group I. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group I occupancies. An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be provided in accordance with Sections 907.2.6.1, 907.2.6.2, ~~and~~ 907.2.6.3.3 and 907.2.6.4.

Exceptions:

1. Manual fire alarm boxes in sleeping units of Group I-1 and I-2 occupancies shall not be required at *exits* if located at all care providers' control stations or other constantly attended staff locations, provided such stations are visible and continuously accessible and that travel distances required in Section 907.4.2.1 are not exceeded.
2. Occupant notification systems are not required to be activated where private mode signaling installed in accordance with NFPA 72 is *approved* by the fire code official.

907.2.6.2 (IBC [F] 907.2.6.2) Group I-2. An automatic smoke detection system shall be installed in *corridors* in nursing homes, long-term care facilities, detoxification facilities and spaces permitted to be open to the *corridors* by Section 407.2. The system shall be activated in accordance with Section 907.5.

Exceptions:

1. Corridor smoke detection is not required in smoke compartments that contain sleeping units where such units are provided with smoke detectors that comply with UL 268. Such detectors shall provide a visual display on the corridor side of each sleeping unit and shall provide an audible and visual alarm at the care provider station attending each unit.
2. Corridor smoke detection is not required in smoke compartments that contain sleeping units where sleeping unit doors are equipped with automatic door-closing devices with integral smoke detectors on the unit sides installed in accordance with their listing, provided that the integral detectors perform the required alerting function.

907.2.6.4 (IBC [F] 907.2.6.4) Group I-5. Hospitals shall be equipped with smoke detection as required in Section 425.

909.4.6 (IBC [F] 909.4.6) Duration of operation. All portions of active or passive smoke control systems shall be capable of continued operation after detection of the fire event for a period of not less than either 20 minutes or 1.5 times the calculated egress time, whichever is ~~less~~ greater.

Reason: Hospitals historically are treated differently than other occupancies based on the need to defend in place during an emergency and that exit corridors are a work area in a hospital setting. This code change recognizes that hospitals are to be treated as a separate and distinct occupancy within the confines of the codes. The basic premise for the change is to remove health care hospitals and psychiatric hospitals from the I-2 umbrella and create a new Group I-5 category. Each of the code changes above have been brought forth by the Ad Hoc Committee for Health Care during the course of 2011, with a few exceptions. Although creating different Conditions of use within a Group I-2 occupancy is one approach, it doesn't recognize the need for separating hospitals into their own occupancy category.

Group I-3 occupancies are defined by different Conditions and are meant for restraint with different levels of securing occupants based on their level of movement capacities, from less secure to more secure. Institutional occupancies have not only different levels of supervision but also different levels of care. The current Group I-2 occupancy category has similar care levels for those that are incapable of self-preservation, but there are historical reasons why hospitals have more restrictive and prescriptive requirements than the other classifications within Group I-2, such as detoxification facilities and nursing homes. Switching hospitals to a separate occupancy is the next logical step in the progression of hospital development for the I-codes.

The scoping classification in Section 308.4 has been revised to reflect that those in nursing home, detoxification facilities, and foster care facilities receive custodial care as defined within the Section 202. Section 308.5 has been added for Group I-5 to reflect the need for medical care, also defined in Section 202.

Section 425 has been created specifically for Group I-5 occupancies. There are some code sections that overlap each of the I-2 and I-5 occupancy classifications and those are reflected above as well. The proposals brought forth by the Ad Hoc Committee for Health Care have been researched thoroughly in 2011 and all reasoning statements are well documented. Based on the work of the Ad Hoc Committee for Health Care, all of these code changes are based on the requirements of external agencies enforcing life

safety requirements from the NFPA standards. It is no secret that The Joint Commission has required the use of NFPA 101 for hospitals for decades. For this agency to change from using NFPA 101 to the IBC, drastic changes in the perception of the IBC and ease of its use for hospitals are needed.

Cost Impact: There is no cost impact for these changes as the industry has been using similar guidelines for many years as within the proposed changes through The Joint Commission regulations.

G32-12

PART I – IBC – G

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – IFC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

308.4-G-BRESETTE

G33 – 12

202, 308.1.1 (NEW), 408.1, 425 (NEW), Chapter 35

Proponent: Dave Fable, U.S General Services Administration, Public Buildings Service, representing U.S. General Services Administration, Public Buildings Service (dave.fable@gsa.gov)

Revise as follows:

SECTION 202 DEFINITIONS

Lock-Up. An area located in an occupancy, other than an I-3 occupancy, where occupants are detained by the use of security measures not under such occupants' control.

Revise as follows:

SECTION 308 INSTITUTIONAL GROUP I

308.1 Institutional Group I. Institutional Group I occupancy includes, among others, the use of a building or structure, or a portion thereof, in which care or supervision is provided to persons who are or are not capable of self-preservation without physical assistance or in which persons are detained for penal or correctional purposes or in which the liberty of the occupants is restricted. Institutional occupancies shall be classified as Group I-1, I-2, I-3 or I-4.

308.1.1 Lockups. Lockups located in occupancies, other than Group I-3 occupancies, shall comply with the requirements of the main occupancy of the building in which the lockup is located and with the requirements of Section 425.

Revise as follows:

SECTION 408 GROUP I-3

408.1 General. Occupancies in Group I-3 shall comply with the provisions of Sections 408.1 through 408.11 and other applicable provisions of this code (see Section 308.5). Lockups located in occupancies, other than I-3 occupancies, shall comply with the requirements of Section 425.

SECTION 425 LOCKUPS.

425.1 General. Lockups in occupancies, other than Group I-3 occupancies, where the holding area has capacity for more than 50 detainees or where any individual is detained for more than 24 hours, shall be classified as Group I-3 occupancies and shall comply with the requirements of Section 408. Lockups in occupancies, other than Group I-3 occupancies, where the holding area has capacity for not more than 50 detainees, and where no individual is detained for more than 24 hours, shall comply with Section 425.2 or Section 425.3.

425.2 Lockup Option 1. The lockup shall comply with the requirements for the main occupancy of the building in which the lockup is located, and all of the following criteria:

1. Doors and other physical restraints to free egress by detainees can be readily released by staff within 2 minutes of the onset of a fire or similar emergency.
2. Staff is in sufficient proximity to the lockup so as to be able to cause the 2-minute release required by 425.2(1) whenever detainees occupy the lockup.

3. Staff is authorized to cause the release required by 425.2(1).
4. Staff is trained and practiced in effecting the release required by 425.2(1).
5. Where the release required by 425.2(1) is caused by means of remote release, detainees are not to be restrained from evacuating without the assistance of others.

425.2.1 Fire department notification. The fire department with responsibility for responding to a building that contains a lockup shall be notified of the presence of the lockup.

425.3 Lockup Option 2. Where the lockup does not comply with all the provisions of Section 425.2 the requirements of this Section shall be met.

425.3.1 Main occupancy. The requirements applicable to the main occupancy of the building in which the lockup is located shall be met.

425.3.2 Means of egress. Where security operations necessitate the locking of required means of egress, the following shall apply:

1. Detention-grade hardware meeting the requirements of ASTM F 1577 shall be provided on swinging doors within the required means of egress.
2. Sliding doors within the required means of egress shall be designed and engineered for detention and correctional use, and lock cylinders shall meet the cylinder test requirements of ASTM F 1577.

425.3.3 Smoke detection. The lockup shall be provided with a smoke detection system in accordance with Section 907.4.3.

425.3.4 Fire alarm system. Where the requirements applicable to the main occupancy of the building do not mandate a fire alarm system, the lockup shall be provided with a fire alarm system meeting all of the following criteria:

1. The fire alarm system shall be installed in accordance with Section 907.6.
2. Initiation of the fire alarm system shall be accomplished by all of the following:
 - 2.1. Manual fire alarm boxes in accordance with Section 907.4.2
 - 2.2. Smoke detection system in accordance with Section 425.3.3
 - 2.3. Automatic sprinkler system required by the provisions applicable to the main occupancy of the building.
3. Staff and occupant notification shall be provided automatically in accordance with Section 907.5.
4. Emergency force notification shall be provided in accordance with Section 907.6.5.

425.3.5 Fire department notification. The fire department with responsibility for responding to a building that contains a lockup shall be notified of the presence of the lockup.

Add new definition to Chapter 35 as follows:

ASTM – F 1577-05 Standard Test Methods for Detention Locks for Swinging Doors

Reason: The intent of this code change proposal is to address the subject matter of 'lockups'. A lockup is basically a holding area in which persons are detained with some degree of security imposed on them that are commonly located in different types of occupancies. For example, lockups are typically located in immigration and naturalization facilities at border crossings, customs facilities at international airports, prisoner holding facilities at courthouses, local police department holding areas, security offices at sports stadia, security offices at shopping mall complexes, etc. Currently, the requirements within the IBC require "lockups" to meet the rigorous defend in place requirements applicable for Group I-3 occupancies. This code change proposal provides requirements specifically for lockups located in other than Group I-3 occupancies and provide a reasonable set of safe guards applicable to the main occupancy of the building in which the lockup is located. The subject provisions for lockups are meant to apply to holding areas of limited capacity in which no individual is detained for 24 or more hours.

New Section 425.1 establishes that if the holding area has the capacity for more than 50 detainees, it is classified as Group I-3 occupancy. Similarly, new Section 425.2 requires that, if an individual is detained for 24 or more hours, the holding area must be classified as Group I-3 occupancy.

Lockups subject to the provisions in Sections 425.3 are offered two options of compliance. Option #1 in Section 425.2 requires a system of safeguards, so that doors and physical restraints to free egress by detainees can be readily released by trained staff with the authority to cause such release, within 2 minutes of the onset of a fire or similar emergency. Option #1 will apply to holding areas that either (1) are staffed at all times when detainees are present or (2) have staff in close proximity and the detection and notification technology needed to summon such trained staff immediately upon the onset of an emergency. Option #2 provides alternate provisions for when all the criteria of the 2-minute release option in compliance Option #1 cannot be satisfied. This alternate set of provisions relies heavily on the presence of complete smoke detection within the lockup and its use to summon trained staff and emergency forces via the fire alarm system, which is required even if otherwise exempted for the main occupancy of the building. In addition, if the Code provisions applicable to the main occupancy of the building require sprinkler protection, the water flow in the sprinkler system must initiate the required alarm system. This option also imposes requirements for detention-grade doors hardware to address any reliability concerns by referencing ASTM F 1577-05, Standard Test Methods for Detention Locks for Swinging Doors. The subject standard's test methods will help ensure that detention locks perform at acceptable levels to control passage to unauthorized or secure areas, to confine detainees, and to delay escape attempts.

Please note that the subject code change proposal is based on the requirements for lockups in the National Fire Protection Association, Life Safety Code (2012 edition).

Cost Impact: This code change will not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, ASTM F 1577-05 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2012.

G33-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-LOCK UP (NEW)-G-FRABLE.doc

G34 – 12

308.3, 310.6

Proponent: Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee

Revise as follows:

308.3 Institutional Group I-1. This occupancy shall include buildings, structures or portions thereof for more than 16 persons who reside on a 24 hour basis in a supervised environment and receive *custodial care*. The persons receiving care are capable of self preservation. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- ~~Convalescent facilities~~
- Group homes
- Halfway houses
- Residential board and *custodial care* facilities
- Social rehabilitation facilities

310.6 Residential Group R-4. This occupancy shall include buildings, structures or portions thereof for more than five but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive *custodial care*. The persons receiving care are capable of self-preservation. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- ~~Convalescent facilities~~
- Group homes
- Halfway houses
- Residential board and *custodial care* facilities
- Social rehabilitation facilities

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code.

Reason: This term is outdated and should be deleted from Group I-1. The term 'convalescent home' is being currently being incorrectly used in IMC Table 403.3 as a Group I-2 facility. There is a correlative proposal to delete the term from IMC Table 403.3.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

Cost Impact: The proposed changes will not increase the cost of construction.

G34-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

308.3-G-BALDASSARRA-CTC

G35 – 12

202, 308.3, 308.4 (IFC [B] 202)

Proponent: Jerry Rosendahl, President, National Association of State Fire Marshals
(jerry.rosendahl@state.mn.us)

Revise as follows:

308.3 Institutional Group I-1. This occupancy shall include buildings, structures or portions thereof for more than 16 persons who reside on a 24 hour basis in a supervised environment and receive *custodial care*. The persons receiving care are capable of self preservation. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities with residents capable of self preservation
- Congregate care facilities
- Convalescent facilities
- Group homes
- Halfway houses
- Residential board and *custodial care* facilities
- Social rehabilitation facilities

308.4 Institutional Group I-2. This occupancy shall include buildings and structures used for *medical care* on a 24-hour basis for more than five persons who are *incapable of self preservation*. This group shall include, but not be limited to, the following:

- Foster care facilities
- Detoxification facilities
- Hospitals
- Nursing homes
- Psychiatric hospitals
- Assisted living facilities with residents incapable of self preservation

Revise as follows:

ASSISTED LIVING FACILITIES. Custodial care congregate residential settings that provide or coordinate personal and health care services, 24-hour supervision, and assistance (scheduled and unscheduled) for the health care maintenance of adults who are aged, infirm or disabled and who are cared for in a primarily residential setting.

HEALTH CARE MAINTENANCE. The protection, general supervision and oversight of the physical and mental well-being of an aged, infirm or disabled individual. Residents may or may not need assistance to evacuate.

CUSTODIAL CARE. Assistance with day-to-day living tasks; such as assistance with cooking, taking medication, bathing, using toilet facilities and other tasks of daily living. Custodial care includes occupants who evacuate at a slower rate and/or who have mental and psychiatric complications- and may be incapable of self preservation.

Reason: The current code language limits I-2 to only medical care facilities, which in itself would be in conflict with foster child care facilities. There are many facilities housing residents incapable of self-preservation that are not medical facilities by state definitions. This represents a huge gap in the code. With I-2 as a classification for only those facilities providing medical care and I-1 for only those capable of self-preservation, the IBC has no classification for a facility in which residents are under the care, supervision, protection or under the responsible care of the facility operator, and who are not capable of self-preservation. We do not object to what the CTC committee is attempting to do, but the CTC should recognize that the code certainly should be clear about the protection required for all individuals who are under the care of others and develop provisions that will protect all individuals. In

order to make the proper distinction and close the code's gap, the definition of "assisted living facilities" is offered. The phrase "health care maintenance" appears only in the definition of "assisted living facilities".

Cost Impact: The code change proposal will not increase the cost of construction.

G35-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-ASSISTED LIVING FACILITIES (NEW)-G-ROSENDAHL

G36 – 12

308.3.1, 308.4.1, 310.5.1(IFC [B] 202)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC GENERAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC GENERAL CODE DEVELOPMENT COMMITTEE.

Proponent: Betsy Lease, representing Brown County Partnership

Revise as follows:

SECTION 308 INSTITUTIONAL GROUP I

308.3.1 Five or fewer persons receiving care. A facility such as the above with five or fewer persons receiving such care shall be classified as Group R-3 or shall comply with the *International Residential Code*, ~~provided an automatic sprinkler system is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *International Residential Code*.~~

308.4.1 Five or fewer persons receiving care. A facility such as the above with five or fewer persons receiving such care shall be classified as Group R-3 or shall comply with the *International Residential Code*, ~~provided an automatic sprinkler system is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *International Residential Code*.~~

SECTION 310 RESIDENTIAL GROUP R

310.5.1 Care facilities within a dwelling. Care facilities for five or fewer persons receiving care that are within a single-family dwelling are permitted to comply with the *International Residential Code*, ~~provided an automatic sprinkler system is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *International Residential Code*.~~

Reason: The purpose of this proposal is to let the IRC determine if a sprinkler system is required in what it typically a single family home. The sprinkler system should not be 'hidden' within the IBC for homes constructed under the IRC. It is discriminatory to require only these homes to have sprinkler systems if the state has decided to not require sprinklers under IRC.

I am Chairman of a community-wide accessibility committee that works with and supports organizations that helps people with disabilities, often with limited mobility live in home in their community. These individuals may be temporarily physically disabled, or permanently disabled, or even in hospice. We advocate for them get custodial care and medical care on a regular basis – anywhere from a visit per day to a live-in helper. When it is a long term situation, we assist people to make modifications to their home to accommodate the care needs, or the client may choose to build a new home with what is commonly called a 'mother-in-law's suite' or nursery. Some of the officials I have talked to say this requirement is only for where home care is a business, but the text is not written that way. Therefore, this could be applicable to any home where one person needs custodial care or medical care. Was the intent was to apply this to foster care, or if someone I am taking care of in my home is not related? It is discriminatory under Fair Housing Act to define 'family' by blood or marriage. In addition, I am not aware of a state that licenses facilities with 5 or fewer residents.

Cost Impact: The proposed changes will not increase the cost of construction.

G36-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

308.3.1-G-LEASE

G37 – 12

202, 308.5, 308.5.6 (NEW) (IFC [B] 202)

Proponent: Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee

Revise as follows:

308.5 Institutional Group I-3. This occupancy shall include buildings and structures that are inhabited by more than five persons who are under restraint or security. An I-3 facility is occupied by persons who are generally *incapable of selfpreservation* due to security measures not under the occupants' control. This group shall include, but not be limited to, the following:

- Correctional centers
- Detention centers
- Jails
- Lockup facility
- Prerelease centers
- Prisons
- Reformatories

Buildings of Group I-3 shall be classified as one of the occupancy conditions indicated in Sections 308.5.1 through 308.5.5 (see Section 408.1).

308.5.6 Lockup facilities. A lockup facility for five or less persons shall be classified as a Group B occupancy or as part of the primary occupancy provided they comply with the following provisions:

1. The area containing a lockup facility shall be separated from other rooms, spaces or areas by approved smoke barrier complying with Section 709.
2. The area containing a lockup facility shall be protected with an automatic fire sprinkler system complying with Section 903.
3. The area containing a lockup facility shall be provided with an automatic smoke detection system installed in accordance with Section 907.

Ad new definition as follows:

SECTION 202 DEFINITIONS

LOCKUP FACILITY. Buildings containing holding cells, rooms or areas where occupants are restrained or detained.

Reason: This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

Part 1 of this code proposal is the revision of Section 308.5 and the addition of Section 308.5.6. The revision removes more than five persons, and adds buildings and structures containing a room, holding cell or cellblock used to place persons under restraint or security. The new section adds lockup facilities and also clarifies that an approved smoke barrier complying with Section 709 be provided, and also fire sprinkler and smoke detectors be installed.

Part 2 of this code proposal adds a definition for lockup facilities that is needed in the Code that clarifies the use occupancies for buildings/spaces that contain five or less occupants under restraint or detained.

This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as

well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

Cost Impact: This proposal will increase the cost of construction of rooms or spaces used to restrain or detain occupants.

G37-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

308.2-G-BAJNAI-BCAC

G38 – 12

202, 310.3, 310.4 (IFC [B] 202)

Proponent: Dana Peterson, University of New Hampshire, representing APPA.ORG - Leadership in Education

Revise as follows:

SECTION 310 RESIDENTIAL GROUP R

310.1 Residential Group R. Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not regulated by the *International Residential Code*.

310.3 Residential Group R-1. Residential occupancies containing *sleeping units* where the occupants are primarily *transient* in nature, including:

Boarding houses (transient) with more than 10 occupants
Congregate living facilities (transient) with more than 10 occupants
Dormitories (transient)
Hotels (transient)
Motels (transient)
Vacation timeshare properties (transient)

310.4 Residential Group R-2. Residential occupancies containing *sleeping units* or more than two *dwelling units* where the occupants are primarily permanent in nature, including:

Apartment houses
Boarding houses (nontransient) with more than 16 occupants
Congregate living facilities (nontransient) with more than 16 occupants
Convents
Dormitories/Student residence facilities (nontransient)
Fraternities and sororities
Hotels (nontransient)
Live/work units
Monasteries
Motels (nontransient)
Vacation timeshare properties (nontransient)

Revise as follows:

SECTION 202 DEFINITIONS

DORMITORY. A ~~space in a building or space within~~ where group sleeping accommodations are provided in one room, or in a series of closely associated rooms, for persons not members of the same family group, under joint occupancy and single management, ~~as in college dormitories or fraternity houses.~~

DWELLING UNIT. A single unit providing complete, independent living facilities for one or more persons including permanent provisions for living, sleeping, eating, cooking, and sanitation.

SLEEPING UNIT. A room or space in which people sleep, which can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both or a unit of sleeping accommodations in a building where provisions for living, sleeping, and sanitation are provided

communally, and provisions for eating and cooking are either provided communally or permitted. Such rooms and spaces that are also part of a *dwelling unit* are not sleeping units.

TRANSIENT. Occupancy of a *dwelling unit* or *sleeping unit* for a short term temporary basis, typically not more than 30 days.

Reason: The purpose of the proposed change is to clarify the classification of the Residential Group R occupancy types especially as it applies to student residence facilities, formerly commonly referred to, and sometimes still referred to as dormitories. Currently, dormitories are listed as R-2 occupancies which we feel is a correct designation for today's student residence facilities. However, the definition provided for a dormitory suggests a student lifestyle and building type of a bygone day. Today's residence halls are anything but formulaic. Many are a mix of apartments, suites, double-doubles, and single occupant rooms. These kinds of facilities make for interesting architectural arrangements of space and complex interior floor plans that don't always have intuitively obvious exit routes. Cooking facilities, both in individual rooms and communal kitchens, as well as food service facilities, are becoming increasingly more common if not the norm. A trend toward "Living and Learning" has created buildings that have increasing amounts of assembly space within them. Classrooms, recreation facilities, and movie/concert/dance venues are all becoming commonplace in newer facilities.

That said, there are still buildings that are akin to the old-style dormitory, such as summer camps, hostels, homeless shelters, bunkhouses, and barracks, and the code should have a classification to recognize those facilities too. So our proposal recognizes dormitories as a potential R-1 occupancy as well and judges the difference the same way as all other R-1 occupancies are judged, by the transient or nontransient nature of the occupants. Although it is not central to our purpose, we also took this opportunity to suggest that vacation timeshare properties also be located to the R-1 occupancy for the same reason and so that the logic for classification based upon the familiarity with the building remains consistent.

The proposal also specifically designates that nontransient student residence facilities are an R-2 occupancy, removing the necessity for the "dormitory" definition to do double duty to both describe the defining features and give all-encompassing examples. It also slightly modifies the definition of "transient" to put the emphasis on the defining characteristic of short term occupancy, with "30 days" given more as a guidepost than an absolute.

APPA is also seeking this strengthening and clarification for the occupancy classification of student residence facilities under IBC in support of its ongoing efforts with the National Fire Prevention Association to facilitate a change in that code to classify student residence facilities with apartment buildings or in a separate chapter, rather than with hotels as they do currently. Adoption of our proposal would clarify IBC's position that APPA is in concurrence with and strengthen APPA's argument for consistency in NFPA's view of the same issue.

Cost Impact: The proposed changes will not increase the cost of construction.

G38-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

310.1-G-PETERSON

G39 – 12
310.4 (IFC [B] 202)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC GENERAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC GENERAL CODE DEVELOPMENT COMMITTEE.

Proponent: Wesley Walters, Clark County Development Services

Revise as follows:

310.4 Residential Group R-2 Residential occupancies containing *sleeping units* or more than two *dwelling units* where the occupants are primarily permanent in nature, including:

- Apartment houses
- Boarding houses* (nontransient) with more than 16 occupants
- Condominiums (nontransient)
- Convents
- Dormitories
- Fraternities and sororities
- Hotels (nontransient)
- Live/work units
- Monasteries
- Motels (nontransient)
- Vacation timeshare properties

Reason: Condominiums are a part of any towns' makeup of housing types and they are not defined within the code. Without condominiums added in the decision becomes, are they apartments that are individually owned, or townhouses that may not have handicap access. Without classifying this type of residence there will not be consistent interpolations of where they belong in the code.

Cost Impact: The code change proposal will not increase the cost of construction.

G39-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

310.4-G-WALTERS

G40 – 12

202, 310.5, 310.5.2 (NEW), IPC Table 403.1 (IBC [P] Table 2902.1)

Proponent: Tim Nogler, Washington State Building Code Council, representing Washington Association of Building Officials Technical Code Development Committee (tim.nogler@des.wa.gov)

Revise as follows:

310.5 Residential Group R-3. Residential occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

- Buildings that do not contain more than two *dwelling units*
- Boarding houses* (nontransient) with 16 or fewer occupants
- Boarding houses (transient)* with 10 or fewer occupants
- Care facilities that provide accommodations for five or fewer persons receiving care
- Congregate living facilities* (nontransient) with 16 or fewer occupants
- Congregate living facilities (transient)* with 10 or fewer occupants
- Lodging houses* with five or fewer *guest rooms*

310.5.2 Lodging houses. Owner occupied *lodging houses* with five or fewer *guest rooms* shall be permitted to be constructed in accordance with the *International Residential Code*.

Add new definitions as follows:

SECTION 202 DEFINITIONS

GUEST ROOM. A room used or intended to be used by one or more guests for living or sleeping purposes.

LODGING HOUSE. A one family dwelling where one or more occupants are primarily permanent in nature, and rent is paid for guestrooms.

Revise as follows:

**IPC TABLE 403.1 (IBC [P] TABLE 2902.1)
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a
(See IPC Sections 403.2 and 403.3)
(See IBC Sections 2902.2 and 2902.3)**

No.	Classification	Occupancy	Description	WATER CLOSETS (Urinals see section 419.2 of the IPC)		LAVATORIES		BATHTUBS/SHOWERS	Drinking Fountains ^{e,f} (See Section 410.1 of the IPC)	OTHER
				MAL E	FEMALE	MAL E	FEMALE			
7	Residential	R-3	One-and two-family dwellings and <u>lodging houses with 5 or fewer guest rooms</u>	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	--	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit

(Portions of table not shown remain unchanged)

Reason: The purpose of this code change is to allow a small bed and breakfast or similar lodging to be classified as single family. The proposed definitions are from the 2012 IRC. This proposal makes the IBC consistent with the IRC in regulating “lodging houses”. The 2012 IRC scope covers lodging house occupancies with five or fewer guestrooms, when equipped with a fire sprinkler system. In the previous cycle, the IBC General committee had concerns that adding the IRC definitions to the IBC would create conflict with chapter 29 required plumbing fixtures. The committee had concerns that a new Group R-3 occupancy would create confusion with how to determine minimum number of plumbing fixtures per chapter 29. To address that concern, this proposal adds “lodging house” to IPC Table 403.1 (IBC Table 2902.1) to be consistent with one-family dwellings.

Cost Impact: This code change proposal will not increase the cost of construction.

G40-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

310.5-NOGLER

G41 – 12

310.5, 310.5.2(NEW) (IFC [B] 202)

Proponent: Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee

Revise as follows:

310.5 Residential Group R-3. Residential occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

- Buildings that do not contain more than two *dwelling units*
- Boarding houses* (nontransient) with 16 or fewer occupants
- Boarding houses (transient)* with 10 or fewer occupants
- Care facilities that provide accommodations for five or fewer persons receiving care
- Congregate living facilities* (nontransient) with 16 or fewer occupants
- Congregate living facilities (transient)* with 10 or fewer occupants
- Owner-occupied lodging houses (transient) with 16 or fewer occupants

310.5.1 Care facilities within a dwelling. Care facilities for five or fewer persons receiving care that are within a single-family dwelling are permitted to comply with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *International Residential Code*.

310.5.2 Owner occupied lodging houses. Owner-occupied lodging houses with ten or fewer occupants shall be permitted to be constructed in accordance with the International Residential Code where equipped throughout with an automatic sprinkler system in accordance with Section P2904 of the International Residential Code.

Reason: This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

The purpose of this code change is to provide correlation between the International Residential Code and the International Building Code. During the previous code cycle provisions allowing the construction under the IRC for owner-occupied lodging houses for five or fewer guestrooms were approved. This proposal adds owner-occupied lodging houses to the list of R-3 Occupancy and provides a pointer to the IRC when the number of occupants falls to ten or fewer.

This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

Cost Impact: This proposal will decrease the cost of construction by clarifying the relationship between the IRC and the IBC.

G41-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

310.5-G-BAJNAI-BCAC

G42 – 12

311.1.2 (NEW) (IFC [B] 202)

Proponent: Tod Connors, Arlington County (VA) Department of Community Planning, Housing, and Development/Division of Inspection Services, representing self

Revise as follows:

311.1.2 Accessory storage spaces. A room or space used for storage purposes that is less than 100 square feet (9.3m²) in area and accessory to another occupancy will be classified as part of that occupancy. The aggregate area of such rooms or spaces shall not exceed the allowable area limits of Section 508.2.

Reason: Storage rooms were removed from Incidental Uses, Table 509. Storage is now treated as a mixed use condition and must meet either the requirements of 508.2 Accessory occupancies, 508.3 Nonseparated occupancies, or 508.4 Separated occupancies. When applying these mixed use sections in B occupancy buildings of IIB or IIA construction, an S-I storage room cannot be placed on the highest floor allowed by Table 503 Allowable Building Heights and Areas and Section 504 Building Height. The 100 square foot lower limit would allow small storage rooms on upper floors. This area is the same lower limit used in the Incidental Use Table when storage rooms were last included. The statement limiting area to the limits under current Accessory occupancy requirements is to preclude a large number of small storage rooms in excess of what other code sections limit.

Cost Impact: The code change proposal will not increase the cost of construction.

G42-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

311.1.2 (NEW)-G-CONNORS

G43 – 12

202, 402.1, 402.1.1

Proponent: David S. Collins, The Preview Group, Inc. (dcollins@preview-group.com)

Revise as follows:

ANCHOR BUILDING. An exterior perimeter building of a group ~~other than H~~ having direct access to a *covered or open mall building* but having required *means of egress* independent of the mall.

COVERED MALL BUILDING. A ~~single building~~ enclosing a number of tenants and ~~, of different occupants, occupancies~~ such as retail stores, drinking and dining establishments, entertainment and amusement facilities, passenger transportation terminals, offices and other similar uses wherein two or more tenants have a main entrance into one or more malls. *Anchor buildings* shall not be considered as a part of the covered mall building. The term “covered mall building” shall include ~~open mall buildings~~ as defined below.

Mall. A ~~roofed or covered common pedestrian area within a covered mall building~~ that serves as access for two or more tenants and not to exceed three levels that are open to each other. The term “mall” shall include ~~open malls~~ as defined below.

Open mall. An ~~unroofed common pedestrian way serving a number of tenants not exceeding three levels. Circulation at levels above grade shall be permitted to include open exterior balconies leading to exits discharging at grade.~~

Open mall building. Several structures housing a number of tenants, such as retail stores, drinking and dining establishments, entertainment and amusement facilities, offices, and other similar uses, wherein two or more tenants have a main entrance into one or more open malls. *Anchor buildings* are not considered as a part of the open mall building.

Revise as follows:

402.1 Applicability. The provisions of this section shall apply to mall buildings or structures defined herein as that are covered, or open or a combination of covered and open mall buildings not exceeding three floor levels at any point nor more than three stories above grade plane. Except as specifically required by this section, covered and open mall buildings shall meet applicable provisions of this code. Mall buildings shall include buildings with multiple tenants of varying occupancies, anchor buildings and parking garages. Group H occupancies shall not be permitted in mall buildings or anchor buildings.

Exceptions:

- ~~1. Foyers and lobbies of Groups B, R-1 and R-2 are not required to comply with this section.~~
- ~~2. Buildings need not comply with the provisions of this section where they totally comply with other applicable provisions of this code.~~

402.1.1 Open space. A ~~Covered mall building and attached, anchor buildings~~ and parking garages shall be surrounded on all sides by a permanent open space or not less than 60 feet (18 288 mm). ~~An open mall building and anchor buildings and parking garages adjoining the perimeter line shall be surrounded on all sides by a permanent open space of not less than 60 feet (18 288 mm).~~

Exception: The permanent open space of 60 feet (18 288 mm) shall be permitted to be reduced to not less than 40 feet (12 192 mm), provided the following requirements are met:

1. The reduced open space shall not be allowed for more than 75 percent of the perimeter of the *covered or open mall building* and *anchor buildings*;

2. The *exterior wall* facing the reduced open space shall have a *fire-resistance rating* of not less than 3 hours;
3. Openings in the *exterior wall* facing the reduced open space shall have opening protectives with a *fire protection rating* of not less than 3 hours; and
4. Group E, H, I or R occupancies are not located within the *covered or open mall building or anchor buildings*.

Reason: The definition of Anchor Building and Covered Mall Building includes various technical requirements that are contradictory and should be a part of the requirements in Section 402, not a definition.

The definition Covered Mall Building includes commentary language that is not comprehensive and should not be a part of the code. The use or storage of hazardous materials had been an occupancy that was prohibited from being a part of a covered mall building and has been specifically stated by this change. The prohibition on the H occupancy is included in the definition of anchor buildings. Defining elements of the building that are uniquely part of the requirements of the code should not be hidden in the definition.

By including open mall building as part of the definition of covered malls, the single building provisions are incorrect. Why the provisions for multiple buildings on a single lot can't be considered a covered mall building isn't clear. Other conditions of a series of buildings that include both enclosed and open "mall" features isn't addressed leaving open questions in the code, simply because of the definitions.

Cost Impact: The increased understanding of what this section is addressing will significantly reduce the cost of design and review.

G43-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

402.1-G-COLLINS

G44 – 12

402.4.1

Proponent: David S. Collins, The Preview Group, Inc. (dcollins@preview-group.com)

Revise as follows:

402.4.1 Area and types of construction. The *building area* of any covered mall or open building, including *anchor buildings*, of Types I, II, III and IV construction shall not be limited provided the ~~anchor~~ *buildings* do not exceed three *stories above grade plane*.

~~The construction type of open parking garages and enclosed parking garages shall comply with Sections 406.5 and 406.6, respectively.~~

Exception: ~~The type of construction allowable building height and building area~~ of *anchor buildings* greater than three *stories above grade plane* shall comply with Section 503, as modified by Sections 504 and 506.

Reason: As written the section makes no sense and is impossible to design for or to enforce. Section 402.4.1 references an open building; there is nothing in the code that describes an "open building." We believe what was intended was an "open mall building." Secondly, the prescription that the mall can be unlimited as long as the anchor building doesn't exceed three stories would allow an unlimited height mall, but limit the anchor building to three stories.

Similarly the reference to Section 406 for open and enclosed parking garages is unnecessary as it is simply a pointer to the limits for parking garages. Nothing in the code would prohibit a parking garage from being a part of the mall building and not be limited by 406.

Finally, the exception for anchor buildings is poorly written and is not an exception to any of the previous stated requirements. What the section is trying to say is that the type of construction for an anchor building over three stories in height must meet be met by the height and area limits of 503, with the open perimeter and fire suppression allowances. By removing the unnecessary words "allowable building height and building area," the sentence is rational. 402.4.1 simply states that if they are three stories or less, they are allowed to be unlimited in area.

By these changes it would be clear that all malls can be unlimited in area if all parts of it, including the anchor building are not more than three stories in height. Similarly, garages are allowed as part of the mall. Several sections indicate how the anchor building or garage are to be treated if they are not part of the mall meeting the three story limit.

Cost Impact: The increased understanding of what this section is addressing will significantly reduce the cost of design and review.

G44-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

402.4.1-G-COLLINS

G45 – 12

402.4.1, 402.4.1.1 (NEW), 402.4.1.2 (NEW), 402.4.1.3 (NEW)

Proponent: Sarah A. Rice, C.B.O., The Preview Group (srice@preview-group.com)

Revise as follows:

402.4.1 Area and types of construction. ~~The building area and type of construction of any covered mall or open mall buildings, including anchor buildings, of Types I, II, III and IV construction shall not be limited provided the anchor buildings do not exceed three stories above grade plane. The construction type of open parking garages and enclosed parking garages shall comply with Sections 406.5 and 406.6, respectively. and parking garages shall comply with this section.~~

Exception: ~~The type of construction allowable building height and building area of anchor buildings greater than three stories above grade plane shall comply with Section 503, as modified by Sections 504 and 506.~~

402.4.1.1 Covered and open mall buildings. The building area of any covered mall or open mall building shall not be limited provided the covered mall or open mall building does not exceed three floor levels at any point nor three stories above grade plane, and is of Type I, II, III or IV construction.

402.4.1.2 Anchor buildings. The building area and building height of any anchor building shall be based upon the type of construction as required by Section 503, as modified by Sections 504 and 506.

Exception: The building area of any anchor building shall not be limited provided the anchor building is not more than three stories above grade plane, and is of Type I, II, III or IV construction.

402.4.1.3 Parking garage. The building area and building height of any parking garage, open or enclosed, shall be based upon the type of construction as required by Sections 406.5 and 406.6, respectively.

Reason: The proposed change seeks to add clarity to what have always been somewhat confusing limits and requirements for types of construction for mall buildings and their attached structures (anchor buildings and parking garages) by breaking a single code section into multiple sections. No technical changes are proposed.

A regional shopping center is typically by code comprised of 3 components; a covered or open mall, an anchor building(s), and a parking garage(s). And when it comes to building area and type of construction requirements in the IBC, each of these components has a unique set of criteria. Currently the IBC has the building area and type of construction regulations for all 3 of these components in a single section, which makes it confusing when trying to distinguish which provision applies to which component.

This proposal seeks to break the content of current Section 402.4.1 into 3 subsections – one for the mall building itself (402.4.1.1), one for anchor buildings (402.4.1.2) and one for parking garages (402.4.1.3).

When broken down, the building area and type of construction requirements for mall buildings, anchor buildings and parking garages are very clear.

Cost Impact: The proposed changes will not increase the cost of construction.

G45-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

402.4.1-G-RICE

G46 – 12

402.6.4.1

Proponent: Richard Crawford, Mercer Sign Consultants, representing United States Sign Council (rcmercer@verizon.net)

Delete without substitution as follows:

~~**402.6.4.1 Area.** Plastic signs shall be not more than 20 percent of the wall area facing the mall.~~

Reason: The existing Code provision is has no rational basis. The sign industry can find no practical, engineering or public safety reason to limit Wall sign size to 20 % of a Wall inside a Mall. Signs inside malls do not experience wind load stresses or damage from external elements. The value originally inserted in the Appendix H 402.15.1 was arbitrary and was not supported by direct research or practical sign fabrication experience. The size of a wall sign with a plastic face installed inside a mall is properly within the jurisdiction of the property owner, the sign owner, and any applicable local codes. There is no practical percentage value to substitute, and deletion is recommended. For example, a small storefront may often warrant a sign area that comprises a larger percentage overall (larger than 20%), but this size may be insignificant compared to other tenant signs in the mall. These matters are more appropriately addressed between landlord and tenant.

Cost Impact: The code change proposal will not increase the cost of construction.

G46-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

402.15.1-G-CRAWFORD

G47 – 12

402.6.4.2

Proponent: Richard Crawford, Mercer Sign Consultants, representing United States Sign Council (rcmercer@verizon.net)

Delete without substitution as follows:

~~**402.6.4.2 Height and width.** Plastic signs shall be not greater than 36 inches (914 mm) in height, except that if the sign is vertical, the height shall be not greater than 96 inches (2438 mm) and the width shall be not greater than 36 inches (914 mm).~~

Reason: The existing Code provision is overly restrictive. The sign industry can find no practical, engineering or public safety reason to limit the height of tenant wall signs inside a Mall to 36" in height, nor then paradoxically allow a vertical height of 96" if the width is no more than 36". Signs inside malls do not experience wind load stresses or damage from external elements. The value originally inserted in the Appendix H 402.15.2 was arbitrary and was not supported by direct research or practical sign fabrication experience. The size of a wall sign with a plastic face installed inside a mall is properly within the jurisdiction of the property owner, the sign owner, and any applicable local codes. Many existing and planned sign installations inside Malls may not comply with this provision.

Cost Impact: The code change proposal will not increase the cost of construction.

G47-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

402.15.2-G-CRAWFORD

G48 – 12

403.1

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, (al.godwin@aon.com)

Revise as follows:

403.1 Applicability. *High-rise buildings* shall comply with Sections 403.2 through 403.6.

Exception: The provisions of Sections 403.2 through 403.6 shall not apply to the following buildings and structures:

1. Airport traffic control towers in accordance with Section 412.3.
2. *Open parking garages* in accordance with Section 406.5.
3. ~~Buildings with~~ The portion of a building containing a Group A-5 occupancy in accordance with Section 303.6. This exemption shall not apply to other uses that if on their own would have been considered as a high-rise building.
4. Special industrial occupancies in accordance with Section 503.1.1.
5. Buildings with a Group H-1, H-2 or H-3 occupancy in accordance with Section 415.

Reason: As written, the wording exempts any building as long as part of the building is a Group A-5. If built as one building, it could be read to exempt high-rise office and/or condo's that are connected to or part of a sports stadium.

The commentary states:

"Places of outdoor assembly (Group A-5) and stand alone open parking garages are exempted because of the free ventilation to the outside that exists in such structures,"

Many stadiums today, including at the college level, are built with uses such as sky boxes and restaurants that themselves qualify as a high rise. While exempting the open air stadium seems appropriate since its occupants can see everything, other uses should be protected as a high rise if any of those uses on their own exceed the high rise limitation.

Individuals in sky boxes do not have a clear vision of neighboring skyboxes. Exiting a sky box is not as simple as walking out into the open air seating and moving away from the hazard.

Cost Impact: This code change will increase the cost of construction if such other uses have been allowed to be exempt from high-rise provisions and are now required to comply.

G48-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

403#1-G-GODWIN

G49 – 12

403.1

THIS PROPOSAL IS ON THE AGENDA OF THE IBC GENERAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC GENERAL CODE DEVELOPMENT COMMITTEE.

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, (al.godwin@aon.com)

Revise as follows:

403.1 Applicability. *High-rise buildings* shall comply with Sections 403.2 through 403.6.

Exception: The provisions of Sections 403.2 through 403.6 shall not apply to the following buildings and structures:

1. Airport traffic control towers in accordance with Section 412.3.
2. *Open parking garages* in accordance with Section 406.5.
3. Buildings with a Group A-5 occupancy in accordance with Section 303.6. 4. Special industrial occupancies in accordance with Section 503.1.1.
5. Buildings with:
 - 5.1. a Group H-1 occupancy;
 - 5.2. a Group H-2 occupancy in accordance with Sections 415.7.1, 415.8.1, 415.8.3 and 415.8.4;
 - or,
 - 5.3. a Group H-3 occupancy in accordance with Section 415.7.1

Reason: The commentary states:

"Finally, buildings with occupancies in groups H-1, H-2 and H-3 are excluded from the provisions of this section because the fire hazard characteristics of such occupancies in a high-rise have not yet been considered."

However, the code does not prohibit these H occupancies from being in high-rise buildings. If that is the intent, then there are many sections of the code that need amending.

Are Group H occupancies allowed in high-rise buildings?

If not, this code change needs to go a different direction.

It is not uncommon to have Group H-2, flammable liquids, in a high rise building. And, high-rise labs often have H-2 flammable gases and H-3 oxidizing gases as well.

In accordance with Section 508.2.4, 508.3.3 and 415.8.2.1, specific H occupancies are required to be separated as separated mixed uses in accordance with Section 508.4. These Group H occupancies are not to be considered Accessory uses or non-separated mixed uses. They must always be separated mixed uses.

To exempt the entire building from high-rise provisions for complying with Section 415 does not seem reasonable since the provisions of that section do not compensate for the high rise provisions.

As listed, any high rise lab building that has a flammable gas H-2 room would be exempt from all of the high-rise provisions, including the fire service access elevator.

For example:

Section 415.8.2 provides provisions for the storage, handling, processing and transporting of flammable and combustible liquids in Groups H-2 and H-3 occupancies. There is a short list of requirements. However, compliance with that short list does not seem to compensate for the high-rise provisions of Section 403.

It does seem appropriate to exempt the occupancies only for the new sections listed. As proposed in this code change, only the following buildings would be exempt from the high rise provisions.

H-1 – required to be in a separate building and only allowed one story, Section 415.6.

H-2 and H-3 – when required to be in a separate building and only allowed one story, Section 415.7.

H-2 – special buildings:

Combustible dusts, grain processing and storage, Section 415.8.1

Liquefied petroleum gas facilities, Section 415.8.3.

Dry cleaning plants, Section 415.8.4.

Cost Impact: This code change proposal will not increase the cost of construction.

G49-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

403#2-G-GODWIN

G50 – 12

403.1, 403.1.1 (NEW)

Proponent: Kevin L. Derr, P.E., DVR Consulting LLC, representing self

Revise as follows:

403.1 Applicability. *High-rise buildings* shall comply with Sections 403.2 through 403.6.

Exception: The provisions of Sections 403.2 through 403.6 shall not apply to the following buildings and structures:

1. Airport traffic control towers in accordance with Section 412.3.
2. *Open parking garages* in accordance with Section 406.5.
3. Buildings with a Group A-5 occupancy in accordance with Section 303.6.
4. Special industrial occupancies in accordance with Section 503.1.1.
5. Buildings with a of Group H-1, H-2 or H-3 ~~occupancy~~ occupancies in accordance with Section 415.

403.1.1 Prohibited Use Groups. Mixed-use high-rise buildings with Group A, B, E, F, H-4, H-5, I, M, R, S or U occupancies shall not have a Group H-1, H-2 or H-3 occupancy located within the building or structure.

Reason: As indicated in the International Building Code Commentary, the fire risk associated with H-1, H-2 and H-3 occupancies have not yet been considered in a high-rise context. Sections of Section 415 and Chapter 5 of the IBC permit buildings or structure with H-1, H-2, or H-3 occupancy in excess of 75 feet above fire department vehicle access. As such there is a minor contradiction between the Commentary and specific provisions of the code. It is assumed that the intent of exception 5 is to prohibit Group H-1, H-2, and H-3 occupancies from being part of a "typical" high-rise building that would normally consists of residential, educational, business and other similar occupancies. However, the 2012 edition of the code states that buildings with a H-1, H-2, or H-3 occupancy do not have to comply with the provisions of Section 403.2 through 403.6. This is an issue because the provisions of Section 403.2 through 403.6 have been provided to address the increase risk associated with the tall structures and to aid in firefighting response. As written, a high-rise mixed use building with a H-3 occupancy located within the building can be built without the enhanced protection of increased structural integrity for exit enclosures and elevators (403.2.3), increased SFRM bond strength (403.2.4), improved fire suppression reliability (403.3), etc... The exception will allow architecture/engineers and builders an ability to circumvent code provisions specifically put in place to address the risk associated with tall building. This is not the intent of exception 5. The proposed change corrects the issue by prohibiting H-1, H-2 and H-3 occupancies from being located in a high-rise building with any of the other occupancies while allowing H occupancies to be built over 75 feet where permitted by Section 415 and Chapter 5.

Cost Impact: The proposal will not increase the cost of construction

G50-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

403.1-G-DERR

G51 – 12

403.2.1.2, Table 716.5, 3412.6.6 (IEBC [B] 1401.6.6)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Proponent: Philip Brazil, PE, Reid Middleton, Inc., representing Washington Association of Building Officials, Technical Code Development (pbrazil@reidmiddleton.com)

Revise as follows:

403.2.1.2 Shaft enclosures. For buildings not greater than 420 feet (128 000 mm) in *building height*, the required *fire-resistance rating* of the *fire barriers* enclosing vertical *shafts*, other than ~~exit enclosures~~ *interior exit stairway* and elevator hoistway enclosures, is permitted to be reduced to 1 hour where automatic sprinklers are installed within the *shafts* at the top and at alternate floor levels.

Revise as follows:

**TABLE 716.5
OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS**

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)
Fire walls and fire barriers having a required fire-resistance rating greater than 1 hour	4 3 2 1-1/2	3 3 ^a 1-1/2 1-1/2
Shaft, Enclosures for shafts, exit enclosures interior exit stairways and interior exit ramps; and exit passageway walls	2	1-1/2
Fire barriers having a required fire-resistance rating of 1-hour: Enclosures for shafts, exit access stairways, exit access ramps, interior exit stairways, and interior exit ramps; and exit passageway walls	1	1
Other fire barriers	1	3/4
Fire partitions: Corridor walls	1 0.5	1/3 ^b 1/3 ^b
Other fire partitions	1 0.5	3/4 1/3
Exterior walls	3 2 1	1-1/2 1-1/2 3/4
Smoke barriers	1	1/3 ^b

(Portions of Table not shown remain unchanged)

Revise as follows:

3412.6.6 (IEBC [B] 1401.6.6) Vertical openings. Evaluate the *fire-resistance rating* of ~~exit enclosures~~ *interior exit stairways or ramps*, hoistways, escalator openings and other shaft enclosures within the building, and openings between two or more floors. Table 3412.6.6(1) contains the appropriate protection values. Multiply that value by the construction type factor found in Table 3412.6.6(2). Enter the vertical opening value and its sign (positive or negative) in Table 3412.7 under Safety Parameter 3412.6.6, Vertical Openings, for fire safety, means of egress, and general safety. If the structure is a one-story building or if all the unenclosed vertical openings within the building conform to the requirements of Section 708, enter a value of 2. The maximum positive value for this requirement shall be 2.

Reason: The changes are for consistency with the approved changes from Proposal E5-09/10, which changed instances of “exit enclosure” to “interior exit stairway or ramp.” A reference to “ramp” is not added to Section 403.2.1.2 for consistency with Section 403 on high rise buildings, which generally does not specify ramps with interior exit stairways (e.g., Sections 403.2.3, 403.2.3.1, 403.2.3.2, 403.5.1 and 403.5.2). All instances of “exit enclosure” in the 2012 IBC are included in this proposal.

Cost Impact: The code change proposal will not increase the cost of construction.

G51-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

403.2.1.2-G-BRAZIL

G52 – 12

403.5.2, 403.5.4

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Proponent: Philip Brazil, PE, Reid Middleton, Inc., representing Washington Association of Building Officials, Technical Code Development (pbrazil@reidmiddleton.com)

Revise as follows:

403.5.2 Additional interior exit stairway. For buildings other than Group R-2 that are more than 420 feet (128 000 mm) in *building height*, one additional *interior exit stairway* meeting the requirements of Sections 1009 and 1022 shall be provided in addition to the minimum number of *exits* required by Section 1021.1. The total width of any combination of remaining *interior exit stairways* with one *interior exit stairway* removed shall be not less than the total width required by Section 1005.1. *Scissor stairs* shall not be considered the additional *interior exit stairway* required by this section.

Exception: An additional *interior exit stairway* shall not be required to be installed in buildings having elevators used for occupant self-evacuation in accordance with Section 3008.

403.5.4 Smokeproof enclosures. Every required *interior exit stairway* serving floors more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access shall be a *smokeproof enclosure* in accordance with Sections 909.20 and 1022.10.

Reason: "Interior" is added before "exit stairway" because "exit stairway" includes exterior exit stairways, which are not permitted in high-rise buildings by Section 1026.2. Based on our analysis of the 2012 IBC, all instances of "exit stairway" in provisions for or related to high-rise buildings, where a change to "interior exit stairways" is warranted, are included in this proposal.

Cost Impact: The code change proposal will not increase the cost of construction.

G52-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

403.5.2-G-BRAZIL

G53 – 12

403.6.1

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc. (bdbblack@neii.org)

Revise as follows:

403.6.1 Fire service access elevator. In buildings with an occupied floor more than 120 feet (36 576 mm) above the lowest level of fire department vehicle access, no fewer than two fire service access elevators, or all elevators, whichever is less, shall be provided in accordance with Section 3007. Each fire service access elevator shall have a capacity of not less than 3500 pounds (1588 kg) and shall comply with Section 3002.4.

Reason: When Section 3002.4 was amended to require elevator cars that can accommodate an 84 inch (2134 mm) stretcher it increased the size of the elevator car to a 3500 pound minimum capacity. As Section 403.6.1 now requires all Fire Service Access elevators in a building to be this size, it makes sense to coordinate this requirement with the stretcher size requirement.

As firefighters use Fire Service Access elevators to stage to fight a fire, these elevators will often be occupied carrying equipment and personnel to the staging floor. If only one of these 3500 pound elevators can also accommodate a stretcher, there is no guarantee that it will be the one that is available to evacuate injured persons. Having all Fire Service Access elevators usable and available to serve both the staging and the evacuation functions is an efficient way of taking advantage of what may be the largest elevator cars in the building.

Cost Impact: This code change proposal will not increase the cost of construction.

G53-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

403.6.1-G-BLACK

G54- 12

404.5, 712.1.8

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Healthcare and Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee (CTC)

Revise as follows:

404.5 Smoke control. A In other than Group I-2. smoke control system shall be installed in accordance with Section 909.

Exception: Smoke control is not required for *atriums* that connect only two *stories*.

712.1.8 Two-story openings. In other than ~~Groups I-2 and~~ Group I-3, a floor opening that is not used as one of the applications listed in this section shall be permitted if it complies with all of the items below.

1. Does not connect more than two stories.
2. Does not contain a stairway or ramp required by Chapter 10.
3. Does not penetrate a horizontal assembly that separates fire areas or smoke barriers that separate smoke compartments.
4. Is not concealed within the construction of a wall or a floor/ceiling assembly.
5. Is not open to a corridor in Group I and R occupancies.
6. Is not open to a corridor on nonsprinklered floors.
7. Is separated from floor openings and air transfer openings serving other floors by construction conforming to required shaft enclosures.

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx> This proposal is being co-sponsored by the ICC Code Technology Committee.

This proposal is intended to correct a misapplication of the intent of the code and coordinate with federal requirements. Currently the language in Section 404.5 and 404.6 would allow a two story atrium to be open to the floors without providing a smoke control system or any passive separation. While this may be appropriate for many occupancy groups, exposing patients who are incapable of self preservation to a large vertical opening is an unacceptable risk. Practically, this would never occur because federal requirements that fund and regulate these types of facilities would not allow an opening without either smoke control or passive separation.

Two story vertical openings are design features that hospitals typically employ to create a more calming and welcoming environment for the patients and their families. The intent of the code appears to allow multiple methods for dealing vertical openings. The AHC believed that a reasonable solution was to restrict the unprotected atrium language and concurrently add language to allow the use of two story openings in 712.1.8. This trade off would protect the corridor from the large opening between floors. It would also provide facilities and designers two options for dealing with these openings.

Cost Impact: The code change proposal will increase the cost of construction.

G54-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

404.5-G-Williams-AdHocHealthcare

G55 – 12

404.5

Proponent: Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee (CTC)

Revise as follows:

404.5 Smoke control. A In other than Group I-2 and Group I-1. Condition 2, smoke control system shall be installed in accordance with Section 909.

Exception: Smoke control is not required for *atriums* that connect only two *stories*.

Reason: The Adhoc Healthcare committee has a proposal to require smoke control for 2 story atriums in Group I-2 due to concerns about smoke compartmentation. The CTC care committee would like to include the new Group I-1, Condition 2 based on the same theory of protection.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

Cost Impact: The proposed changes will not increase the cost of construction.

G55-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

404.5-G-BALDASSARRA-CTC

G56 – 12

404.5

Proponent: Sarah A. Rice, C.B.O., The Preview Group (srice@preview-group.com)

Revise as follows:

404.5 Smoke control. A smoke control system shall be installed in accordance with Section 909.

Exceptions:

1. A smoke control system is not required for atriums that connect only two stories.
2. A smoke control system is not required for atriums connecting more than two stories when all of the following are met:
 - 2.1. Only the 2 lowest stories shall be permitted to be open to the atrium. Unprotected openings shall be permitted.
 - 2.2. All stories above the lowest 2 stories must be separated from the atrium in accordance with Section 404.6.
 - 2.3. No operable openings shall be allowed in the walls of the atrium above the lowest 2 stories.

Reason: As stated in Section 909, the purpose of a smoke control systems is to provide a tenable environment for the evacuation or relocation of occupants. A smoke control system is NOT intended for the preservation of contents, the timely restoration of operations or for assistance in fire suppression or overhaul activities. Smoke control systems that are required and regulated by the IBC serve a different purpose than the smoke- and heat-venting provisions found in Section 910 and they are not considered exhaust systems under Chapter 5 of the International Mechanical Code.

In an atrium that connects more than 2 stories, the smoke control systems is intended to maintained the height of the lowest horizontal surface of the smoke layer interface to at least 6 feet above any walking surface that forms a portion of a required egress system within the smoke zone for a period of not less than either 20 minutes or 1.5 times the calculated egress time, whichever is less.

But what if the only walking surfaces in the atrium are on the 2 lowest stories of the atrium? What if all the walls above the 2 lowest stories are solid without operable openings? What purpose does the smoke control system then serve? We contend none. And if the smoke control system has no real value, then why install it?

This proposed change seeks to make exempt atriums that may connect more than 2 stories but which do not have any walking surfaces above the 2 lowest stories of the atrium when the walls of the atrium above the 2 lowest stories do not have any operable openings.

Cost Impact: The proposed changes will not increase the cost of construction. The cost of construction would be reduced by this proposal.

G56-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

404.5-G-RICEE

G57 – 12

202, 404.9, 410.6.3.2, [F] 411.4 (IFC 914.7.1), 1007.6 (IFC [B] 1007.6), 1015.4 (IFC [B] 1015.4), 1015.5 (IFC [B] 1015.5), Table 1021.2(2) [IFC [B] Table 1021.2(2)], Table 3412.6.5 (IEBC [B] Table 1401.6.5), C104.1

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Proponent: Philip Brazil, PE, Reid Middleton, Inc., representing Washington Association of Building Officials, Technical Code Development (pbrazil@reidmiddleton.com)

Revise as follows:

SECTION 202 DEFINITIONS

COMMON PATH OF EGRESS TRAVEL. That portion of *exit access* which the occupants are required to traverse before two separate and distinct paths of egress travel to two *exits* are available. Paths that merge are common paths of travel. Common paths of egress travel shall be included within the permitted exit access travel distance.

404.9 Exit access travel distance. In other than the lowest level of the *atrium*, where the required *means of egress* is through the *atrium* space, the portion of *exit access* travel distance within the *atrium* space shall be not greater than 200 feet (60 960 mm). The exit access travel distance requirements for areas of buildings open to the *atrium* and where access to the *exits* is not through the *atrium*, shall comply with the requirements of Section 1016.

410.6.3.2 Exit access travel distance. The length of *exit access* travel distance shall be not greater than 300 feet (91 440 mm) for buildings without a sprinkler system and 400 feet (121 900 mm) for buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

[F] 411.4 (IFC 914.7) Automatic sprinkler system. *Special amusement buildings* shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1. Where the *special amusement building* is temporary, the sprinkler water supply shall be of an *approved* temporary means.

Exception: Automatic sprinklers are not required where the total floor area of a temporary *special amusement building* is less than 1,000 square feet (93 m²) and the exit access travel distance from any point to an *exit* is less than 50 feet (15 240 mm).

1007.6 (IFC [B] 1007.6) Areas of refuge. Every required *area of refuge* shall be *accessible* from the space it serves by an *accessible means of egress*. The maximum travel distance from any *accessible* space to an *area of refuge* shall not exceed the exit access travel distance permitted for the occupancy in accordance with Section 1016.1. Every required *area of refuge* shall have direct access to a *stairway* complying with Sections 1007.3 or an elevator complying with Section 1007.4. Where an elevator lobby is used as an *area of refuge*, the shaft and lobby shall comply with Section 1022.10 for smokeproof enclosures except where the elevators are in an *area of refuge* formed by a *horizontal exit* or smoke barrier.

1015.4 (IFC [B] 1015.4) Refrigeration machinery rooms. Machinery rooms larger than 1,000 square feet (93 m²) shall have not less than two *exits* or *exit access doorways*. Where two *exit access doorways* are required, one such doorway is permitted to be served by a fixed ladder or an *alternating tread device*. *Exit access doorways* shall be separated by a horizontal distance equal to one-half the maximum horizontal dimension of the room.

All portions of machinery rooms shall be within 150 feet (45 720 mm) of an *exit* or *exit access doorway*. An increase in exit access travel distance is permitted in accordance with Section 1016.1.

Doors shall swing in the direction of egress travel, regardless of the *occupant load* served. Doors shall be tight fitting and self-closing.

1015.5 (IFC [B] 1015.5) Refrigerated rooms or spaces. Rooms or spaces having a floor area larger than 1,000 square feet (93 m²), containing a refrigerant evaporator and maintained at a temperature below 68°F (20°C), shall have access to not less than two *exits* or *exit access doorways*.

Exit access Travel distance shall be determined as specified in Section 1016.1, but all portions of a refrigerated room or space shall be within 150 feet (45 720 mm) of an *exit* or *exit access doorway* where such rooms are not protected by an *approved automatic sprinkler* system. Egress is allowed through adjoining refrigerated rooms or spaces.

Exception: Where using refrigerants in quantities limited to the amounts based on the volume set forth in the *International Mechanical Code*.

**TABLE 1021.2(2) [IFC [B] TABLE 1021.2(2)]
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCUPANCIES**

STORY	OCCUPANCY	MAXIMUM OCCUPANTS PER STORY	MAXIMUM EXIT ACCESS TRAVEL DISTANCE
First story or basement	A, B ^b , E, F ^b , M, U, S ^b	49 occupants	75 feet
	H-2, H-3	3 occupants	25 feet
	H-4, H-5, I, R-1, R-2 ^{a, c} , R-4	10 occupants	75 feet
	S	29 occupants	100 feet
Second story	B, F, M, S	29 occupants	75 feet
Third story and above	NP	NA	NA

For SI: 1 foot = 304.8 mm.

NP – Not Permitted

NA – Not Applicable

- Buildings classified as Group R-2 equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with *emergency escape and rescue openings* in accordance with Section 1029.
- Group B, F and S occupancies in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 shall have a maximum exit access travel distance of 100 feet.
- This table is used for R-2 occupancies consisting of *sleeping units*. For R-2 occupancies consisting of *dwelling units*, use Table 1021.2(1).

**TABLE 3412.6.5 (IEBC [B] TABLE 1401.6.5)
CORRIDOR WALL VALUES**

OCCUPANCY	CATEGORIES			
	a	b	c ^a	d ^a
A-1	-10	-4	0	2
A-2	-30	-12	0	2
A-3, F, M, R, S-1	-7	-3	0	2
A-4, B, E, S-2	-5	-2	0	5

- Corridors not providing at least one-half the exit access travel distance for all occupants on a floor shall be category b.

C104.1 Exit facilities. Exits shall be provided in accordance with Chapters 10 and 11.

Exceptions:

- The maximum exit access travel distance from any point in the building to an approved exit shall not exceed 300 feet (91 440 mm).

2. One exit is required for each 15,000 square feet (1393.5 m²) of area or fraction thereof.

Reason: The addition of "exit access" before "travel distance" is for consistency with "exit access travel distance" in Section 1016 and elsewhere in the 2012 IBC, which was established with the approved changes from Proposal E5-09/10-AS. The other changes that are in Sections 1007.6 and 1015.4 are grammatical. Based on our analysis of the 2012 IBC, all instances of "travel distance" in the 2012 IBC where the addition of "exit access" is warranted are included in this proposal.

Cost Impact: The code change proposal will not increase the cost of construction.

G57-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

404.9-G-BRAZIL

G58 – 12

404.9.1 (NEW), 404.9.2 (NEW)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Proponent: Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee (BCAC)

Add new text as follows:

404.9 Travel distance. In other than the lowest level of the *atrium*, where the required *means of egress* is through the *atrium* space, the portion of *exit access* travel distance within the *atrium* space shall be not greater than 200 feet (60 960 mm). The travel distance requirements for areas of buildings open to the *atrium* and where access to the *exits* is not through the *atrium*, shall comply with the requirements of Section 1016.

404.9.1 Exit access across floor of atrium. Where the lowest level of the *atrium* is at the level of exit discharge, exit access travel distance shall be in accordance with Section 1016.2.

404.9.2 Interior exit stairways. A maximum of 50 percent of *interior exit stairways* are permitted to egress through the lowest level of an *atrium* where that level is the level of exit discharge in accordance with Section 1027.

Reason: The proposed language will clarify an otherwise vague permitted use of an atrium floor to be used as exit access to an exit from the atrium. This design is frequently encountered in healthcare and high-rise residential occupancies.

This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

Cost impact: The code change proposal will not increase the cost of construction.

G58-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

404.9.1-G-BAJNAI-BCAC

G59 – 12

202, 406.3, 406.3.1, 406.3.2, 406.3.3, 406.3.4

Proponent: Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee (BCAC)

Add new definition as follows:

PRIVATE GARAGE. A building or portion of a building in which motor vehicles used by the tenants of the building or buildings on the premises are stored or kept, without provisions for repairing or servicing such vehicles for profit.

Revise as follows:

406.3 Private garages and carports. Private garages and carports shall comply with Sections 406.3.1 through ~~406.3.5~~ 406.3.4.

406.3.1 Classification. ~~Buildings or parts of buildings~~ Private garages and carports shall be classified as Group U occupancies, because of the use or character of the occupancy. Each private garage shall be not greater than a 1,000 square feet (93 m²) in area, or one story in height except as provided in Section 406.3.2. Any building or portion thereof that exceeds the limitations specified in this section shall be classified in the occupancy group other than Group U that it most nearly resembles. Multiple private garages are permitted in a building when each private garage is separated from the other private garages by 1-hour fire barriers in accordance with Section 707, or 1-hour horizontal assemblies in accordance with Section 711, or both.

406.3.2 Area increase. ~~Group U occupancies used for the storage of private or pleasure-type motor vehicles where no repair work is completed or fuel is dispensed are permitted to be 3,000 square feet (279 m²) where the following provisions are met:~~

- ~~1. For a mixed occupancy building, the exterior wall and opening protection for the Group U portion of the building shall be as required for the major occupancy of the building. For such a mixed occupancy building, the allowable floor area of the building shall be as permitted for the major occupancy contained therein.~~
- ~~2. For a building containing only a Group U occupancy, the exterior wall shall not be required to have a fire-resistance rating and the area of openings shall not be limited where the fire separation distance is 5 feet (1524 mm) or more.~~

~~More than one 3,000 square foot (279 m²) Group U occupancy shall be permitted to be in the same structure, provided each 3,000 square foot (279 m²) area is separated by fire walls complying with Section 706.~~

406.3.3 ~~406.3.2~~ Garages and carports floor surfaces. ~~Carports shall be open on no fewer than two sides. Carport~~ Garage floor surfaces shall be of *approved* noncombustible material. ~~Carports not open on at least two sides shall be considered a garage and shall comply with the provisions of this section for garages. The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.~~

Exception: ~~Asphalt surfaces shall be permitted at ground level in carports.~~

~~The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.~~

406.3.4 ~~406.3.3~~ Separation. The separations of private garages from other occupancies shall comply with Section 508. Separation of private garages from dwelling units shall comply with the following: Sections 406.3.3.1 through 406.3.3.3.

1- **406.3.3.1 Dwelling unit separation.** The private garage shall be separated from the *dwelling unit* and its *attic* area by means of gypsum board, not less than ½ inch (12.7 mm) in thickness, applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than a 5/8-inch (15.9 mm) Type X gypsum board or equivalent and ½-inch (12.7 mm) gypsum board applied to structures supporting the separation from habitable rooms above the garage. Door openings between a private garage and the *dwelling unit* shall be equipped with either solid wood doors or solid or honeycomb core steel doors not less than 1 3/8 inches (34.9 mm) in thickness, or doors in compliance with Section 716.5.3 with a fire protection rating of not less than 20 minutes. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Doors shall be *self-closing* and self-latching.

2- **406.3.3.2 Ducts.** Ducts in a private garage and ducts penetrating the walls or ceilings separating the *dwelling unit*, including its *attic* area, from the garage shall be constructed of sheet steel of not less than 0.019 inches (0.48 mm), in thickness, and shall have no openings into the garage.

406.3.4 Carports. Carports shall be open on at least two sides. Carport floor surfaces shall be of approved noncombustible material. Carports not open on at least two sides shall be considered a garage and shall comply with the requirements for private garages.

Exception: Asphalt surfaces shall be permitted at ground level in carports.

The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.

(406.3.4, item 3) 406.3.4.1 Carport separation. A separation is not required between a Group R-3 and U carport, provided the carport is entirely open on two or more sides and there are not enclosed areas above.

Reason: Consistency and coordination among the International Codes is one of the cornerstones of the ICC Code Development process. The ICC Board established the ICC Building Code Action Committee (BCAC) to act as a forum to deal with complex issues ahead of the Code Development Process, identify emerging issues and draft proposed code changes. This proposed change is a result of the BCAC's work.

Part 1 of this code proposal adds a definition for private garage that is needed in the Code that clarifies the differences between a private garage, an open parking garage and an enclosed parking garage. This new definition for the IBC is modified from two of the legacy codes (1997 UBC Section 208 and 1999 BOCA Section 407.2. The SBC did not define a private garage.) and will serve well for the clarification of the Code that a private garage can be provided in other occupancies beside residential occupancies.

Part 2 of this code proposal is the revision of Section 406.3.1 and the deletion of Section 406.3.2 which were carry-overs from one of the legacy codes (1997 UBC Sections 312.2.1 & 312.2.2) that are really not applicable to the fire protection/life safety requirements in the IBC that address U occupancies in separated or mixed occupancies in a more defined manner than the previous legacy code from which these requirements were taken from. The retaining of a maximum size of 1000 square feet private garage (roughly a 20' x 50' floor area) is a reasonable limitation for a private garage before such a Group U occupancy would be required to be designed as a S-2 parking garage or a S-1 repair garage, as applicable. Such a maximum square footage for a private garage works out well when using IMC Section 402.2 requirement for natural ventilation in a private garage since the typical garage door is a minimum of 8' x 8' (64 sq. ft.), and the minimum natural ventilation required for ventilation is 4% of the floor area being ventilated (i.e. maximum 1000 sq. ft. x 0.04 = minimum 40 sq. ft. opening required < the minimum 64 sq. ft. overhead garage door). Such a garage door will provide an additional (24/40 =) 60% safety factor on the natural ventilation of the space under the Code.

Section 406.3.3 has been modified by breaking it into two sections and matching the language to the IRC language for clarity and correlation. (IRC Section R309 for reference).

This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

Cost: This proposal will decrease the cost of construction by clarifying the requirements for private garage separation and increasing coordination of the language with the IRC.

G59-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

406.3.1-G-BAJNAI-BCAC

G60 – 12

202, 406.3.1, 406.3.2, 406.3.3, 406.3.4, 508.3.3

Proponent: George Kellogg, City of Rocklin, representing Sacramento Valley Association of Building Officials

Revise as follows:

406.3 Private garages and carports. Private garages and carports shall comply with Sections 406.3.1 through 406.3.5.

406.3.1 Classification. ~~Buildings or parts of buildings classified as Group U occupancies because of the use or character of the occupancy~~ Private garages and private carports shall be not greater than 1,000 square feet (93 m²) in area or one *story* in height except as provided in Section 406.3.2. Any building or portion thereof that exceeds the limitations specified in this section shall be classified in the occupancy group other than Group U that it most nearly resembles.

406.3.2 Area increase. ~~Group U occupancies used for the storage of private or pleasure-type motor vehicles where no repair work is completed or fuel is dispensed~~ Private garages and private carports are permitted to be 3,000 square feet (279 m²) where the following provisions are met:

1. For a mixed occupancy building, the *exterior wall* and opening protection for the Group U portion of the building shall be as required for the major occupancy of the building. For such a mixed occupancy building, the allowable floor area of the building shall be as permitted for the major occupancy contained therein.
2. For a building containing only a Group U occupancy, the *exterior wall* shall not be required to have a *fire-resistance rating* and the area of openings shall not be limited where the *fire separation distance* is 5 feet (1524 mm) or more.

More than one 3,000-square-foot (279 m²) Group U occupancy shall be permitted to be in the same structure, provided each 3,000-square-foot (279 m²) area is separated by *fire walls* complying with Section 706.

406.3.3 Garages and carports Floor Surface. ~~Carports shall be open on no fewer than two sides. Private carport floor surfaces shall be of approved noncombustible material. Carports not open on at least two sides shall be considered a garage and shall comply with the provisions of this section for garages.~~

Exception: Asphalt surfaces shall be permitted at ground level in private carports.

The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.

406.3.4 Separation. Separations shall comply with ~~the following:~~ Section 508.4

Exceptions:

1. The *private garage* shall be separated from the Group R-3 dwelling unit and its *attic* area by means of gypsum board, not less than ½ inch (12.7 mm) in thickness, applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than a 5/8-inch (15.9 mm) Type X gypsum board or equivalent and ½-inch (12.7 mm) gypsum board applied to structures supporting the separation from habitable rooms above the garage. Door openings between a private garage and the Group R-3 dwelling unit shall be equipped with either solid wood doors or solid or honeycomb core steel doors not less than 13/8 inches (34.9 mm) in thickness, or doors in compliance with Section 716.5.3 with a

- fire protection rating of not less than 20 minutes. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Doors shall be *self-closing* and self-latching.
2. Ducts in a private garage and ducts penetrating the walls or ceilings separating the *dwelling unit*, including its *attic* area, from the private garage shall be constructed of sheet steel of not less than 0.019 inches (0.48 mm), in thickness, and shall have no openings into the private garage.
 3. A separation is not required between a Group R-3 and U private carport, provided ~~the carport is entirely open on two or more sides~~ and there are not enclosed areas above.

Revise as follows:

508.3.3 Separation. No separation is required between nonseparated occupancies.

Exceptions:

1. Group H-2, H-3, H-4 and H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Group I-1, R-1, R-2 and R-3 *dwelling units* and *sleeping units* shall be separated from other *dwelling* or *sleeping units* and from other occupancies contiguous to them in accordance with the requirements of Section 420.
3. Group U Private Garages and Carports shall be separated from all other occupancies in accordance with Section 508.4 except Group R-3.

Revise as follows:

SECTION 202 DEFINITIONS

CARPORT, PRIVATE. A private garage that is open on at least two sides

GARAGE, PARKING. A structure or portion of a structure that is used for the parking or storage of private motor vehicles.

GARAGE, PRIVATE. A structure or portion of a structure used for the storage of private or pleasure-type motor vehicles where no repair work is completed or fuel is dispensed.

GARAGE, PUBLIC PARKING. A structure or portion of structure that is used for the storage of private or pleasure-type motor vehicles other than a Private Garage or a Private Carport.

OPEN PARKING GARAGE. ~~A structure or portion of a structure~~ A parking garage with the openings as described in Section 406.5.2 on two or more sides. ~~that is used for the parking or storage of private motor vehicles as described in Section 406.5.3.~~

Reason: The proposed code revisions clarify the Code intent to allow Private Garages and Carports to be an accessory occupancy to any occupancy classification provided the requirements of Section 406.1 are met. Changes to the separation requirements for occupancies other than "R Occupancies" makes the Private Garage portions of other occupancies consistent with other code provisions. Proposed changes also elimination redundancies and simplify wording.

Cost Impact: The code change proposal will not increase the cost of construction.

G60-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-CARPORT, PRIVATE (NEW)-G-KELLOGG

G61 – 12

406.3.4 (NEW), 1003.2; (IFC [B] 1003.2)

Proponent: Sarah A. Rice, C.B.O., The Preview Group (srice@preview-group.com)

Add new text as follows:

406.3.4 Clear height. In private garages and carports the clear height in vehicle and pedestrian traffic areas shall be not less than 7 feet (2134 mm). Vehicle and pedestrian areas accommodating van-accessible parking shall comply with Section 1106.5.

Revise as follows:

1003.2 (IFC [B] 1003.2) Ceiling height. The *means of egress* shall have a ceiling height of not less than 7 feet 6 inches (2286 mm).

Exceptions:

1. Sloped ceilings in accordance with Section 1208.2.
2. Ceilings of *dwelling units* and *sleeping units* within residential occupancies in accordance with Section 1208.2.
3. Allowable projections in accordance with Section 1003.3.
4. *Stair* headroom in accordance with Section 1009.5.
5. Door height in accordance with Section 1008.1.1.
6. *Ramp* headroom in accordance with Section 1010.6.2.
7. The clear height of floor levels in vehicular and pedestrian traffic areas ~~in~~ of public and private parking garages in accordance with Section 406.4.1.
8. Areas above and below *mezzanine* floors in accordance with Section 505.2.

Reason: The code is silent regarding the ceiling height on private garages. The proposed text is identical to Section 406.4.1 which applies to public garages. Therefore this change would make the ceiling height of these two provisions identical. Without adding this provision, ceiling height will be governed by Section 1003.2 which requires a ceiling height of 7 feet 6 inches.

Section 406.4.1 of the 2012 IBC reads:

406.4.1 Clear height. *The clear height of each floor level in vehicle and pedestrian traffic areas shall be not less than 7 feet (2134 mm). Vehicle and pedestrian areas accommodating van-accessible parking shall comply with Section 1106.5.*

Cost Impact: The proposed changes will not increase the cost of construction.

G61-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

406.3.4 (NEW)-G-RICE

G62 – 12

406.3.4

Proponent: Sarah A. Rice, C.B.O., The Preview Group (srice@preview-group.com)

Revise as follows:

406.3.4 Separation. ~~Separations shall comply with the following:~~ Private garages shall be separated from other occupancies in the same building in accordance with Section 508.

Exceptions:

1. ~~The~~ Where located adjacent to a dwelling unit, a private garage shall be separated from the *dwelling unit* and its *attic* area by means of gypsum board, not less than ½ inch (12.7 mm) in thickness, applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than a 5/8-inch (15.9 mm) Type X gypsum board or equivalent and ½-inch (12.7 mm) gypsum board applied to structures supporting the separation from habitable rooms above the garage.
 - 1.1. Door openings between a private garage and the *dwelling unit* shall be equipped with either solid wood doors or solid or honeycomb core steel doors not less than 1³/₈ inches (34.9 mm) in thickness, or doors in compliance with Section 716.5.3 with a fire protection rating of not less than 20 minutes. Doors shall be self-closing and self-latching.
 - 1.2. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. ~~Doors shall be self-closing and self-latching.~~
 - ~~2.~~ 1.3. Ducts in a private garage and ducts penetrating the walls or ceilings separating the *dwelling unit*, including its *attic* area, from the garage shall be constructed of sheet steel of not less than 0.019 inches (0.48 mm), in thickness, and shall have no openings into the garage.
- ~~3.~~ 2. A separation is not required between a Group R-3 and U carport, provided the carport is entirely open on two or more sides and there are not enclosed areas above.

Reason: The code in Section 406 appears to be silent with respect to the separation requirements between a private garage and something other than a dwelling unit. Private garages are not limited to being accessory to residences, but could be accessory to other uses such as a small office building. The existing provisions of Section 406.3.4 only address the separations between a dwelling unit and a private garage or carport. This change directs the code user to the mixed occupancy section of the code to address the separations either as an accessory occupancy, non-separated or separated mixed occupancy. It then takes the existing text and changes it into an exception to sending people to Section 508.

The other change is to reformat what is currently Items 1 and 2 of Section 406.3.4. The current Item 1 has various sub-requirements applying to the wall separating the private garage from a dwelling unit. The provision for self-closing and self-latching doors is simply being moved to be adjacent to the remaining door requirements. The current item 2 would appear not to be a stand alone provision nor a distinct exception for the separation of private garage and dwelling unit, but is another element of the separation described in Item 1.

Cost Impact: The proposed changes will not increase the cost of construction.

G62-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

406.3.4-G-RICE

G63 – 12

406.4.3

Proponent: Donald R. Monahan, Walker Parking Consultants, representing Parking Consultants Council of the National Parking Association (don.monahan@walkerparking.com)

Revise as follows:

406.4.3 Vehicle barriers. *Vehicle barriers* not less than 2 feet 9 inches (835 mm) in height shall be placed ~~at the ends of drive lanes, and at the end of parking spaces~~ where the vertical distance to the ground or surface directly below is greater than 1 foot (305 mm). *Vehicle barriers* shall comply with the loading requirements of Section 1607.8.3.

Exception: *Vehicle barriers* are not required in vehicle storage compartments

Reason: The current language implies that only those walls at the end of parking spaces or at the end of a drive aisle need to comply with the vehicle barrier requirements. Sidewalls at parking spaces are also vulnerable to vehicle impact as the vehicle maneuvers into the stall. Similarly, the side walls of vehicle-only ramps are vulnerable to collision if a vehicle is out of control due to driver heart attack, slippery or wet surfaces, or obstacles on the ramp. All walls at vertical surface displacements need to meet these vehicle barrier requirements.

Cost Impact: We believe most responsible designers already provide vehicle barriers or ramped floors at all vertical transitions in floor surfaces, such that this relatively minor clarification will not have a significant cost impact.

G63-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

406.4.3-G-MONAHAN

G64 – 12
406.6.2, 406.8.2

THIS PROPOSAL IS ON THE AGENDA OF THE IBC GENERAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC GENERAL CODE DEVELOPMENT COMMITTEE.

Proponent: Guy McMann, MCP, Jefferson County Colorado, representing Colorado Association of Plumbing and Mechanical Officials (CAPMO) (gmcmann@jeffco.us)

Revise as follows:

406.6.2 Ventilation. ~~A mechanical ventilation system shall be provided~~ Enclosed parking garages shall be ventilated in accordance with the *International Mechanical Code*.

406.8.2 Ventilation. Repair garages shall be ~~mechanically~~ ventilated in accordance with the *International Mechanical Code*. ~~The ventilation system shall be controlled at the entrance to the garage.~~

Reason: The mechanical code does not prohibit natural ventilation in all cases in parking garages and repair garages. It's not up to the IBC to determine that a mechanical ventilation system is warranted in all cases. Likewise, it's up to the designer to determine where the controls are to be located for a mechanical as there is no technical justification to locate the controls at the garage entrance. There may be many entrances.

Cost Impact: The proposed changes will not increase the cost of construction.

G64-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

406.6.2-G-MCMANN

G65 – 12

407.2.5 (NEW)

Proponent: Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee (CTC)

Add new text as follows:

407.2.5 Cooking facilities. In Group I-2 nursing homes, rooms or spaces that contain domestic cooking facilities shall be permitted to be open to the corridor where the number of sleeping units within the smoke compartment is limited to 30 residents and all of the following requirements are met:

1. Only one area with domestic cooking facilities is permitted within a smoke compartment.
2. The types of cooking appliances are limited to ovens, cooktops, ranges, warmers and microwaves.
3. The corridor is a clearly identified space delineated by construction or floor pattern, material or color.
4. The space containing domestic cooking facilities shall be arranged so as not to obstruct access to the required exit.
5. A domestic cooking hood installed and constructed in accordance with Section 505 of the International Mechanical Code is provided over cooktops and ranges.
6. The domestic cooking hood provided over the cooktop or range shall be equipped with an automatic fire-extinguishing system of a type recognized for protection of domestic cooking equipment. Pre-engineered automatic extinguishing systems shall be tested in accordance with UL 300A and listed and labeled for the intended application. The system shall be installed in accordance with this code, its listing and the manufacturer's instructions.
7. A manual actuation device for the hood suppression system shall be installed in accordance with Section 904.11.1 and 904.11.2 of the International Fire Code.
8. A shutdown for the fuel and electrical power supply to the cooking equipment shall be provided and shall be accessible only to staff.
9. A portable fire extinguisher shall be installed within 30 feet (9144 mm) of domestic cooking appliances complying with Section 906.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

As nursing homes move away from institutional models, it is critical to have a functioning kitchen that can serve as the hearth of the home. Instead of a large centralized, institutional kitchen where all meals are prepared and delivered to a central dining room or the resident's room, the new "household model" nursing home uses de-centralized kitchens and small dining areas to create the feeling and focus of home. For persons with dementia, it is particularly important to have spaces that look familiar, like the kitchen in their former home, to increase their understanding and ability to function at their highest level.

Allowing kitchens, that serve a small, defined group of residents, to be open to common spaces, and in some instances corridors, are critically important to enhancing the feeling and memories of home for older adults. This allows residents to see and smell the food being prepared, which can enhance their appetites and evoke positive memories. Some residents, based on their abilities and cognition level may even be able to participate in food preparation activities such as stirring, measuring ingredients, peeling vegetables, or folding towels. This becomes a social activity, where they can easily converse with the staff member cooking, as well as a way for the resident to maintain their functional abilities and to feel that they are still an important contributing member of society.

We know that unattended cooking equipment is the leading cause of fires. However, allowing the kitchen to be open also allows the nursing home staff to more carefully supervise the space so that if an incident were to occur, it would be spotted and dealt with faster than if the kitchen was completely behind closed doors. Health care facilities have the benefit of having awake-staff 24 hours a day. These staff members know the building layout and the residents well, and are trained to handle emergencies. The locked fuel shut-off switch will prevent cooking activities occurring without staff knowledge.

Moreover, studies have shown that a single low-flow residential sprinkler head is effective "to control both [a] cooking oil fire and [an] appliance fire, despite shielding by the cabinets, while extinguishing the fire spread to the cabinets and walls." [ref: NIST special publication 1066: Residential kitchen fire suppression research needs, Madrzykowski, Hamins & Mehta, Feb. 2007] As all nursing homes are already required to have quick-response sprinklers throughout, we believe that more than adequate safety is being provided when preparing food up to 16 residents, and by adding the automatic chemical suppression in the hood, we are also

providing more than adequate safety for up to 30 residents. The volume of meals prepared in both of these cases are much more similar to a single-family home rather than a commercial restaurant setting.

The fire safety record for nursing homes is one of the lowest of any occupancy in the United States based on NFPA fire data. The number of fire deaths from multiple death fires has averaged 1.7 deaths/year for the last 20 years. The number of single fire deaths in nursing averages 3-5 deaths/ year. The population of nursing homes is 1.7 million. Compared to the number of residents 65 or over living in residential occupancies (32 million) and the number of fire deaths/year of this population, **a resident over 65 in a nursing home is 12 times less likely to die in a fire than a resident over 65 living in a private residential occupancy.**

All new nursing homes have been required to be sprinklered since 2003, and currently 95% of all existing nursing homes are sprinklered. All existing nursing homes are required by federal regulations to be fully sprinklered by August 13, 2013. **There has never been a multiple death fire in a fully sprinklered nursing home** based on 15 years of NFPA fire data. A review of nursing home fire data from 1970 (41 years) not a single multiple death nursing home fire resulted from a fire originating in a kitchen. The majority of single death fires are the result of a resident smoking while on oxygen or the ignition of their clothing or bedding from smoking material. We could find no fire data of any resident of a nursing home, single or multiple death fire, dying from a fire that originated in a kitchen.

In nursing home occupancies, the strategy is to defend in place, taking advantage of the smoke compartments to move residents away from smoke and fire. The smaller size of the household units that would contain these open kitchens, rather than the larger institutional style nursing homes many of us know, means that evacuations to an adjacent compartment or to the exterior is faster and the smaller size of any one of these units limits the number of people at risk.

An additional safety feature, in this proposal, is the inclusion of a deactivation switch that is locked and only accessible to staff. This will prevent unauthorized use of the cooking appliance without staff supervision. Staff members would need to be trained not only in basic food handling precautions but also in basic fire safety and extinguisher use. A fire extinguisher would be required in each kitchen area in addition to the suppression required in the hood and the sprinklers in the facility. These are all additional levels of safety that are being added to this application and will help to protect the residents.

The choice of thirty or fewer residents as the limiting number of residents that could be housed within a single unit with an open kitchen was based on a requirement from the Veterans Administration to serve the needs in their facilities, as well as current trends in the design of these types of facilities. These small nursing homes or nursing home "household" units generally range in size from 10 to 30 residents. The committee that drafted this proposal included providers, industry representatives, code and design professionals who are familiar with this design model and its operation. This group's conclusion was that 30 residents allowed this open kitchen application for the overwhelming majority of facilities in the industry because staffing for thirty is widely considered an economical staffing ratio for the majority of organizations. Yet the designs for this number are still relatively small in size. These designs range from around 6,000 square feet for the smallest 10 person units to around 17,000 square feet even for units housing as many as 30. In general, at these unit sizes, the distances to exits, either to the exterior or to other compartments is much shorter than commonly seen in traditional nursing homes. This committee felt that in combining the added safety features proposed along with the improved evacuation distances and reduced number of people at risk, the limitation of 30 people maintained good safety, yet met the needs of a majority of the industry.

If this proposal is approved, there will be a reference in Table 906.1 for fire extinguishers.



Example of Kitchen open to Corridor.



Example of shutdown

Cost Impact: This code change proposal will not increase the cost of construction. Reduction

G65-12

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

407.2.5#1-G-BALDASSARRA-CTC

G66 – 12

407.2.5 (NEW)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC GENERAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC GENERAL CODE DEVELOPMENT COMMITTEE.

Proponent: Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee (CTC)

Add new text as follows:

407.2.5 Nursing home housing units. In Group I-2 nursing homes, within areas where nursing home residents are housed, shared living spaces, group meeting or multipurpose therapeutic spaces shall be permitted to be open to the *corridor*, where all of the following criteria are met:

1. The walls and ceilings of the space are constructed as required for *corridors*.
2. The spaces are not occupied as resident sleeping rooms, treatment rooms, incidental uses in accordance with Section 509, or hazardous uses.
3. The open space is protected by an automatic fire detection system installed in accordance with Section 907.
4. The *corridors* onto which the spaces open, in the same *smoke compartment*, are protected by an automatic fire detection system installed in accordance with Section 907, or the *smoke compartment* in which the spaces are located is equipped throughout with quick-response sprinklers in accordance with Section 903.3.2.
5. The space is arranged so as not to obstruct access to the required *exits*.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

In nursing home occupancies, residents are encouraged to spend time outside of their rooms. Wayfinding and orientation problems are common in nursing homes residents, and research has shown that direct visibility to a desired location is more effective for cuing than signage. Therefore, having a variety of shared living spaces open to the corridor encourages socialization, encourages interaction, and is important to resident well-being. Further, being able to preview activities that are occurring helps to encourage joining and allows reluctant participants to join at their own pace. Finally, a more open plan allows staff to more easily see residents throughout the course of the day.

Adhoc Health has a proposal to limit storage to containers with 10 cubic feet or greater in Table 509. This would address the issue of storage within areas open to the corridor.



Example of Living room



Example of Dining Room

Cost Impact: The proposed changes will not increase the cost of construction. There will be a reduction in cost.

G66-12

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

407#2-G-BALDASSARRA-CTC

G67 – 12

407.3

Proponent: Sarah A. Rice, C.B.O., The Preview Group (srice@preview-group.com)

Revise as follows:

407.3 Corridor wall construction. *Corridor* walls shall be constructed as smoke partitions in accordance with Section 710.

Exception. Corridor walls in suites.

Reason: Over the past several cycles, the IBC has evolved to regulate the design of Group I-2 occupancies (hospitals and nursing care on a 24 hour basis) in a manner consistent with the regulations required by the Centers for Medicare & Medicaid Services (CMS) and The Joint Commission for accreditation (NFPA 101-2000; Life Safety Code). One of the biggest healthcare design features added in recent years is the concept of “care suites.” By definition in IBC Section 202, a “care suite” is “A group of treatment rooms, care recipient sleeping rooms and their associated support rooms or spaces and circulation space within Group I-2 occupancies where staff are in attendance for supervision of all care recipients within the suite, and the suite is in compliance with the requirements of Section 407.4.3.” Typical care suites are those where the patients need close supervision and monitoring, and include ICU areas. Because of the heightened awareness in the care suite with 24-hour supervision, some of the typical fire protection features are allowed to be omitted. While there is a lot of interpretation in regard to how corridors walls in a care suites are to be constructed, this code change seeks to make it clear that when there are corridors in a care suite they are not required to be smoke partitions, and that the doors in those walls are not required to meet limit the transfer of smoke or be positive latching.

Cost Impact: The proposed changes will not increase the cost of construction.

G67-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

407.3-G-RICE

G68 – 12

202, 407.4, 422.3.1 (NEW)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Healthcare and Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee (CTC)

Revise as follows:

407.4 Means of egress. Group I-2 occupancies shall be provided with means of egress complying with Chapter 10 and Sections 407.4.1 through 407.4.3. The fire safety and evacuation plans provided in accordance with Section 1001.4 shall identify the building components necessary to support a defend in place emergency response in accordance with IFC Sections 404 and 408.

422.3.1 Means of egress. Where ambulatory care facilities require smoke compartmentation in accordance with Section 422.3 the fire safety evacuation plans provided in accordance with Section 1001.4 shall identify the building components necessary to support a defend in place emergency response in accordance with IFC Sections 404 and 408.

Add new definition to Chapter 2 as follows:

DEFEND IN PLACE. A method of emergency response that engages building components and trained staff to provide occupant safety during an emergency. Emergency response involves remaining in place, relocating within the building, or both, without evacuating the building.

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

This code change defines a commonly used concept with a broadly accepted term for use with Group I-2 and identifies several instances where the defend in place concept should be permitted and recognized.

Defend in place, or protect in place, is a concept that has long been employed as the preferred method of fire response in hospitals due to the fragile nature of the occupants. Occupants in this setting are often dependent upon the building infrastructure and immediate evacuation would place their lives at risk. This infrastructure typically includes life support systems such as medical gases, emergency power, and environmental controls that rely on continued building operation. Previous versions of this code and legacy codes have created a tried and tested set of requirements to support this concept, such as smoke compartmentation and areas of refuge. However, previous codes have not specifically described the concept of occupants remaining within a building during a fire emergency which leads to confusion and misapplication during design and enforcement.

This change identifies Group I-2 as a location where this type of emergency response is permitted. The codes governing hospitals, nursing homes, and other Group I-2 classes are designed to support the defend in place use. While the code has been silent on the underlying concept, the defend in place strategy has been the commonly accepted practice in these facilities. When the new Ambulatory Care Facilities section was being drafted, the goal was to create a type of defend in place. Defend in place is only appropriate when smoke compartments are created, therefore the allowance to use this strategy is predicated on the smoke compartmentation section.

A proposal is being submitted to the IFC to clarify further the defend in place concept in Section 404 and 408. [Should we place draft IFC proposal here]

Cost Impact: This proposal will not increase the cost of construction; the healthcare industry already has this documentation and information on file for compliance with state licensing and federal certification standards.

G68-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

407.4-G-Williams-Adhoc

G69 – 12

407.4.1

Proponent: Paul Armstrong, City of El Monte, representing Orange Empire Code Committee
(paul@jaspacific.com)

Revise as follows:

407.4.1 Direct access to a corridor. Habitable rooms in Group I-2 occupancies shall have an *exit access door* leading directly to a *corridor*.

Exceptions:

1. Rooms or care suites with *exit* doors opening directly to the outside at ground level.
2. Rooms arranged as *care suites* complying with Section 407.4.3

Reason: There are many single story hospitals where an exit door serves the suite and a corridor is not necessary.

Cost Impact: There is no increase in cost of construction due to this revision.

G69-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

407.4.1-G-ARMSTRONG

G70 – 12

202, 407.4.2, 407.4.3.3, 407.4.3.4, 407.4.3.5, 407.4.3.5.1, 407.4.3.5.3

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care

Revise as follows:

CARE SUITE. ~~In Group I-2 occupancies, a group of treatment rooms, care recipient sleeping rooms and their associated~~ the support rooms or spaces and circulation space within the suite ~~Group I-2 occupancies where staff are in attendance for supervision of all care recipients within the suite, and the suite is in compliance with the requirements of Section 407.4.3.~~

Revise as follows:

407.4.2 Travel distance. The travel distance between any point in a Group I-2 occupancy sleeping room, not located in a care suite, and an *exit access* door in that room shall be not greater than 50 feet (15 240 mm).

407.4.3 Group I-2 care suites. *Care suites* in Group I-2 shall comply with Section 407.4.3.1 through 407.4.3.4 and either Section 407.4.3.5 or 407.4.3.6.

407.4.3.1 Exit access through care suites. *Exit access* from all other portions of a building not classified as a *care suite* shall not pass through a *care suite*. In a *care suite* required to have more than one *exit*, one *exit access* is permitted to pass through an adjacent *care suite* provided all of the other requirements of Sections 407.4 and 1014.2 are satisfied.

407.4.3.2 Separation. *Care suites* shall be separated from other portions of the building by a smoke partition complying with Section 710.

~~**407.4.3.3 One intervening room.** For rooms other than sleeping rooms located within a *care suite*, *exit access* travel from the *care suite* shall be permitted through one intervening room where the travel distance to the *exit access* door from the *care suite* is not greater than 100 feet (30 480 mm).~~

407.4.3.3 Access to Corridor. Movement from habitable rooms shall not require passage through no more than 3 doors and 100 feet (30 480 mm) travel distance within the suite.

Exception: The travel distance shall be permitted to be increased to 125 feet (38 100 mm) where an automatic smoke detection system is provided throughout the *care suite* and installed in accordance with NFPA 72.

~~**407.4.3.4 Two intervening rooms.** For rooms other than sleeping rooms located within a *care suite*, *exit access* travel within the *care suite* shall be permitted through two intervening rooms where the travel distance to the *exit access* door from the *care suite* is not greater than 50 feet (15 240 mm).~~

~~**407.4.3.5**~~ **407.4.3.4 Care suites containing sleeping room areas.** Sleeping rooms shall be permitted to be grouped into *care suites* ~~with one intervening room~~ if one of the following conditions is met:

1. ~~The intervening room within the *care suite*~~ is not used as an *exit access* for more than eight care recipient beds.
2. The arrangement of the *care suite* allows for direct and constant visual supervision into the sleeping rooms by care providers.

3. An automatic smoke detection system is provided in the sleeping rooms and installed in accordance with NFPA 72.

407.4.3.5.1 407.4.3.4.1 Area. *Care suites* containing sleeping rooms shall be not greater than 5,000 7,500 square feet (465 696 m²) in area.

Exception: *Care suites* containing sleeping rooms shall be permitted to be not greater than 10,000 sq feet (929 m²) in area where automatic smoke detection system is provided throughout the *care suite* and installed in accordance with NFPA 72.

407.4.3.5.2 407.4.3.4.2 Exit access. Any sleeping room, or any *care suite* that contains sleeping rooms, of more than 1,000 square feet (93 m²) shall have no fewer than two *exit access* doors from the *care suite* located in accordance with Section 1015.2.

407.4.3.5.3 Travel distance. The travel distance between any point in a *care suite* containing sleeping rooms and an *exit access* door from that *care suite* shall be not greater than 100 feet (30 480 mm).

Reason: Reason: This proposal is submitted by the ICC Ad Hoc Committee on Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

In relation to the code change proposal dealing with size and configuration of care suites, the definition is being proposed with changes to address the scope of which the suites are used. Suites are recognized to be an effective tool to provide some flexibility in reaching an exit access, due to functional considerations. Use of suites is a particularly useful tool at Intensive Care Units and Emergency Departments in patient treatment areas. The ability to have full visual wall systems that have a breakaway function is extremely beneficial during any type of emergency situation, including defend-in-place, evacuation as well as day-to-day care. These systems allow for observation while providing a level of privacy for the patient. These systems are also flexible enough to handle multiple levels of acuity in the same space.

It is not the intent to broaden the definition so widely as to effectively eliminate the use of corridors as exit access. This change attempts to clarify that associated support spaces of care suites, such as pharmacies, laboratories, linen rooms and storage rooms which are not located within the care suite are not required to be classified as care suites.

The proposal relaxes several requirements due to providing additional fire protection features and clarifies code intent on requirements. The 5,000 square ft limitation for care suites was in legacy building codes before sprinkler protection was required in Group I-2 occupancies. Sprinkler protection provides additional life safety to building occupants which justifies the care suite containing sleeping rooms area increase to 7,500 square ft. Providing an automatic smoke detection system throughout a care suite containing sleeping rooms or constant staff supervision into the sleeping rooms further justifies increasing the area to 10,000 square ft.

The proposal also removes the intervening room from the travel distance requirements as an intervening room is difficult to define and conflicts with industry practice for design of certain units. For example does a pair of "cross corridor" doors within a suite constitute an intervening room? A provision was added to limit the number of doors required for a patient sleeping bed to reach the exit access corridor which addresses concerns regarding patient evacuation of the suite. Current requirements make it difficult to plan the sleeping portion of the suite in under 5,000 square feet, primarily because of the required size of the patient sleeping room. In the past, a sixteen bed area could get under the space requirement, with support spaces such as clean and soiled utilities falling outside that portion of the suite. However, the Intensive Care Unit programming data supports the need for the basic patient room / staff space elements of the program can be accommodated in under 7,500 square feet, but not less than 5,000 square feet. In order to properly staff a unit, the need for unobstructed view from a nurses station to a patient room is needed. This cannot be done with the barrier to form a suite down the middle of the unit, and therefore the staff area. The proposed change enables removal of that barrier while optimizing operational efficiency of the unit, including the fire safety watch of the unit by staff.

To achieve a 7,500 square foot suite, the program becomes very limited to the spaces that are involved in the direct care of the patient, as demonstrated on the Intensive care Suite program developed for this proposal (see the "IntensiveCareUnit-7500" tab in the noted programming file). Key spaces such as the break room and utility spaces are outside of the suite, which is workable from an operational standpoint, but not ideal. Key spaces such as staff support and utility spaces are outside of the suite. Increasing to 10,000 square feet allows inclusion of staff more staff and support spaces within the suite. Operationally, this is a key factor because the staff will not need to leave the suite on their break time, when retrieving supplies, or to access the staff toilet because it improves the response time of the staff during a medical emergency, or a fire / safety situation.

The proposal clarifies the 50 ft travel distance limitation from a patient sleeping room to an exit access door does not apply in care suites. The provision of crossing through three doors is also being introduced to help clarify what is now called out as 'intervening spaces.' Use of three doors is much clearer to a reviewer and designer, rather than defining what is an intervening space on a project-by-project basis.

The proposal also permits smoke detection to be provided in sleeping rooms of care suites where direct supervision of patients by staff is not possible. Smoke detection in the patient room provides equivalent early detection of a fire. The proposal attempts to maintain the level of life safety in care suites while providing more options to health care design professionals to facilitate excellent patient experience and treatment.

The travel distance provisions in care suites with sleeping rooms was increased to 125 ft to reach an exit access corridor based on the additional level of protection provided by direct and constant supervision into sleeping rooms by care providers or complete smoke detection throughout the suite as well as limiting the number of doors permitted for a patient sleeping bed to reach the exit access corridor.

This committee also has a correlative change to IFC with proposed language in IBC 407.8 and 907.2.6.2 coordinates with the proposed language automatic smoke detection system requirements in IBC 407.4.3.

Refer to attached "ICC_AHCHC Programming_10-10-2011.xlsx" for programming data as it relates to Intensive Care Units. This program is based on the noted version of the AIA or FGI Guidelines for Planning of Healthcare Facilities, for the support of the 7,500 square foot increases as noted above. A copy of the programming document can be found at www.iccsafe.org.

Cost Impact: The proposed changes will not increase the cost of construction.

G70-12/13

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

407.4.2-G-Williams-Adhoc

G71 – 12

PART I – IBC MEANS OF EGRESS

407.4.2, 407.4.3.3, 407.4.3.4, 407.4.3.5, 407.5, 408.6.1, 408.8.1, 422.3,

PART II – IFC

906.2, Table 906.3(1), Table 906.3(2), 907.2.6, 907.2.10.1 (IBC [F] 906.2, Table 906.3(1), Table 906.3(2), 907.2.6, 907.2.10.1)

PART III – IPC

403.3, 403.3.4, 403.5 (IBC [P] 2902.3.2, 2902.3.3, 2902.5)

Proponent: Philip Brazil, PE, Reid Middleton, Inc., representing Washington Association of Building Officials, Technical Code Development (pbrazil@reidmiddleton.com)

THIS IS A 3 PART PROPOSAL AND ALL THREE PARTS ARE ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

PART I – IBC MEANS OF EGRESS

Revise as follows:

407.4.2 ~~Travel distance~~ Distance of travel. The ~~travel~~ distance of travel between any point in a Group I-2 occupancy sleeping room and an *exit access* door in that room shall be not greater than 50 feet (15 240 mm).

407.4.3.3 One intervening room. For rooms other than sleeping rooms located within a *care suite*, *exit access* travel from the *care suite* shall be permitted through one intervening room where the ~~travel~~ distance of travel to the *exit access* door from the *care suite* is not greater than 100 feet (30 480 mm).

407.4.3.4 Two intervening rooms. For rooms other than sleeping rooms located within a *care suite*, *exit access* travel within the *care suite* shall be permitted through two intervening rooms where the ~~travel~~ distance of travel to the *exit access* door from the *care suite* is not greater than 50 feet (15 240 mm).

407.4.3.5.3 ~~Travel distance~~ Distance of travel. The ~~travel~~ distance of travel between any point in a *care suite* containing sleeping rooms and an *exit access* door from that *care suite* shall be not greater than 100 feet (30 480 mm).

407.5 Smoke barriers. *Smoke barriers* shall be provided to subdivide every *story* used by persons receiving care, treatment or sleeping and to divide other *stories* with an *occupant load* of 50 or more persons, into no fewer than two *smoke compartments*. Such *stories* shall be divided into *smoke compartments* with an area of not more than 22,500 square feet (2092 m²) and the ~~travel~~ distance of travel from any point in a *smoke compartment* to a *smoke barrier* door shall be not greater than 200 feet (60 960 mm). The *smoke barrier* shall be in accordance with Section 709.

408.6.1 Smoke compartments. The number of residents in any *smoke compartment* shall be not more than 200. The ~~travel~~ distance of travel to a door in a *smoke barrier* from any room door required as *exit access* shall be not greater than 150 feet (45 720 mm). The ~~travel~~ distance of travel to a door in a *smoke barrier* from any point in a room shall be not greater than 200 feet (60 960 mm).

408.8.1 Occupancy Conditions 3 and 4. Each sleeping area in Occupancy Conditions 3 and 4 shall be separated from the adjacent common spaces by a smoke-tight partition where the ~~travel~~ distance of travel from the sleeping area through the common space to the *corridor* exceeds 50 feet (15 240 mm).

422.3 Smoke compartments. Where the aggregate area of one or more *ambulatory care facilities* is greater than 10,000 square feet (929 m²) on one *story*, the *story* shall be provided with a *smoke barrier* to

subdivide the *story* into no fewer than two *smoke compartments*. The area of any one such *smoke compartment* shall be not greater than 22,500 square feet (2092 m²). The ~~travel~~ distance of travel from any point in a *smoke compartment* to a *smoke barrier* door shall be not greater than 200 feet (60 960 mm). The *smoke barrier* shall be installed in accordance with Section 709 with the exception that *smoke barriers* shall be continuous from outside wall to an outside wall, a floor to a floor, or from a *smoke barrier* to a *smoke barrier* or a combination thereof.

PART II – IFC

Revise as follows:

IFC 906.2 (IBC [F] 906.2) General requirements. Portable fire extinguishers shall be selected and installed in accordance with this section and NFPA 10.

Exceptions:

1. The ~~travel~~ distance of travel to reach an extinguisher shall not apply to the spectator seating portions of Group A-5 occupancies.
2. In Group I-3, portable fire extinguishers shall be permitted to be located at staff locations.

**TABLE 906.3(1) [IBC [F] TABLE 906.3(1)]
FIRE EXTINGUISHERS FOR CLASS A FIRE HAZARDS**

	LIGHT (low) HAZARD OCCUPANCY	ORDINARY (moderate) HAZARD OCCUPANCY	EXTRA (high) HAZARD OCCUPANCY
Minimum Rated Single Extinguisher	2-A ^c	2-A	4-A ^a
Maximum Floor Area per Unit of A	3,000 square feet	1,500 square feet	1,000 square feet
Maximum Floor Area for Extinguisher ^b	11,250 square feet	11,250 square feet	11,250 square feet
Maximum Travel Distance of <u>Travel</u> to Extinguisher	75 feet	75 feet	75 feet

(Portions to table not shown remain unchanged)

**TABLE 906.3(2) [IBC [F] TABLE 906.3(2)]
FIRE EXTINGUISHERS FOR FLAMMABLE OR COMBUSTIBLE LIQUIDS
WITH DEPTHS LESS THAN OR EQUAL TO 0.25 INCH**

TYPE OF HAZARD	BASIC MINIMUM EXTINGUISHER RATING	MAXIMUM TRAVEL DISTANCE OF <u>TRAVEL</u> TO EXTINGUISHERS (feet)
Light (Low)	5-B	30
	10-B	50
Ordinary (Moderate)	10-B	30
	20-B	50
Extra (High)	40-B	30
	80-B	50

(Portions to table not shown remain unchanged)

907.2.6 (IBC [F] 907.2.6) Group I. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group I occupancies. An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be provided in accordance with Sections 907.2.6.1, 907.2.6.2 and 907.2.6.3.3.

Exceptions:

1. Manual fire alarm boxes in sleeping units of Group I-1 and I-2 occupancies shall not be required at *exits* if located at all care providers' control stations or other constantly attended staff locations, provided such stations are visible and continuously accessible and that ~~travel~~ the distances of travel required in Section 907.4.2.1 are not exceeded.
2. Occupant notification systems are not required to be activated where private mode signaling installed in accordance with NFPA 72 is *approved* by the fire code official.

907.2.10.1 (IBC [F] 907.2.10.1) Manual fire alarm system. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group R-4 occupancies.

Exceptions:

1. A manual fire alarm system is not required in buildings not more than two *stories* in height where all individual *sleeping units* and contiguous *attic* and crawl spaces to those units are separated from each other and public or common areas by at least 1-hour *fire partitions* and each individual *sleeping unit* has an *exit* directly to a *public way, egress court or yard*.
2. Manual fire alarm boxes are not required throughout the building when the following conditions are met:
 - 2.1. The building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2;
 - 2.2. The notification appliances will activate upon sprinkler waterflow; and
 - 2.3. At least one manual fire alarm box is installed at an *approved* location.
3. Manual fire alarm boxes in resident or patient sleeping areas shall not be required at *exits* where located at all nurses' control stations or other constantly attended staff locations, provided such stations are visible and continuously accessible and that ~~travel~~ the distances of travel required in Section 907.4.2.1 are not exceeded.

PART III – IPC

Revise as follows:

403.3 (IBC [P] 2902.3.2) Location of toilet facilities in occupancies other than malls. In occupancies other than covered and open mall buildings, the required *public* and employee toilet facilities shall be located not more than one story above or below the space required to be provided with toilet facilities, and the path of travel to such facilities shall not exceed a distance of 500 feet (152 m).

Exception: The location and maximum ~~travel~~ distances of travel to required employee facilities in factory and industrial occupancies are permitted to exceed that required by this section, provided that the location and maximum ~~travel~~ distance of travel are *approved*.

403.3.4 (IBC [P] 2902.3.3) Location of toilet facilities in malls. In covered and open mall buildings, the required *public* and employee toilet facilities shall be located not more than one story above or below the space required to be provided with toilet facilities, and the path of travel to such facilities shall not exceed a distance of 300 feet (91 440 mm). In mall buildings, the required facilities shall be based on total square footage within a covered mall building or within the perimeter line of an open mall building, and facilities shall be installed in each individual store or in a central toilet area located in accordance with this section. The maximum ~~travel~~ distance of travel to central toilet facilities in mall buildings shall be measured from the main entrance of any store or tenant space. In mall buildings, where employees' toilet facilities are not provided in the individual store, the maximum ~~travel~~ distance of travel shall be measured from the employees' work area of the store or tenant space.

403.5 (IBC [P] 2902.5) Drinking fountain location. Drinking fountains shall not be required to be located in individual tenant spaces provided that public drinking fountains are located within a ~~travel~~ distance of

travel of 500 feet of the most remote location in the tenant space and not more than one story above or below the tenant space. Where the tenant space is in a covered or open mall, such distance shall not exceed 300 feet. Drinking fountains shall be located on an accessible route.

Reason: The change from “travel distance” to “distance of travel” more clearly distinguishes between “exit access travel distance” as specified in Section 1016 and a travel distance that is other than an exit access travel distance for which the provisions of Section 1016 do not apply. Note that Section 1016.3 specifies the measurement of exit access travel distance as being from “the most remote point within a story along the natural and unobstructed path of horizontal and vertical egress travel to the entrance to an exit,” except for open parking garages and outdoor facilities with open access components where it is measured as specified therein. The sections in this proposal, however, specify the measurement of travel distance between points within the exit access (i.e., to an exit access door in Sections 407.4.2, 407.4.3.3, 407.4.3.4 and 407.4.3.5.3; to a smoke barrier door in Sections 407.5, 408.6.1 and 422.3; to an extinguisher in Section 906.2 and Tables 906.3(1) and 906.3(2); etc.).

Changing from “travel distance” to “distance of travel” in these cases is considered to be clarifying and does not change the meaning or the intent of the language. The changes will also be consistent with “distance of travel” in 2012 IBC Sections 402.8.3, 402.8.5 and 415.10.3.3. The other change in Section 2902.5 is grammatical. Based on our analysis of the 2012 IBC, all instances of “travel distance” in the 2012 IBC where a change to “distance of travel” is warranted are included in this proposal.

Cost Impact: The code change proposal will not increase the cost of construction.

G71-12

PART I – IBC MEANS OF EGRESS

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – IFC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART III – IPC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

407.4.2-G-BRAZIL

G72 – 12

407.4.3, 407.4.3.5 (NEW)

Proponent: John Woestman, Kellen Company, representing Builders Hardware Manufacturers Association (BHMA)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Revise as follows:

407.4.3 Group I-2 care suites. *Care suites* in Group I-2 shall comply with Section 407.4.3.1 through ~~407.4.3.4~~ 407.4.3.5 and either Section ~~407.4.3.5~~ 407.4.3.6 or ~~407.4.3.6~~ 407.4.3.7.

407.4.3.5 Doors within care suites. Doors within care suites serving habitable rooms shall be permitted to comply with one of the following:

1. Manually operated horizontal sliding doors permitted in accordance with Exception 9 to Section 1008.1.2.
2. Power-operated doors permitted in accordance with Exception 7 to Section 1008.1.2.
3. Means of egress doors complying with Section 1008.

(Renumber subsequent sections)

Reason: This code proposal is intended to help improve the code by identifying what is permitted for doors installed within Group I-2 care suites.

Within care suites, patient rooms and treatment rooms are generally not required by the IBC to have doors. However, for clinical needs (infection control, privacy, confidentiality, etc.), doors are commonly required within care suites to patient rooms or treatment rooms.

BHMA members are experiencing varying interpretations and code enforcement actions for the doors installed within Group I-2 care suites. The IBC may be considered less than explicitly clear as to what is specifically required, or allowed, for doors installed within Group I-2 care suites.

We realize, from a technical perspective, this proposed language does not add new requirements to the code.

We also realize a user of the IBC could determine what is required and what is not required – and, by default, what is allowed – for doors installed within I-2 care suites. Examples: a door installed in a fire-resistance rated wall would need to be fire-resistance rated (however, doors within I-2 care suites are rarely required to be fire-resistance rated). Similar for smoke partitions. Most doors and doorways in I-2 care suites need to meet egress and accessibility requirements, which is usually a non-issue as these doors and doorways are configured for patient movement by wheelchair and hospital bed.

Unfortunately, BHMA members are experiencing differences in interpretation and application of the code (example: not approving manually operated horizontal sliding doors serving patient sleeping rooms in a care suite) making it difficult to confidently assist building owners, architects, contractors, and other stakeholders with their projects.

With this proposal, we're attempting to provide appropriate guidance as to what is permitted for doors installed within Group I-2 care suites.

Cost Impact: The proposed changes will not increase the cost of construction.

G72-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

407.4.3.7 (NEW)-G-WOESTMAN

G73 – 12

407.4.3 (NEW), 1005.7.1.2; (IFC [B] 1005.7.1.2)

Proponent: Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee (CTC)

Add new text as follows:

407.4.3 Projections in corridors. In Group I-2 nursing homes, where the *corridor* width is a minimum of 96 inches (2440 mm), projections shall be permitted for furniture where all of the following conditions are met:

1. The furniture is attached to the floor or to the wall.
2. The furniture does not reduce the clear width of the *corridor* to less than 72 inches (1830 mm) except where other encroachments are permitted in accordance with Section 1005.7.
3. The furniture is positioned on only one side of the *corridor*.
4. Each arrangement of furniture is 50 square feet (4.6 square meters) maximum in area.
5. Furniture arrangements are separated by 10 feet (3050 mm) minimum.
6. Placement of furniture is considered as part of the fire and safety plans in accordance with Section 1001.4.

Revise as follows:

1005.7.2 (IFC [B] 1005.7.2) Other projections. *Handrail* projections shall be in accordance with the provisions of Section 1012.8. Other nonstructural projections such as trim and similar decorative features shall be permitted to project into the required width a maximum of 1½ inches (38 mm) on each side.

Exception: Projections are permitted in corridors within Group I-2 nursing homes in accordance with Section 407.4.3.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

Many nursing homes have long corridors that residents must traverse. Current interpretation of the IBC precludes the provision of resident seating in nursing home hallways/corridors to assure that egress is unobstructed in the event of an emergency. Residents who are physically unable to traverse the distance without being able to rest periodically have little recourse but use a wheelchair, an outcome counter to maintaining their ambulatory skills. In addition, changes to facility operations in health care facilities no longer require staff to routinely move residents in beds, coupled with the relatively low occupant load in healthcare facilities, makes 8 ft of clear corridor width often unnecessary. The primary substantiation to the proposal is as follows:

1. Furniture appropriately placed at defined intervals along hallways/corridors can promote a resident's ability to maintain his/her highest practical level of functioning and maintain independence. Allowing rest areas (small chairs, benches or grouped seating placed at different points) affords residents the opportunity to walk a distance, rest and then continue independently to their destination, and can enhance resident quality of life and help prevent resident falls and preventable decline in function.
2. In addition to promoting resident independence and mobility, seating placed in hallways/corridors may help to foster social opportunities and create a more homelike environment. Prohibiting such seating areas could diminish opportunities for socialization, and independence. The use of such seating areas will allow resident and staff greater flexibility in choosing safe places to rest.
3. This provision would require that furniture located within the corridor be fixed in place to eliminate the risk that the furniture could be moved into needed egress path. Furniture could be fixed to the floor or wall using a bracket, which would allow removal for maintenance and cleaning purposes.
4. For the fixed furniture, this provision maintains a minimum clear egress width of 6 feet. It also limits the frequency of such furniture groupings so that the 8 ft width is otherwise maintained.
5. This provision also requires that all of the groupings be located to one side of the corridor, so that in an emergency event, the path of travel would be clear on one side of the corridor and zig zagging the corridor would not be required.

Cost Impact: The proposed changes will not increase the cost of construction. There will be a reduction

G73-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

407.4.3-G-BALDASSARRA-CTC

G74 – 12
407.4.3.2

Proponent: Lennon Peake, P.E., Koffel Associates, Inc., representing self (lpeake@koffel.com)

Revise as follows:

407.4.3.2 Separation. *Care suites* shall be separated from other portions of the building, including other care suites, by a smoke partition complying with Section 710.

Reason: The existing language only references that care suites must be separated from other portions of the building and could be interpreted that care suites are not required to be separated from each other. The intent of the proposal is to clarify that care suites must be separated from other care suites by a smoke partition especially since Paragraph 407.4.3.1 permits egress through an adjoining suite.

Cost Impact: There is no cost impact as a result of this proposal as it is intended to clarify existing requirements.

G74-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

407.4.3.2-G-PEAKE

G75 – 12

407.4.3.6.1

Proponent: Lennon Peake, P.E., Koffel Associates, Inc., representing self (lpeake@koffel.com)

Revise as follows:

407.4.3.6.1 Area. *Care suites* of rooms, other than sleeping rooms, shall have an area not greater than ~~10,000~~ 12,000 square feet (~~929~~ 1,161 m²).

Exception: *Care suites* not containing sleeping rooms shall be permitted to be not greater than 15,000 sq feet (1,394 m²) in area where an automatic smoke detection system is provided throughout the *care suite* in accordance with Section 907.

Reason: The 10,000 square ft limitation for care suites not containing sleeping rooms was in Codes before sprinkler protection was required in Group I-2 occupancies. Sprinkler protection provides additional life safety to building occupants which justifies the area increase to 12,500 square ft. Providing an automatic smoke detection system throughout a care suite provides an additional level of life safety which justifies increasing the area to 15,000 sq ft. Sprinkler protection and smoke detection are very effective measures of providing life safety to building occupants address the proposed increase in the area of a care suite not containing sleeping rooms.

Cost Impact: There is not cost impact as a result of this proposal as it allows more options in the design of a suite.

G75-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

407.4.3.6.1-G-PEAKE

G76 – 12

407.5

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Healthcare

Revise as follows:

407.5 Smoke barriers. *Smoke barriers* shall be provided to subdivide every *story* used by persons receiving care, treatment or sleeping and to divide other *stories* with an *occupant load* of 50 or more persons, into no fewer than two *smoke compartments*. Such *stories* shall be divided into *smoke compartments* with an area of not more than 22,500 square feet (2092 m²) in Group I-2 occupancies and not more than 40,000 square feet in Group I-2 hospitals and the travel distance from any point in a *smoke compartment* to a *smoke barrier* door shall be not greater than 200 feet (60 960 mm). The *smoke barrier* shall be in accordance with Section 709.

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>

This code change addresses outdated code material. Historically, smoke compartment size has been driven by the allowable travel distance within the smoke compartment. Past code changes have increased the travel distance without a corresponding change in smoke compartment size. Secondly, the size of the functional patient areas has increased, but the occupant load has remained the same or has been reduced. Therefore, we are asking for an increase in smoke compartment size to accommodate the operational needs of the modern hospital.

A summary of the history of smoke compartment requirements is as a requirement is as follows:

- October 1984 BCMC – Maximum length and width equals 150 feet.
- 1987 BOCA – 610.5 – Maximum length and width equals 150 feet
- 1992 BOCA Supplement – 610.4 – 22,500 square feet, with maximum travel distance of 150 feet.
- Code Change No. B20-95 – 22,500 square feet, with maximum travel distance proposed to be increased to 200 feet.
- 1996 BOCA – 409.4 - 22,500 square feet, with maximum travel distance of 200 feet.
- 2000 IBC – 407.4 - 22,500 square feet, with maximum travel distance of 200 feet.

Originally, there was no limit to smoke compartment size, other what was imposed by travel distance. The 22,500 square foot requirement was based on the old travel distance requirement of 150 feet, and used it to extrapolate an area (150ft x150ft = 22,500 square feet). This proposal uses the same logic and applies the current 200 foot travel distance maximum (200ft x200ft), resulting in a 40,000 square foot smoke compartment. This proposal would maintain the existing requirement that each floor be divided into two smoke compartments. Practically the requirement for 200' travel distance within smoke compartments will still drive smaller smoke compartment sizes in some cases.

Over the past 20 years, there has been a steady increase in the size of patient treatment rooms in hospitals. The primary reason for the increase is the equipment and utilities necessary for the treatment of a patient, such as patient monitoring, gases, and diagnostics equipment, while maintaining space for staff access to the patient. In response, the widely adopted and enforced "*Guidelines for the Design and Construction of Health Care Facilities*" from the FGI Institute have also increased, making these operational considerations actual code requirements. In the case of the inpatient units, the adoption of a single bed in a patient room has had the largest impact on square footage, while not significantly increasing the number of occupants on the unit.

The concept of an "individual patient space" is becoming the standard design in other types throughout the hospital. Many emergency departments are opting for private patient exam spaces with hard walls, primarily for infection control and patient privacy considerations. Similarly, radiology areas are being driven by technology and clearance issues which go beyond the required minimums, and have impacts on square footages to achieve clearances. In some units, there has also been an increase in the types of required support spaces, including ratios of equipment storage per treatment room, the increased importance of computer equipment rooms, and various staff areas. However, support spaces have remained largely the same, while the main increases have been in the size of the patient treatment areas themselves. While these spaces have been increasing in size, the smoke compartment size requirements have been left unchanged in the building codes.

When studying the contemporary sizes of functions such as emergency departments, radiology operations, and bed units, the larger size allows for greater visualization from the staff to the patient, which is a crucial aspect of planning a patient area. This operational consideration could more easily be achieved before the increase in patient areas, but the same operational considerations require an increase to the smoke zone size to match contemporary requirements, delivery of care and technologies. Attached is a study of space programs which compare the 2010 Guideline requirements with the 1996-97 Guidelines. In short, today's hospital takes more square footage to care for the same amount of patients. These programs demonstrate the need to increase to 40,000 square foot smoke compartment. See program analysis at the following link.

<http://www.iccsafe.org/cs/AHC/Pages/WG-General.aspx>

Cost Impact: This proposal will help to decrease the cost of construction. Increasing the compartment size will reduce the number of smoke and fire dampers and lifetime maintenance costs could proportionately decrease.

G76-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

407.5-G-Williams-Adhoc

G77 – 12

IBC 407.9 (NEW), IFC 604.2.1.6 (NEW) [IBC [F] 2702.2.17 (NEW)]

Proponent: Robert W. Jenkins, Chesterfield Fire & EMS, representing self (jenkinsr@chesterfield.gov)

Add new text as follows:

407.9 Emergency power. A minimum of 96-hours of emergency power shall be provided to the essential electrical systems in Group I-2 hospitals and nursing homes. Emergency power shall be connected to the life safety branch and the critical branch defined in NFPA 70, and further defined as emergency power supply systems in Chapter 4 of NFPA 110.

Add new text as follows:

IFC 604.2.16 (IBC [F] 2702.2.17) Group I-2 Occupancies. Emergency power shall be provided in Group I-2 hospitals and nursing homes in accordance with Section 407.9 of the *International Building Code*.

Reason: Group I-2 facilities are defend in place occupancies where occupants are usually not relocated. NFPA 110, Chapter 5 requires 96-hours of fuel supply for a Level 1 EPSS Class X system when located in seismic design category C, D, E or F. Time frames for emergency power supplies need to be adjusted to allow facilities adequate time to maintain fuel supplies to secondary power sources. Our jurisdiction has had a power loss for several days due primarily to hurricane remnants on the east coast, such as hurricane Isabel in 2003. Power was not restored to several areas from as little as five days to a maximum of 30-days.

Cost Impact: The code change proposal will increase the cost of construction. Cost increase will be incurred due to additional fuel storage requirements and/or type of secondary sources.

G77-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

2702.2.17 (NEW)-G-JENKINS.doc

G78 – 12
407.10

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Healthcare

Revise as follows:

SECTION 425
HYBERBARIC FACILITIES

~~407.10~~ **425.1 Hyperbaric facilities.** Hyperbaric facilities in Group I-2 occupancies shall meet the requirements contained in Chapter 20 of NFPA 99.

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and asses' contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>
This code change expands the scope of an existing requirement to include all of the occupancies that have hyperbaric chambers installed.

Hyperbaric chambers are used in multiple occupancy types, not just Group I-2. Most of the typical patients that use these devices are outpatients, and are typically housed in Group B occupancies. As the popularity of these devices increase, *these are showing up in residential settings as well*. This proposal would increase the scope of these requirements to anywhere a hyperbaric chamber is seen.

Cost Impact: This change will increase the cost of construction for facilities that are not currently federally certified.

G78-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

407.9-G-Williams-Adhoc

G79 – 12

407.11 (NEW)

Proponent: Lynn W. Manley, Illinois Department of Public Health - Health Care Facilities and Programs, representing self (lynn.manley@illinois.gov)

Add new text as follows:

407.11 Residential Cooking Appliances. Residential type cooking appliances that include: griddles, stoves, range tops, electric skillets, portable gas fired burners and portable cooking device shall not be permitted in hospitals.

Exceptions:

1. Cooking installations that are approved by all applicable authorities having jurisdiction and that are installed with a commercial cooking hood and protected with a hood suppression system in accordance with Section 904.11 of the International Fire Code shall be permitted. In no case shall any cooking operation be permitted in a space that is open to a corridor.
2. Residential appliances that are provided for training purposes as part of a hospital program shall be permitted under the following conditions:
 - 2.1. A detailed program narrative must be provided and maintained that includes all safety issues, and indicates when and how the appliance may be used for training purposes.
 - 2.2. The appliance must be located within a training room that is separated from other non-related spaces and from corridors by smoke partitions constructed in accordance with Section 710. Such training room shall be separated from any patient sleeping area by a smoke barrier.
 - 2.3. The appliance is used only under direct supervision of trained hospital personnel and shall have safety devices to prevent unauthorized use.
 - 2.4. A kitchen hood suppression system shall not be required.
 - 2.5. A Type K portable fire extinguisher is required in the room within easy reach of the cooking appliance.
3. Microwave ovens, warming plates that are designed for warming and not cooking, ovens and other appliances that do not produce any airborne grease laden vapors shall be permitted in spaces that are separated from corridors by smoke partitions constructed in accordance with Section 710.

Reason: If any staff person or visitor in hospital wants to eat, they can easily go to the vending areas, cafeteria and/or café type food services that are typically available.

Food for patients is prepared and provided in commercial food preparation facilities (catered or prepared on site by trained staff). Patient food service is under the supervisions of a dietician. Most patients would not be permitted to eat anything that was not approved by the dietician.

The history and statistical data for cooking fires in residential construction, for fires in fire departments and for fires in restaurants with or without hood suppression systems is well documented. There are simply too many every year. Hospitals continue to have small fires in microwaves, toasters, etc. and occasionally have a fire in a commercial cooking appliance. The outcome of such events is minimal because of the level of staff training during a fire event, and because any of the real fire hazards are controlled by suppression systems that are maintained in accordance with national standards. Also, fire and smoke migration in hospitals is limited by the extensive compartmentation that is required.

The need to clarify the use of minor warming appliances and to identify use of residential appliances for training purposes is justified. However, there is no justification to allow residential stoves in hospitals, except as indicated above and any proposal to allow cooking appliances in spaces open to corridors goes in the face of the historical evidence that clearly indicates fires will result and loss of life of more than one person would be likely.

This change is proposed as part of the requirements for new hospitals and should result in conditions that are safer or at least no less safe than previous requirements. This proposal recognizes that other code changes may be proposed in this cycle to allow cooking in areas open to corridors and that a code change proposal to separate the requirements from Hospitals from the requirements for Nursing Homes also may be proposed in this cycle. If there is a demand to create exceptions in nursing homes, then the requirements should be justified under a separate section for nursing homes that allows the requirements for hospital and nursing homes to be considered separately.

Cost Impact: There will be no cost impact. The above changes are already implemented in many jurisdictions. The code change is needed for clarification and could reduce costs where jurisdictions have required commercial cooking hoods and suppression in

Hospitals where residential equipment is used for patient rehabilitation and training purposes. We are unaware of any fires that have occurred on residential stoves used only for training purposes.

G79-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

407.11-G-MANLEY

G80 – 12

407.11

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care

Add new text as follows:

407.11 Electrical systems. In Group I-2 occupancies, the essential electrical power for electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of Chapter 27 and NFPA 99.

Add new text as follows:

[F] 2702.2.16 Group I -3 Occupancies. Essential electrical power for Group I-2 occupancies shall be in accordance with Section 407.11.

Reason: Currently emergency power systems are required to comply with NFPA 99 by the Center for Medicare/Medicaid Services (CMS) in order for a facility to receive federal reimbursement funds. Providing the code language requiring compliance with NFPA 99 will ensure the required power system is provided in Group I-2 occupancies. While there is a reference to NFPA 99 in NFPA 70, there is no direct reference. This closes up a gap in the requirements. A reference to Chapter 27 will comprehensively address electrical systems including references to NFPA 70, 110 and 111.

This proposal is submitted by the ICC Ad Hoc Committee on Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx> .

Cost Impact: The proposed changes will not increase the cost of construction.

G80-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

407.11-G-Williams-Adhoc

G81 – 12
408.3.9 (New)

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, (al.godwin@aon.com)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Add new text as follows:

408.3.9 Door penetrations. When cell walls are also the corridor walls, cell doors are permitted to have openings necessary to observe, communicate, feed or otherwise interact with the inmate.

Reason: In the case of maximum security confinement or medical security confinement, with individual cells, an access opening through the door is not uncommon. To require such opening to be protected and/or self closing is not realistic.

Cost Impact: This code change proposal will not increase the cost of construction.

G81-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

408.3.9 (NEW)-G-GODWIN

G82 – 12

408.9

Proponent: Ray Grill, P.E., Arup, representing self (Ray.Grill@arupgp.com)

Revise as follows:

408.9 Windowless buildings. For the purposes of this section, a windowless building or portion of a building is one with nonopenable windows, windows not readily breakable or without windows. To facilitate smoke removal in post-fire salvage and overhaul operations, windowless buildings shall be provided with an engineered smoke control system to provide a tenable environment for exiting from the smoke compartment in the area of fire origin in accordance with Section 909 mechanical ventilation for each windowless smoke compartment in accordance with one of the following:

1. Mechanical air-handling equipment providing one exhaust air change every 15 minutes for the area involved. Return and exhaust air shall be moved directly to the outside without recirculation to other portions of the building.
2. Any other *approved* design that will produce equivalent results.

Reason: The current code language is vague and does not provide practical design criteria. The requirement for ventilation is applicable to areas of a building that cannot be ventilated with windows. Ventilation of products of combustion via windows is typically done during post-fire salvage operations and not to maintain tenable egress conditions.

The proposed criteria is consistent with the code provisions for smoke control of high rise buildings.

Cost Impact: This code change proposal will not increase the cost of construction.

G82-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

408.9-G-GRILL

G83 – 12

410.3.5

Proponent: William E. Koffel, P.E., Koffel Associates, Inc., representing Won-Door Corporation
(wkoffel@koffel.com)

Revise as follows:

410.3.5 Proscenium curtain. Where a proscenium wall is required to have a fire-resistance rating , the stage opening shall be provided with a fire curtain complying with NFPA 80, a horizontal sliding doors having a fire protection rating of at least one hour, or an approved water curtain complying with Section 903.3.1.1 or, in facilities not utilizing the provisions of smoke-protected assembly seating in accordance with Section 1028.6.2, a smoke control system complying with Section 909 or natural ventilation designed to maintain the smoke level at least 6 feet (1829 mm) above the floor of the means of egress

Reason: Horizontal sliding doors can be used to protect proscenium openings without interfering with the operational considerations of the proscenium opening. A horizontal sliding door with a fire protection rating of at least one hour offers a level of protection greater than that provided by a fire curtain which is tested for a fire exposure of 30 minutes and the acceptance criteria does not include either the hose stream (included in the fire test for horizontal sliding doors or temperature rise criteria which is also not included in a fire protection rating).

Cost Impact: The proposed changes will not increase the cost of construction.

G83-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

410.3.5-G-KOFFEL

G84 – 12

410.3.6, 424.2, 3102.3, 3102.3.1, 3102.6.1.1, 3105.4, D102.2.8

Proponent: Marcelo Hirschler GBH International, representing self

Revise as follows:

410.3.6 Scenery. Combustible materials used in sets and scenery shall meet the fire propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701, in accordance with Section 806 and the *International Fire Code*. Foam plastics and materials containing foam plastics shall comply with Section 2603 and the *International Fire Code*.

424.2 Materials. Children's play structures shall be constructed of noncombustible materials or of combustible materials that comply with the following:

1. through 4. (no change)
5. Textiles and films complying with the ~~flame~~ fire propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701.
6. through 7. (no change)
8. Foam plastics shall be covered by a fabric, coating or film meeting the ~~flame~~ fire propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701.
9. (no change)

3102.3 Type of construction. Noncombustible membrane structures shall be classified as Type IIB construction. Noncombustible frame or cable-supported structures covered by an *approved* membrane in accordance with Section 3102.3.1 shall be classified as Type IIB construction. Heavy timber frame-supported structures covered by an *approved* membrane in accordance with Section 3102.3.1 shall be classified as Type IV construction. Other membrane structures shall be classified as Type V construction.

Exception: Plastic less than 30 feet (9144 mm) above any floor used in greenhouses, where occupancy by the general public is not authorized, and for aquaculture pond covers is not required to meet the fire propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701.

3102.3.1 Membrane and interior liner material. Membranes and interior liners shall be either noncombustible as set forth in Section 703.5 or meet the fire propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 and the manufacturer's test protocol.

Exception: Plastic less than 20 mil (0.5 mm) in thickness used in greenhouses, where occupancy by the general public is not authorized, and for aquaculture pond covers is not required to meet the fire propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701.

3102.6.1.1 Membrane. A membrane meeting the fire propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 shall be permitted to be used as the roof or as a skylight on buildings of Types IIB, III, IV and V construction, provided it is not less than 20 feet (6096 mm) above any floor, balcony or gallery.

3105.4 Canopy materials. *Canopies* shall be constructed of a rigid framework with an *approved* covering that meets the fire propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 or has a *flame spread index* not greater than 25 when tested in accordance with ASTM E 84 or UL 723.

D102.2.8 Permanent canopies. Permanent canopies are permitted to extend over adjacent open spaces provided all of the following are met:

1. The canopy and its supports shall be of noncombustible material, *fire-retardant-treated wood*, Type IV construction or of 1-hour fire-resistance-rated construction.

Exception: Any textile covering for the canopy shall meet the fire propagation performance criteria of Test Method 1 or Test Method 2, as appropriate, of NFPA 701 ~~be flame resistant as determined by tests conducted in accordance with NFPA 701~~ after both accelerated water leaching and accelerated weathering.

2. Any canopy covering, other than textiles, shall have a *flame spread index* not greater than 25 when tested in accordance with ASTM E 84 or UL 723 in the form intended for use.
3. The canopy shall have at least one long side open.
4. The maximum horizontal width of the canopy shall not exceed 15 feet (4572 mm).
5. The *fire resistance* of *exterior walls* shall not be reduced.

Reason: There is an additional issue, as discussed below and that addresses the potential for providing misleading test results.

In 1989 the NFPA Technical Committee on Fire Tests eliminated the so-called "small-scale test" from NFPA 701 because the results had been shown not to represent a fire performance that corresponded to what happened in real scale. Instead of the "small-scale test" NFPA 701 now (and for over 20 years) contains two tests (Test 1 and Test 2), which apply to materials as indicated by the text of NFPA 701 (2010) that is shown at the bottom of this proposal.

However, a large number of manufacturers continue stating that the materials or products that they sell have been tested to NFPA 701, when they really mean the pre-1989 small-scale test in NFPA 701. That test no longer exists and materials or products meeting that test do not exhibit acceptable fire performance.

Text of NFPA 701 (2010):

1.1.1.1 Test Method 1 shall apply to fabrics or other materials used in curtains, draperies, or other window treatments. Vinyl-coated fabric blackout linings shall be tested according to Test Method 2.

1.1.1.2 Test Method 1 shall apply to single-layer fabrics and to multilayer curtain and drapery assemblies in which the layers are fastened together by sewing or other means. Vinyl-coated fabric blackout linings shall be tested according to Test Method 2.

1.1.1.3 Test Method 1 shall apply to specimens having an areal density less than or equal to 700 g/m^2 (21 oz/yd^2), except where Test Method 2 is required to be used by 1.1.2.

1.1.2.1 Test Method 2 (flat specimen configuration) shall be used for fabrics, including multilayered fabrics, films, and plastic blinds, with or without reinforcement or backing, with areal densities greater than 700 g/m^2 (21 oz/yd^2).

1.1.2.2 Test Method 2 shall be used for testing vinyl-coated fabric blackout linings and lined draperies using a vinyl-coated fabric blackout lining.

1.1.2.3 Test Method 2 shall be used for testing plastic films, with or without reinforcement or backing, when used for decorative or other purposes inside a building or as temporary or permanent enclosures for buildings under construction.

1.1.2.4 Test Method 2 shall apply to fabrics used in the assembly of awnings, tents, tarps, and similar architectural fabric structures and banners.

Note also the following from the text of NFPA 701 (2010):

1.2* Purpose.

1.2.1 The purpose of Test Methods 1 and 2 shall be to assess the propagation of flame beyond the area exposed to the ignition source.

A.1.1 A small-scale test method appeared in NFPA 701 until the 1989 edition. It was eliminated from the test method because it has been shown that materials that "pass" the test do not necessarily exhibit a fire performance that is acceptable. The test was not reproducible for many types of fabrics and could not predict actual full-scale performance. It should not, therefore, be used.

A.1.1.1 For the purposes of Test Method 1, the terms curtains, draperies, or other types of window treatments, where used, should include, but not be limited to, the following items:

- (1) Window curtains
- (2) Stage or theater curtains
- (3) Vertical folding shades
- (4) Roll-type window shades
- (5) Hospital privacy curtains
- (6) Window draperies
- (7) Fabric shades or blinds
- (8) Polyvinyl chloride blinds
- (9) Horizontal folding shades
- (10) Swags

Examples of textile items other than window treatments to which Test Method 1 applies include:

- (1) Table skirts
- (2) Table linens
- (3) Display booth separators
- (4) Textile wall hangings
- (5) Decorative event tent linings not used in the assembly of a tent

In addition to the clarification of the test criteria of NFPA 701 two additional revisions are proposed as follows:

- Section 424.2 has been revised to use the terminology "fire propagation" versus "flame propagation" to be consistent with all other references to NFPA 701 in the IBC.

- Section D102.2.8 was revised to remove “flame resistant” terminology. Throughout the ICC set of codes, the references to NFPA 701 have been revised to be more precise and address “fire propagation performance criteria of NFPA 701” rather than talk about “flame resistant” or “flame retardant”. NFPA 701 does not measure whether a material or product is “flame resistant” or “flame retardant” but whether it meets its “fire propagation performance criteria”. Apparently I missed this section.

Cost impact: This code change proposal will increase the cost of construction, but only minimally.

G84-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

424.2-G-Hirschler.doc

G85 – 12

202, 410.6.2, 1015.2.1 (IFC [B] 1015.2.1), 1022.7 (IFC [B] 1022.7), 3007.7.1

Proponent: Philip Brazil, PE, Reid Middleton, Inc., representing Washington Association of Building Officials, Technical Code Development (pbrazil@reidmiddleton.com)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Revise as follows:

EXIT ACCESS DOORWAY. A door or access point along the path of egress travel from an occupied room, area or space where the path of egress enters an intervening room, *corridor*, *exit access stairway* or *exit access ramp*.

Revise as follows:

410.6.2 Stairway and ramp enclosure. *Exit access stairways* and *ramps* serving a *stage* or *platform* are not required to be enclosed. *Exit access stairways* and *ramps* serving *technical production areas* are not required to be enclosed.

Revise as follows:

1015.2.1 (IFC [B] 1015.2.1) Two exits or exit access doorways. Where two *exits* or *exit access doorways* are required from any portion of the *exit access*, the *exit* doors or *exit access doorways* shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between *exit* doors or *exit access doorways*. Interlocking or *scissor stairs* shall be counted as one *exit stairway*.

Exceptions:

1. Where *interior exit stairways* or *ramps* are interconnected by a 1-hour fire-resistance-rated *corridor* conforming to the requirements of Section 1018, the required *exit* separation shall be measured along the shortest direct line of travel within the *corridor*.
2. Where a building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2, the separation distance of the *exit* doors or *exit access doorways* shall not be less than one-third of the length of the maximum overall diagonal dimension of the area served.

1022.7 (IFC [B] 1022.7) Interior exit stairway and ramp exterior walls. *Exterior walls* of the *interior exit stairway* and *or ramp* shall comply with the requirements of Section 705 for exterior walls. Where nonrated walls or unprotected openings enclose the exterior of the *stairway* or *ramp* and the walls or openings are exposed by other parts of the building at an angle of less than 180 degrees (3.14 rad), the building *exterior walls* within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening shall have a *fire-resistance rating* of not less than 1 hour. Openings within such *exterior walls* shall be protected by opening protectives having a *fire protection rating* of not less than 3/4 hour. This construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the topmost landing of the *stairway* or *ramp* or to the roof line, whichever is lower.

Revise as follows:

3007.7.1 Access. The fire service access elevator lobby shall have direct access to an enclosure for an *interior exit stairway* or *ramp*.

Reason: The addition of “ramp(s)” is for consistency with “exit access stairway or ramp,” “interior exit stairway or ramp” and “stairway or ramp” throughout the 2012 IBC, where applicable, which was established with the approved changes from Proposal E5-09/10-AS. In the definition of “exit access doorway” in Section 202, the change from “stair” to “stairway” is for consistency with the use of “exit access stairway” for the same reason. In Section 1022.7, the change from “and” to “or” is grammatical. Based on our analysis of the 2012 IBC, there are no other instances of “exit access stairway” or “interior exit stairway” where the addition of “ramp(s)” is warranted.

Cost Impact: The code change proposal will not increase the cost of construction.

G85-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

410.6.2-G-BRAZIL

G86 – 12

412.3, 412.3.1, 412.3.2, Table 412.3.2, 412.3.3, 412.3.4, 412.3.5

Proponent: Eric Rosenbaum, Hughes Associates, Inc., representing Air Traffic Control Tower Fire Life Safety Task Group (erosenbaum@haifire.com)

Revise as follows:

412.3 Airport traffic control towers. The provisions of Sections 412.3.1 through 412.3.511 shall apply to airport traffic control towers not exceeding 1,500 square feet (140 m²) per floor occupied only for the following uses:

1. Airport traffic control cab.
2. Electrical and mechanical equipment rooms.
3. Airport terminal radar and electronics rooms.
4. Office spaces incidental to the tower operation.
5. Lounges for employees, including sanitary facilities.

412.3.1 Type of construction. Airport traffic control towers shall be constructed to comply with the height and area limitations of Table 412.3.2.

**TABLE 412.3.2
HEIGHT AND AREA LIMITATIONS FOR AIRPORT TRAFFIC CONTROL TOWERS**

TYPE OF CONSTRUCTION	HEIGHT ^a (feet)	MAXIMUM AREA (square feet)
IA	Unlimited	1,500
IB	240	1,500
IIA	100	1,500
IIB	85	1,500
IIIA	65	1,500

a. Height to be measured from grade plane to cab floor

412.3.2 Stairway Stairways in Airport traffic control towers shall conform to the requirements of Section 1009. Such *stairways* shall be a smokeproof enclosure in accordance with Section 909.20. The stair pressurization alternative in accordance with Section 909.20.5 shall be permitted to be used. *Stairways* shall not be required to extend to the roof as specified in Section 1009.11.

412.3.3 Exit access. From observation levels, airport traffic control towers shall be permitted to have a single means of exit access for a distance of travel not exceeding 100 ft (30 m). This means of egress shall be permitted to include exit access utilizing an unenclosed stair at the observation level.

412.3.2 412.3.4 Single means of egress. Not less than one *exit stairway* shall be permitted for airport traffic control towers of any height provided that the *occupant load* per floor is not greater than 15 and the *area per floor* does not exceed 1,500 square feet (140 m²). The *stairway* shall conform to the requirements of Section 1009. The *stairway* shall be separated from elevators by a minimum distance of one-half of the diagonal of the area served measured in a straight line. The *exit stairway* and elevator hoist way are permitted to be located in the same shaft enclosure, provided they are separated from each other by a 4-hour *fire barrier* having no openings. Such *stairway* shall be pressurized to a minimum of 0.15 inch of water column (43 Pa) and a maximum of 0.35 inch of water column (101 Pa) in the shaft relative to the building with stairway doors closed. *Stairways* need not extend to the roof as specified in Section 1009.11. The provisions of Section 403 do not apply.

Exception: Smokeproof enclosures as set forth in Section 1022.9 are not required where required *stairways* are pressurized.

412.3.4.1 Arrangement of single means of egress. Airport traffic control towers permitted a single exit and located above another building shall be provided with one of the following:

1. Exit enclosure separated from the other building with no door openings to or from the other building
2. Exit enclosure leading directly to an exit enclosure serving the other building, with walls and door separating the exit enclosures from each other, and another door allowing access to the top floor of the building that provides access to a second exit serving that floor.

412.3.4.2 Interior Finish. Airport traffic control towers permitted a single exit in accordance with Section 412.3.4 shall be restricted to interior wall and ceiling finishes of Class A or Class B.

~~412.3.3~~ **412.3.5 Automatic fire detection systems.** Airport traffic control towers shall be provided with an automatic fire detection system installed in accordance with Section 907.2.

412.3.6 Automatic sprinkler system. Airport traffic control towers shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

~~412.3.4~~ **412.3.7 Standby power.** A standby power system that conforms to Chapter 27 shall be provided in airport traffic control towers more than 65 feet (19 812 mm) in height. Power shall be provided to the following equipment:

1. Pressurization equipment, mechanical equipment and lighting.
2. Elevator operating equipment.
3. Fire alarm and smoke detection systems.

412.3.8 Elevator Protection. Wires or cables that provide normal and standby power, control signals, communication with the car, lighting, heating, air conditioning, ventilation and fire-detecting systems to elevators shall be protected by construction having a minimum 1-hour *fire resistance rating* or shall be circuit integrity cable having a minimum 1-hour *fire-resistance rating*.

~~412.3.5~~ **412.3.9 Accessibility.** Airport traffic control towers need not be *accessible* as specified in the provisions of Chapter 11

Reason: All of the proposed changes are the recommendation of the Air Traffic Control Tower Fire Life Safety Task Group, and reflect the current approach to fire protection and life safety in airport traffic control towers (ATCT). The fire safety criteria applicable to ATCTs are originally based on an agreement between the operator of and controllers utilizing the ATCTs. Many of the changes relate to reformatting the Section with the intent of clarifying its application.

ATCTs create a unique hazard. ATCTs typically have a limited number of occupants. In addition, occupants must be awake and alert. The hazard associated with ATCTs is affected by the building's limited uses, height, and the potential delay in evacuation because of the handoff of flights .

Section 412.3-The provision of a maximum area per floor of 1,500 square feet limits the usage of the facility without providing significant Fire/Life Safety benefit in Airport Traffic Control Towers with multiple exits. The 1,500 square foot maximum area provisions are proposed to be relocated to restrict the floor size only for single exit towers. It is proposed that facilities in excess of 1,500 square feet per floor would be considered a ATCT only if the uses are limited to those listed in Section 412.3. Facilities with uses other than those listed in Section 412.3 would need to be designed as a typical building as addressed by the remainder of the IBC.

Table 412.3.1-The proposed provisions to limit construction to non-combustible types is presented because the use of combustible construction for a new ATCT allows the introduction of a potential unnecessary hazard developing within the construction without observation. We are not aware of new ATCT utilizing combustible construction.

Section 412.3.2-This change creates a new section containing criteria applicable to stairways for clarity. Most of the criteria were relocated from the existing Section 412.3.2, **Egress**. The current specified pressure differential required by Section 412 does not coordinate with Chapter 9 and the current approaches, a pressure differential of a minimum of 0.10 inches of water. In addition, instead of requiring a smoke proof enclosure by stair pressurization all options are identified as acceptable for providing a smoke proof enclosure.

Section 412.3.3-This section provides new criteria applicable to egress from observation levels. Obstruction related to enclosed stairs would eliminate the ability to provide sightlines. In addition, the reduction in area to allow two stairs to this level would affect operations. The proposed maximum exit access travel distance provision is intended to address exit access from the cab, where a single access stair is provided to allow maximum floor usage and maintain 360 degree line-of-sight requirements. A single exit access stair is typically provided from the observation level with the exit originating on the floor below the observation level. The proposed provision limits travel distance before reaching an exit/exits and is based on the common path of travel limitations established under Chapter 10.

Section 412.3.4- Many of the changes relate to relocations to or from other sections. In addition, the separation distance criteria of the stair to an elevator and fire resistance rating of the shafts is proposed to be removed. Elevators are not typically utilized as a means of egress unless specifically design such as Occupant Evacuation Elevators, Section 3008. If designed as a means of egress the criteria for separation distance of exits in Chapter 10 would potentially apply. Shaft enclosure criteria in Chapter 7 addresses fire resistance rated separation of shafts sufficiently.

Section 412.3.4.1-The proposed provision limiting single stair exit arrangement is intended to provide increased Fire/Life Safety when Airport Traffic Control Towers are built above other buildings. In this scenario, separated exit enclosures are required to protect occupants from the Airport Traffic Control Tower where delayed evacuation of the cab may be required.

Section 412.3.4.2-The proposed restriction on interior finish in a single exit stair Airport Traffic Control Tower is intended to increase Fire/Life Safety by limiting flame spread and smoke production which have a higher probability of impinging on the means of egress in single stair facilities.

Section 412.3.6-The proposed provision requiring sprinkler protection in all Airport Traffic Control Towers is intended to increase life safety and property protection. Life safety is positively affected by limiting the chance of smoke/fire spread and flashover in the facility where delayed evacuation of the cab may be required. In addition, property protection to allow sooner reuse of the structure would be provided.

Section 412.3.8-The proposed provision requiring protection of elevator wiring and cabling is to increase the probability of a functioning elevator to aid firefighters in the event of a fire and to increase the probability that the facility can be rapidly returned back to service after a minor fire incident.

Section 412.3.9 - No change from current criteria. ATCTs are exempt from accessibility criteria in Section 412.3.5.

Cost Impact: This code change will increase the cost of construction from the current code requirements; however, reflects current building practices of ATCTs.

G86-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

412.3-G-ROSENBAUM

G87 – 12

412.7 (NEW), Table 412.7 (NEW), 412.7.1 (NEW), Table 1016.2 (IFC [B] Table 1016.2)

Proponent: Gregory R. Keith, Professional heuristic Development, representing The Boeing Company (grkeith@mac.com), Jay Wallace, The Boeing Company (jay.s.wallace@boeing.com)

Add new text as follows:

412.7 Aircraft manufacturing facilities. In buildings used for the manufacturing of aircraft, exit access travel distances indicated in Section 1016.1 shall be increased in accordance with the following:

1. The building shall be of Type I or II construction.
2. Exit access travel distance shall not exceed the distances given in Table 412.7.

**TABLE 412.7
AIRCRAFT MANUFACTURING EXIT ACCESS TRAVEL DISTANCE**

HEIGHT (feet) ^b	MANUFACTURING AREA (sq. ft.) ^a					
	≥150,000	≥200,000	≥250,000	≥500,000	≥750,000	≥1,000,000
≥ 25	400	450	500	500	500	500
≥ 50	400	500	600	700	700	700
≥75	400	500	700	850	1,000	1,000
≥ 100	400	500	750	1,000	1,250	1,500

For SI: 1 foot = 304.8 mm

a. Contiguous floor area of the aircraft manufacturing facility having the indicated height.

b. Minimum height from finished floor to bottom of ceiling or roof slab or deck.

412.7.1 Ancillary areas. Rooms, areas and spaces ancillary to the primary manufacturing area shall be permitted to egress through such area having a minimum height as indicated in Table 412.7. Exit access travel distance within the ancillary room, area or space shall not exceed that indicated in Table 1016.1 based on the occupancy classification of that ancillary area. Total exit access travel distance shall not exceed that indicated in Table 412.7.

Revise as follows:

**TABLE 1016.2 (IFC [B] TABLE 1016.2)
EXIT ACCESS TRAVEL DISTANCE^a**

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM (feet)
A, E, F-1, M, R, S-1	200	250 ^b
I-1	Not Permitted	250 ^c
B	200	300 ^c
F-2, S-2, U	300	400 ^c
H-1	Not Permitted	75 ^c
H-2	Not Permitted	100 ^c
H-3	Not Permitted	150 ^c
H-4	Not Permitted	175 ^c
H-5	Not Permitted	200 ^c
I-2, I-3, I-4	Not Permitted	200 ^c

For SI: 1 foot = 304.8 mm.

a. See the following sections for modifications to *exit access* travel distance requirements:

Section 402.8: For the distance limitation in *malls*.

Section 404.9: For the distance limitation through an *atrium* space.

- Section 407.4: For the distance limitation in Group I-2.
 - Sections 408.6.1 and 408.8.1: For the distance limitations in Group I-3.
 - Section 411.4: For the distance limitation in special amusement buildings.
 - Section 412.7: For the distance limitations in aircraft manufacturing facilities.
 - Section 1015.4: For the distance limitation in refrigeration machinery rooms.
 - Section 1015.5: For the distance limitation in refrigerated rooms and spaces.
 - Section 1021.2: For buildings with one *exit*.
 - Section 1028.7: For increased limitation in assembly seating.
 - Section 1028.7: For increased limitation for assembly open-air seating.
 - Section 3103.4: For temporary structures.
 - Section 3104.9: For pedestrian walkways.
- b. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where *automatic sprinkler systems* are permitted in accordance with Section 903.3.1.2.
 - c. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

Reason: Supporting technical data are available for review at <http://www.boeing.com/nosearch/tds/>.

Many aircraft manufacturing buildings are unusually large due to the size of the commercial or military aircraft being produced. For instance, an assembled Boeing 747 has a tail height of over 63 feet. The rectangular footprint of a Boeing 747-800 is over 56,000 square feet.

Group F-1 occupancies greater than 150,000 square feet in floor area can have difficulty complying with 250 foot, sprinklered exit access travel distance limitations without incorporating exit passageways or horizontal exits into the design of the building means of egress system. The use of either exit component is somewhat problematic. Due to the compartmentalized nature of horizontal exits, they do not lend to aircraft production processes or movement of the finally assembled aircraft. For similar reasons, exit passageways are generally installed below the floor of the assembly level. The use of underground exit passageways during an emergency in a very high volume space is generally contrary to human nature. Once aware of an event, employees would instinctively evacuate the building at the level with which they are most familiar. Also, it is relatively easy to move away from the point of origin of a fire due to a person's sensory awareness within the entire open space. Given the fact that occupants sense safety as they move away from the fire, it is counter-intuitive to enter an underground area unless as a last resort.

Regardless of human nature and logic, it must be demonstrated that large volume spaces provide a tenable environment for the evacuation or relocation of building occupants. Prior to the technical justification of this proposal, it should be noted that during the previous code development cycle, The Boeing Company submitted Item E109-09/10, that was intended to allow for increased travel distances in large volume aircraft manufacturing buildings. To support its proposal, Boeing conducted smoke and temperature fire modeling using the NIST FDS (National Institute of Standards and Technology - Fire Dynamics Simulator) computer program. Boeing correlated initial model fire data to an actual burn test conducted at a certified test facility in Washington State.

The ICC Means of Egress Code Committee disapproved the proposal. This proposal is virtually identical to the previous submittal. In its published reason statement for disapproval, the committee stated, "Boeing should be commended for their fire model analysis on this issue." The primary concern of the committee was that Boeing had not obtained a third party peer review in accordance with The American Society of Fire Protection Engineers protocol. Additionally, several questions were asked about Boeing modeling assumptions. The Boeing Company obtained the services of Arup, a widely renowned design and consulting firm to perform a peer review. Arup reviewed the committee comments and provided Boeing with a revised set of parameters for new modeling runs. Based on the results of the additional modeling runs, Arup developed a report validating the proposed travel distances. During testimony at the final action hearings in Charlotte, NC, several Means of Egress Code Committee members testified that Boeing had addressed their concerns and recommended approval of the code change. During testimony, one individual expressed that a centrally located fire could produce more severe results. Based on this created doubt, the item failed to achieve the necessary 2/3 majority by a handful of votes. Since that disapproval, additional modeling has been performed based on a centrally located event origin. The results further validated the proposed code change. Resubmitted for this code development cycle, there is only one significant change to the proposal. That is with the location of the provision. Previously, it was proposed to be located in Section 1016. Given the very specific nature of the provision--that is, it is applicable only to large volume aircraft manufacturing facilities--it has been located in Section 412, Aircraft-Related Occupancies.

Since this is a re-submittal of a previous proposal, supporting technical data are extensive and could overwhelm this reason statement. Therefore, background information is provided in chronological order at a Boeing website: <http://www.boeing.com/nosearch/tds/>. Included are: the original proposed code change E109-09/10 with a comprehensive reason statement, initial supporting modeling data, the Means of Egress Code Committee's reason for disapproval, revised modeling data based on committee comment, the Arup peer review, Boeing's public comment for approval as submitted at the final action hearings and further modeling data based on comment at the final action hearings.

In summary, the unique size of some aircraft manufacturing facilities inherently provides a tenable environment for building occupants as they travel to an exit. It is logical that spaces with higher ceilings provide for a greater level of occupant tenability than those with lower ceilings. Rather than arbitrarily selecting travel distance values based on former provisions or attempting an educated guess, The Boeing Company conducted computer modeling based on conservative assumptions in order to determine acceptable travel distances. This proposal has been extensively vetted over the previous code development cycle. Boeing has responded to every technical concern by performing additional modeling runs and obtaining a third party peer review. All additional research and review has only further validated the initial assumptions and conclusions. Approval of this proposal will acknowledge means of egress design issues associated with large area, high volume aircraft manufacturing spaces while providing a high degree of occupant safety during egress from such buildings.

Cost Impact: The proposed changes will not increase the cost of construction.

G87-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

412.7 (NEW)-G-KEITH-WALLACE

G88 – 12

[F] 415.8.1.7 (New) (IFC 3403.2)

Proponent: Barry Gupton, PE, representing NC Department of Insurance (NCDOI), Office of State Fire Marshal (OSFM), Engineering Division (barry.gupton@ncdoi.gov)

Add new text as follows:

[F] 415.8.1.7 (IFC 3403.2) Tire rebuilding. Buffing operations shall be located in a room separated from the remainder of the building housing the tire rebuilding or tire recapping operation by a 1-hour fire barrier.

Exception: Buffing operations are not required to be separated where all of the following conditions are met:

1. Buffing operations are equipped with an approved continuous automatic water-spray system directed at the point of cutting action;
2. Buffing machines are connected to particle-collecting systems providing a minimum air movement of 1,500 cubic feet per minute (cfm) (0.71 m³/s) in volume and 4,500 feet per minute (fpm) (23 m/s) in-line velocity; and
3. The collecting system shall discharge the rubber particles to an approved outdoor noncombustible or fire-resistant container, which is emptied at frequent intervals to prevent overflow.

Reason: The 2012 IFC has this exact requirement in Section 3403.2 for buffing areas in tire rebuilding operations. The requirement is to prevent the fire hazard of rubber dust generated by these operations. The requirement is different than the general requirement for "grinding rooms" in IBC Section 415.8.1.2. Because it is a requirement that affects building construction it should also appear in the building code so that designers can make informed decisions concerning this use.

Cost Impact: The code change proposal will not increase the cost of construction as it is already a requirement in the IFC.

G_-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

415.8.1.7 (NEW)-G-GUPTON

G89 – 12

419.1

Proponent: Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee (BCAC)

Revise as follows:

419.1 General. A *live/work unit* shall comply with Sections 419.1 through 419.9.

Exceptions:

1. Dwelling or sleeping units that include an office that is less than 10 percent of the area of the *dwelling unit* are permitted to be classified as *dwelling units* with accessory occupancies in accordance with Section 508.2.
2. Live/work units where the work area that is less than 10% of the dwelling unit in a one- and two- family dwelling or townhouse shall be permitted to be constructed in accordance with the International Residential Code and shall have an automatic sprinkler system in accordance with Section R313.

Reason: This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

The proposed code change corrects the circular language that would require live/work units in one- and two- family dwellings and townhouses from having to be built in accordance with Section 419 of the International Building Code. This is a two part code change proposal which must first be corrected in the IBC, followed by a modification of the current exception in the IRC. The current language in both IRC and the IBC states the live/work units must be classified as a R-2 occupancy and shall comply with section 419 of the IBC. If an owner of a one- and two- family dwelling wanted to convert a small portion of their dwelling to a live work/unit, they would have to perform extensive modifications to the existing structure, to meet the requirements of an R-2. Speaking with the proponents of the original code change, it was not the intent to change the occupancy of a one- and two- family dwelling to an R-2.

The additional change to the code with this new exception is to limit the size of the work portion to no more than 10% of the dwelling unit. Based on the concerns of increased live loads to the load bearing capabilities and the potential increase in the fuel loads, it was determined by the BCAC that the size limitations is reasonable from both a functional use of space as well as a balance to not create any increased hazards for the use of the dwelling.

Cost Impact: The proposed language will lower the cost of construction by providing for clarity in the allowance of having a live/work unit in a detached one – and two-family dwelling built under the IRC.

G89-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

419.1-G-BAJNAI-BCAC

G90 – 12

402.1, 402.2, 420.3, 420.6 (NEW)

Proponent: Jason Thompson, P.E., National Concrete Masonry Association, representing Masonry Alliance for Codes and Standards (jthompson@ncma.org)

Revise as follows:

420.1 General. Occupancies in Groups I-1, R-1, R-2 and R-3 shall comply with the provisions of Sections 420.1 through ~~420.5~~ 420.6 and other applicable provisions of this code.

420.2 Separation walls. Walls separating *dwelling units* in the same building, walls separating *sleeping units* in the same building and walls separating *dwelling* or *sleeping units* from other occupancies contiguous to them in the same building shall be constructed as *fire partitions* in accordance with Section 708. For buildings more than two stories in height or that have dwelling or sleeping units located on a floor level that is more than 25 feet above the grade plane, see Section 420.6.

420.3 Horizontal separation. Floor assemblies separating *dwelling units* in the same buildings, floor assemblies separating *sleeping units* in the same building and floor assemblies separating *dwelling* or *sleeping units* from other occupancies contiguous to them in the same building shall be constructed as *horizontal assemblies* in accordance with Section 711. For buildings more than two stories in height or that have dwelling or sleeping units located on a floor level that is more than 25 feet above the grade plane, see Section 420.6.

420.6 Special requirements for Group I-1, R-1 and R-2 occupancies. Buildings classified as a Group I-1, R-1 or R-2 occupancy that are more than two stories in height or that have dwelling or sleeping units located on a floor level that is more than 25 feet above the grade plane shall comply with all of the following requirements:

1. The separation walls specified in Section 420.2 shall be constructed of noncombustible materials to provide a fire resistance rating of not less than 2 hours and shall comply with the requirements for fire barriers in accordance with Section 707.
2. The floor assemblies specified in Section 420.3 shall be constructed of noncombustible materials to provide a fire resistance rating of not less than 2 hours and shall comply with the requirements for horizontal assemblies in accordance with Section 711.
3. Load bearing walls shall meet the requirements of Section 1604 without the use of sheathing.
4. The materials used for construction of walls shall be of a type that is not adversely affected by moisture.

Reason: Though the loss of life from fires affecting Group I-1, R-1 and R-2 occupancies is not high with the changing construction methods and the noticeable shift to light weight construction methods, and the continued national trend in reducing fire department staffing numbers, the proposed code language provides for two distinct safety provisions. The first is the increased compartmentalization of the building to reduce fire spread and damage using passive fire protection methods. The second safety provision is the ability of the structure to be constructed in such a way that it retains its structural integrity after being subject to a fire. The provisions of **Section 101.3 Intent**, state:

"The purpose of this code is to establish the minimum requirements to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire and other hazards attributed to the built environment and to provide safety to fire fighters and emergency responders during emergency operations."

Currently many of these load bearing walls are constructed in such a way that the wall sheathing is a critical part of the structural integrity of the wall. The sheathing is used for localized member stability, global stability, and in many cases the lateral load resisting system for the entire building. During an adverse event, such as a fire this sheathing can be compromised by fire damage, mechanical damage, and water damage compromising the overall structural integrity of the building. Where the current standard test used for fire resistance is the ASTM E119, Standard Test Methods for Fire Tests of Building Construction and Materials, in practice this test does not account for the reduction in strength and stiffness that results from fire and water damage. It is not

practical to think that every assembly would be tested at designed load levels and the resulting strength and stiffness data used in design, as a result the proposed provisions would provide for the structure to rely on the sheathing only as a fire resistive element and would allow the structure to maintain its design strength after the sheathing was compromised or removed for any reason.

The proposed story level and floor height is based on the ability for a fire department to make a rescue from the exterior of the structure using the equipment commonly found on an NFPA 1901 equipped motorized fire engine, this using the most common extension ladder size, being a 24 foot long extension ladder which can easily reach a second floor window. In addition, for structures three stories or greater in height, the level of vertical load and potential lateral load on these walls increases and as a result an additional level of safety is needed.

While we acknowledge the success in NFPA 13 & 13R sprinkler systems to manage and control fire, the provisions of this code change are designed to assist those systems in effectively doing their job and to provide structural stability and strength that is dictated under the provisions of Section 101.3.

Cost Impact: This code change proposal may increase the cost of construction

G90-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

420.1-G-THOMPSON

G91 – 12

420, 420.1, 420.6 (NEW)

Proponent: Daniel E. Nichols, P.E., New York State Division of Code Enforcement and Administration
(dan.nichols@dos.state.ny.us)

Revise as follows:

SECTION 420 GROUPS I-1, R-1, R-2, R-3, R-4

420.1 General. Occupancies in Groups I-1, R-1, R-2 ~~and R-3~~ and R-4 shall comply with the provisions of this section and other applicable provisions of this code.

420.6 Protection of Attics. Attic spaces that are not used for living purposes, storage, or fuel-fired equipment in Group I-1 and Group R-4 occupancies shall meet one of the following conditions:

1. Be protected by an automatic sprinkler system in accordance with Section 903.3;
2. Be constructed of non-combustible construction; or
3. Be constructed of fire-retardant-treated wood in accordance with Section 2303.2.

Reason: In March, 2009, a fire at the Riverview Independent Residential Alternative (IRA) home for persons with developmental disabilities claimed the lives of 4 residents and injured the remaining 5 residents and 2 staff. The building was 1-story in height, approximately 3,000 square feet, of Type 5b construction and was built to the 2003 edition of the International Building Code (with additional requirements by the State of New York) just 1 year prior. The building was protected by a fully operational NFPA 13D fire sprinkler system (that was connected to a municipal water supply), automatic fire detection system throughout the habitable areas, a heat detection system within the attic space, and several non-required fire- and/or smoke-separations.

It has been determined that the fire origin was exterior to the building and the fire had a significant lead time prior to occupant notification. Whereas the non-required heat detection was placed every 1000 square feet within the attic space, the near zero temperatures and the arrangement of the attic space delayed the prompt activation of the detectors. At the time of fire alarm activation, smoke was already present within the sleeping area corridors and inhibited staff movement of residents. Prior to evacuation of all residents (which initially moved them near the main exit door, fire from the roof structure above the main door and the interior smoke conditions prevented further staff evacuation of the residents to the exterior.

The purpose of this code change proposal is to address a known hazard in occupancies that house residents with special needs but are permitted to have unsprinklered attic spaces. Addressing the goal of minimizing fire spread in attic spaces is presented in this code change by provided options that meet this goal; either by providing extinguishment or by limiting the fuel load. The location of 310.6.1 (new) for Group R-4 occupancies is so it applies to all Group R-4 occupancies but is scoped to keep the "5 and under" allowances consistent throughout the Group I Section. Section 308.3.3 (new) is proposed to address larger group homes as well as the other types of characteristic occupancies listed within 308.3 under Group I-1 since all occupancies have occupants that are expected to do a full evacuation during an emergency but may have issues getting to the exit.

Cost Impact: This will increase the cost of construction. However, the increase will be variable since three options are being proposed.

G91-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

310.6.1 (NEW)-G-NICHOLS

G92 – 12

422.3

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Healthcare

Revise as follows:

422.3 Smoke compartments. Where the aggregate area of one or more *ambulatory care facilities* is greater than 10,000 square feet (929 m²) on one *story*, the *story* shall be provided with a *smoke barrier* to subdivide the *story* into no fewer than two *smoke compartments*. The area of any one such *smoke compartment* shall be not greater than ~~22,500~~ 40,000 square feet (~~2092-m²~~ 3719 m²). The travel distance from any point in a *smoke compartment* to a *smoke barrier* door shall be not greater than 200 feet (60 960 mm). The *smoke barrier* shall be installed in accordance with Section 709 with the exception that *smoke barriers* shall be continuous from outside wall to an outside wall, a floor to a floor, or from a *smoke barrier* to a *smoke barrier* or a combination thereof.

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

Intent and Summary

This code change addresses outdated code material. Historically, smoke compartment size has been driven by the allowable travel distance within the smoke compartment. Past code changes have increased the travel distance without a corresponding change in smoke compartment size. Secondly, the size of the functional patient areas has increased, but the occupant load has remained the same or has been reduced. Therefore, we are asking for an increase in smoke compartment size to accommodate the operational needs of these facilities.

A summary of the history of smoke compartment requirements is as follows:

- October 1984 BCMC – No area limitations. Maximum length and width equals 150 feet.
- 1987 BOCA – 610.5 – No area limitations. Maximum length and width equals 150 feet
- 1992 BOCA Supplement – 610.4 – 22,500 square feet, with maximum travel distance of 150 feet.
- Code Change No. B20-95 – 22,500 square feet, with maximum travel distance proposed to be increased to 200 feet.
- 1996 BOCA – 409.4 - 22,500 square feet, with maximum travel distance of 200 feet.
- 2000 IBC – 407.4 - 22,500 square feet, with maximum travel distance of 200 feet.

Originally, there was no limit to smoke compartment size, other what was imposed by travel distance. The 22,500 square foot requirement was based on the old travel distance requirement of 150 feet, and used it to extrapolate an area (150ft x150ft = 22,500 square feet). This proposal uses the same logic and applies the current 200 foot travel distance maximum (200ft x200ft), resulting in a 40,000 square foot smoke compartment. This proposal would maintain the existing requirement that each floor be divided into two smoke compartments. Practically the requirement for 200' travel distance within smoke compartments will still drive smaller smoke compartment sizes in some cases.

The application of the smoke compartment size for Ambulatory Care facilities was taken from the hospital requirement in Section 407. There was no specific reason given for using 22,500 square feet as a threshold other than mirroring the hospital requirement.

When studying the contemporary sizes of functions within ambulatory surgery areas, the area provided has increased. Attached is a study of space programs which compare the 2010 Guideline requirements with the 1996-97 Guidelines. In short, today's ambulatory surgery facility takes more square footage to care for the same amount of patients. These programs demonstrate the need to increase to 40,000 square foot smoke compartment. See program analysis at the following link. <http://www.iccsafe.org/cs/AHC/Pages/WG-General.aspx>

Cost impact: This proposal will help to decrease the cost of construction. Increasing the compartment size will reduce the number of smoke and fire dampers and lifetime maintenance costs could proportionally decrease.

G92-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

422.3-G-WILLIAMS-ADHOC.doc

G93 – 12

422.8 (NEW)

Proponent: Joe Nebbia and Mark Nowak, Steel Framing Allinace

Add new text as follows:

422.8 Allowable Building Heights and Areas. For Type V Construction, *ambulatory care facilities shall be limited to the height and area allowances for Group I-2 buildings found in Table 503.*

Reason: Ambulatory care facilities often house multiple care recipients that are partially or fully incapacitated during their treatment, making egress during a fire especially difficult if not impossible. Designers typically recognize the issues with evacuation and apply a defend-in-place approach.

A new section (Section 422 in the 2012 edition) was added to the code in 2009 and subsequently modified in 2012 adding specific requirements for separation, smoke compartments, refuge areas, independent egress, sprinklers, and alarms for ambulatory care facilities. A corresponding change to the code reclassified ambulatory care facility as Group B. Supposedly, the use group reclassification was a trade-off in exchange for the additional requirements in Section 422. However, these modifications to the code failed to recognize important aspects of the defend-in-place approach and leave some of the most venerable members of society at higher risk during fires.

This change would ensure that for Type V construction, which has the least restrictions on combustible materials of any construction type, full fire protection equivalent to or better than the pre-2009 code is made available to care recipients in vulnerable situations.

This proposal still allows all other types of construction that do not rely on the use of combustible framing materials to take advantage of the less restrictive Group B height limits in accordance with the changes approved in the 2009 edition of the code.

Defend-in-place is a concept that relies on multiple methods to allow a fire to be identified and eliminated while occupants are in a safe place. It is employed in a variety of buildings including but not limited to hotels, apartments, hospitals, and prisons. The 2008 NFPA Fire Protection Handbook (Chapter 20-Section 15) addresses healthcare occupancies. This section of the Handbook focuses on "those facilities that pose the greatest risk due to the impairment of occupants and/or lack of ambulatory capabilities of the occupants." It includes ambulatory healthcare facilities as buildings that fall into this category, and stresses the defend-in-place principles.

In reference to ambulatory and other healthcare occupancies, the Handbook states that "Buildings of two or more stories should be constructed of noncombustible materials..." It further emphasizes that "Vertical evacuation of occupants within a healthcare facility is, at best, difficult and time consuming."

In summarizing the important points of the defend-in-place concept for healthcare facilities (including ambulatory care facilities), the Handbook identifies fire-resistive construction as one of the important components of the approach. Unfortunately, the changes in the 2009 and 2012 code failed to retain this important part of the principle.

The importance of protecting the occupants in an ambulatory care facility is reinforced by the fact that prior to 2009 ambulatory care facilities would have been classified as Group I-2 construction. Section 504.2 of the code does not allow I-2 buildings to take the allowable height increase for sprinklers. This makes it difficult to rationalize the height increases that come with reclassification to group B. Changing the group classification and distinguishing ambulatory care facilities from other health care facilities where the occupants are incapable of caring for themselves through a definition that limits the duration of the stay does not change the risk to the occupants. Permitting the use of combustible materials to in taller buildings further increases the risk.

Cost Impact: The code change proposal will increase the cost of construction. The proposal will indirectly increase costs for a small number of buildings that will be limited in height under Type V construction.

G93-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

422.8 (NEW)-G-NEBBIA-NOWAK

G94 – 12

423.3 (NEW)

Proponent: Andrew Herseth FEMA and Erin Ashley URS Corporation, representing Dept. Homeland Security, Federal Emergency Management Agency

Revise as follows:

SECTION 423

STORM SHELTERS

423.1 General. In addition to other applicable requirements in this code and this section, storm shelters shall be constructed in accordance with ICC-500.

423.1.1 Scope. This section applies to the construction of storm shelters constructed as separate detached buildings or constructed as safe rooms within buildings for the purpose of providing safe refuge from storms that produce high winds, such as tornados and hurricanes. Such structures shall be designated to be hurricane shelters, tornado shelters, or combined hurricane and tornado shelters.

423.2 Definitions. The following terms are defined in Chapter 2:

STORM SHELTER.

Community storm shelter.
Residential storm shelter.

423.3 Group E Occupancies. In areas where the shelter design wind speed for tornadoes is 250 MPH per Figure 304.2(1) of ICC 500, all Group E Occupancies with an aggregate occupant load of 50 or more shall have a storm shelter constructed in accordance with ICC 500. The shelter shall be capable of housing the total occupant load of the Group E occupancy.

Exceptions:

1. Group E day care facilities.
2. Group E occupancies accessory to places of religious worship.
3. Buildings meeting the requirements for shelter design in ICC 500.

Reason: Due to unpredictable and often very short tornado warning time, there are many events where it is unfeasible to evacuate schools. Field studies of the Spring 2001 Southern US tornadoes revealed extensive damage to schools (including safe refuge areas) built to current codes. A saferoom provides near absolute protection for this vulnerable population. Background of this proposal is given below.

On May 6, 2011, the Mitigation Division of the Department of Homeland Security's Federal Emergency Management Agency (FEMA) deployed a Mitigation Assessment Team (MAT) to the States of Alabama, Georgia, Mississippi, and Tennessee to assess the damage caused by an outbreak of tornadoes occurring April 25 through April 28, 2011. A second MAT was deployed on June 1, 2011 to Missouri following the tornado on May 22 in Joplin. The results of their study presents MAT observations, conclusions, and recommendations in response to those field investigations highlight the importance of properly selecting the best available refuge area in existing facilities, incorporating shelters and safe rooms in new construction as well as the importance of eliminating collapse hazards, such as tree fall and other nearby objects.

The MAT observed 20 schools, 6 of which are described in Chapter 6 of the MAT Report to be published in Spring 2012. Each of these 6 schools saw high levels of damage due to the increase wind loading sustained by the building. The schools discussed are located in Missouri, Alabama, and Georgia.

IBC-compliant facilities are susceptible to significant building damage and disruption if struck by strong or violent tornadoes, as evidenced by the damage sustained by Joplin East Middle School during the May 22, 2011 Joplin tornado. While Joplin East Middle School was not occupied during the tornado (the tornado occurred on Sunday evening), the outcome could have been disastrous the school had been occupied. There were no safe rooms (by the definition of ICC 500-2008) located within the school, only "designated refuge areas." The auditorium roof and two exterior walls collapsed (see Figure 1), along with two roof trusses and an exterior wall of the gymnasium. The remainder of the damage was from wind-borne debris, including glazing damage, as well as water damage due to damaged roof covering, decking, and rooftop equipment. The tornado was estimated as an EF 3 by the National Weather Service and an EF 2 by the FEMA Mitigation Assessment Team (MAT).



Figure 1 (Figure 6-44 of the MAT Report): View of the collapse of the auditorium roof and both exterior walls of Joplin East Middle School.

Several other schools evaluated for damage by FEMA MAT deployed following the Spring 2011 tornado outbreak all showed substantial damage when exposed to a tornado. The consequences of the inability of a school to withstand a tornado event coupled with the lack of an ICC 500-compliant safe room could lead to devastating consequences, including loss of life.

Joplin High School, like the Middle School, was also unoccupied during the tornado event. The High School did not have a tornado safe room or shelter. Several lower level corridors were designated refuge areas. Debris was blown into these corridors during the tornado (see Figure 2).



Figure 2 (Figure 6-52 of the MAT Report): View of a corridor designated as a tornado refuge area in Joplin High School. The debris was blown into the corridor during the tornado.

The rest of the school saw widespread damage, including collapse of the gymnasium (see Figure 3), extensive exterior wall damage to the North classroom wing (see Figure 4) along with roof system damage, destroyed roof covering, broken glazing, collapse of the east wall of the classroom wing along the courtyard, and the collapse of portions of the auditorium walls. The NWS rated the tornado an EF4, while the FEMA MAT assessed the damage and determined the tornado was an EF3.



Figure 3 (Figure 6-56): View of the collapsed primary gymnasium of Joplin High School. The gymnasium collapsed through progressive failure.



Figure 4 (Figure 6-53 of the MAT Report): North classroom wing damage of Joplin High School.

Alberta Elementary School and University Place Elementary School in Tuscaloosa, Alabama, as well as both Ringgold Middle School and Ringgold High School in Ringgold, Georgia all also experienced damage from the Spring 2011 tornado outbreaks. None of these schools had safe rooms built to ICC 500-2008 specifications. Alberta Elementary school, where luckily the students had been sent home from school before the tornado struck, saw destruction of one of its "designated refuge areas." University Place Elementary School, Ringgold Middle School, and Ringgold High School were also not occupied during the tornado events because of early dismissals issued because of weather forecasts. It is lucky none the schools were occupied, as they all saw extensive damage.

Not all schools investigated by the FEMA MAT were lacking ICC 500-compliant safe rooms however. Seneca Intermediate School in Seneca, Missouri built a FEMA P-361, *Design and Construction Guidance for Community Safe Rooms* (FEMA, 2008), compliant safe room following damage from a tornado in May 2008. Though the community of Seneca, Missouri, was not hit by a tornado May 22, 2011, the MAT inspected this new community safe room as a case study for good safe room construction.

Seneca, Missouri, is not the only community that decided to take action and install an ICC 500-compliant safe room in its newly constructed school. On April 30, 2010, Alabama Governor Riley signed Act No. 2010-746 enacting a requirement for any new contract awarded on or after July 1, 2010 for the construction of a new public school (grades kindergarten to twelfth) to include a Building Commission of Alabama approved safe space or hallway. Pursuant to this Act, the Building Commission of Alabama adopted the ICC 500-2008 as the minimum building code for safe spaces. Safe spaces are required to comply with the building code requirements for tornado shelters. Compliance with the building code requirements for hurricane shelters is recommended, but not mandatory. Any renovations, additions to existing schools, or auxiliary buildings added to an existing school are not considered "a new public school" and are exempt from including an approved safe space or hallway.

A requirement, such as that enacted by Act No. 2010-746 in Alabama and the proposed code change (proposed Section 423) are important for life-safety as there may not always be enough of a lead time before a tornado strikes for early dismissal from schools and for students to seek safety. As was the case with University Place Elementary School, warning time for tornadoes can make all of the difference. FEMA technical and policy guidance on safe rooms recommends only having a 5 minute travel time (0.5-

mile distance) to seek shelter from a tornado. It is oftentimes imperative therefore, that students are able to shelter at their schools. In order for the students to be given near-absolute protection from a tornado, the safe rooms in schools need to be constructed to meet ICC 500-2008 standards, as is proposed by the addition of Section 423.

Cost Impact: This proposal will increase the cost of construction.

From FEMA 361, *Design and Construction Guidance for Community Safe Rooms (Second Edition)*, FEMA reviewed 36 safe room grant applications from 2008. On average, the safe room cost per square foot for projects considered technically feasible and effective for providing protection was \$188/sf. From more expanded grant application data from years 2005 to 2008, the percent increase in building cost to harden a portion of a new building to resist debris impact from a 15-lb 2x4 board missile traveling horizontally at 100 mph and impacting vertical surfaces and the same missile traveling vertically at 67 mph and impacting horizontal surfaces is 5-27%. More information on Safe Room design costs can be found in chapter 2 of FEMA 361.

G94-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

423 (NEW)-ASHLEY-HERSETH #1

G95 – 12

423.3 (NEW)

Proponent: Andrew Herseth FEMA and Erin Ashley URS Corporation, representing Dept. Homeland Security, Federal Emergency Management Agency

Revise as follows:

SECTION 423 STORM SHELTERS

423.1 General. In addition to other applicable requirements in this code and this section, storm shelters shall be constructed in accordance with ICC-500.

423.1.1 Scope. This section applies to the construction of storm shelters constructed as separate detached buildings or constructed as safe rooms within buildings for the purpose of providing safe refuge from storms that produce high winds, such as tornados and hurricanes. Such structures shall be designated to be hurricane shelters, tornado shelters, or combined hurricane and tornado shelters.

423.2 Definitions. The following terms are defined in Chapter 2:

STORM SHELTER.

Community storm shelter.
Residential storm shelter.

423.3 Critical Emergency operations. In areas where the shelter design wind speed for tornadoes per Figure 304.2(1) of ICC 500 is 250 MPH, 911 call stations, emergency operation centers and fire, rescue, ambulance and police stations shall have a storm shelter constructed in accordance with ICC 500.

Exception: Buildings meeting the requirements for shelter design in ICC 500.

Reason: Critical facilities, such as emergency operations centers (EOCs), fire and police stations and other buildings are essential for the delivery of vital services or protection of a community. Tornado damage investigations and other research have shown us techniques for protecting occupants of critical facilities struck by tornadoes, as well as maintaining continuity of operations for those facilities. Emergency operation centers and Police and fire rescue facilities are critical to disaster response because an interruption in their operation as a result of building or equipment failure may prevent rescue operations, evacuation, assistance delivery, or general maintenance of law and order, which can have serious consequences for the community after a storm event.

On May 6, 2011, the Mitigation Division of the Department of Homeland Security's Federal Emergency Management Agency (FEMA) deployed a Mitigation Assessment Team (MAT) to the States of Alabama, Georgia, Mississippi, and Tennessee to assess the damage caused by an outbreak of tornadoes occurring April 25 through April 28, 2011. A second MAT was deployed on June 1, 2011 to Missouri following the tornado on May 22 in Joplin. The results of their study presents MAT observations, conclusions, and recommendations in response to those field investigations highlight the importance of properly selecting the best available refuge area in existing facilities, incorporating shelters and safe rooms in new construction as well as the importance of eliminating collapse hazards, such as tree fall and other nearby objects.

The MAT observed 16 EOCs, as presented in Chapter 7 of the MAT report to be published in Spring 2012, fire stations and police stations that were located where the basic (design) wind speeds prescribed in IBC 2009 is 90 mph (ICC 2009) throughout Alabama, Mississippi and Missouri. Each of these 16 facilities saw some level of damage due to the increase wind loading sustained by the building.

Two such examples from the MAT highlighting the need for shelters in critical facilities are the Tuscaloosa Fire Station 4 and the Smithville Police Station.

The Tuscaloosa Fire Station 4 (Tuscaloosa, AL) is a building which was in the vicinity of the tornado track, rated an EF4 by NWS, as shown in Figure 1. Four fire station personnel were in the building when the tornado struck although none were injured.

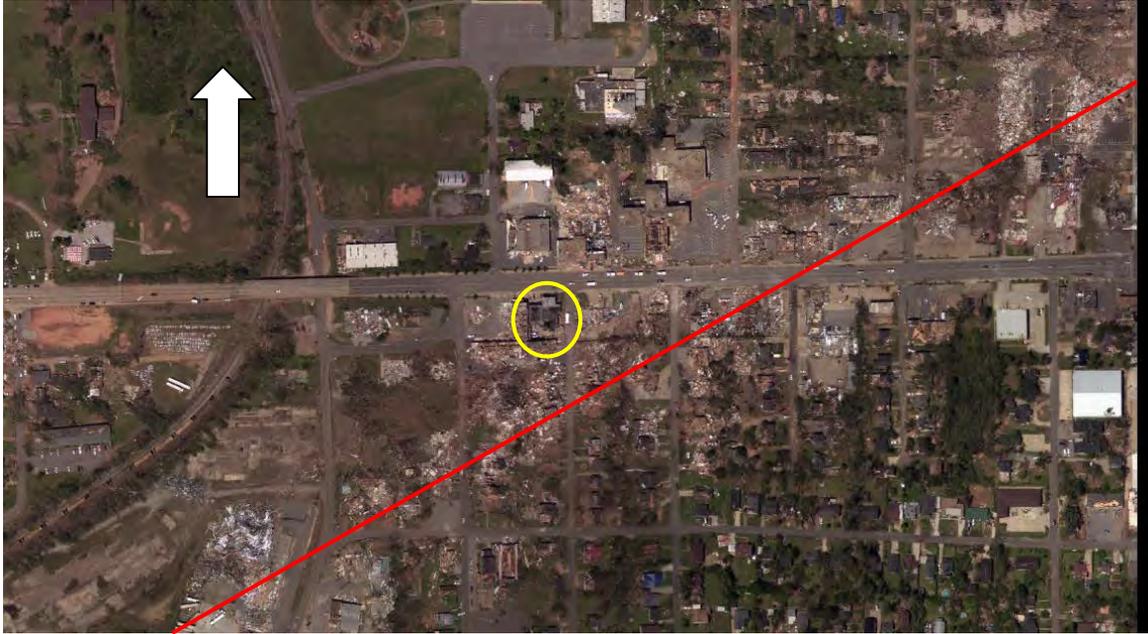


Figure 1 (Figure 7-38 of the MAT Report): Aerial view of the track in the vicinity of the fire station (yellow circle). The center of the track is approximated by the red line (Tuscaloosa, AL) (Source: Modified from NOAA, 2011)

This fire station was opened in 1952. The fire station had a modified bitumen roof membrane system over a cast-in-place concrete deck. Some of the exterior walls were brick (which appeared to be bearing walls). Other exterior walls were stucco over wire lath over furring over what appeared to be cast-in-place concrete. The apparatus bay had two sectional doors at the front and back of the bay. There was not a safe room or shelter in the building. The tornado blew all four apparatus bay doors away, all of the exterior windows were broken, the roof membrane was punctured in a few areas, some of the cap sheet was blown away, and some rooftop equipment was blown away. Figure 2 is a general view of the fire station and the adjacent apartment building.



Figure 2 (Figure 7-39 of the MAT Report): The fire station is within the red circle. The apparatus bay is indicated by the blue arrow and the living quarters are indicated by the green arrow. The yellow and orange arrows indicate the nearby heavily damaged apartment buildings (Tuscaloosa, AL)

The Smithville Police Department (Smithville, MS) experienced substantial damage and casualties after the tornado. NWS rated the core of the track in the vicinity of the police department as an EF5 as shown in Figure 3 below. At the time the tornado struck there were seven people in the building, five of whom were injured by the tornado damage.



Figure 3 (Figure 7-48 of the MAT Report): Aerial view of the tornado track in the vicinity of the Smithville Police Department (yellow circle). The center of the track is approximated by the red line (Smithville, MS) (Source: Modified from NOAA, 2011)

The Smithville Police Department was constructed in 1962. The building was constructed of unreinforced CMU with brick veneer. The facility did not have a shelter or safe room. During the storm, the roof of the police department was blown off, and large portions of the walls on the north, east, and south sides of the building collapsed.



Figure 4 (Figure 7-52 of the MAT Report): The red arrow indicates the office where two children and an adult got under the desk to take refuge (Smithville, MS)



Figure 5 (Figure 7-53 of the MAT Report): View of the collapsed east wall (red arrow) and restroom (blue arrow) of the Smithville Police Department. Note that some of the restroom walls collapsed (Smithville, MS)

At the time the tornado struck there were seven people were in the building including police personnel and civilians. Two people sustained injuries. As a result of the tornado, the Smithville Police Department lost complete functionality at its original location and has been relocated to the town hall.

Another facility investigated by the MAT was the Cullman County Emergency Management Agency; this facility was not struck by the Cullman tornado on April 27, 2011. In 2008, the Cullman County Emergency Management Agency (EMA) moved into its new facility in the basement of the newly constructed Cullman County Water Department Building. The EMA portion of the facility was designed as a safe room in accordance with FEMA 361 (2000 edition) to resist the wind and wind-borne debris associated with EF5 tornadoes: wind speeds of 250 mph (3-second gust) and debris impact from a 15-lb 2x4 board missile traveling horizontally at 100 mph.

According to the architect, the portions of the facility designed to the FEMA 361 criteria were constructed for approximately \$200 per square foot for a total cost of roughly \$1,250,000. By contrast the upper floor of the facility (used for other Cullman County offices) was constructed at a cost of approximately \$120 per square foot. If constructed to the building code in effect at the time, the EMA portion of the facility would have cost approximately 50% less. Implementing the FEMA 361 criteria for the selected portions of the facility ended up accounting for approximately 65% of the total building cost. By choosing to spend an additional 25% on the facility, the owner and architect were able to achieve both personal protection for the 25 county staff and also provide continuity of operations during events. Additionally, based on FEMA 361 criteria regarding the number of occupants, the multipurpose room can provide protection for the facility staff as well as up to 300 additional persons (if needed).

The code should consider including a shelter to protect occupants of critical facilities, making enhancements to building design that will minimize building damage, and designing the facility to avoid interrupted operations even if struck by violent tornadoes.

Cost Impact: This proposal will increase the cost of construction.

From FEMA 361, *Design and Construction Guidance for Community Safe Rooms (Second Edition)*, FEMA reviewed 36 safe room grant applications from 2008. On average, the safe room cost per square foot for projects considered technically feasible and effective for providing protection was \$188/sf. From more expanded grant application data from years 2005 to 2008, the percent increase in building cost to harden a portion of a new building to resist debris impact from a 15-lb 2x4 board missile traveling horizontally at 100 mph and impacting vertical surfaces and the same missile traveling vertically at 67 mph and impacting horizontal surfaces is 5-27%. More information on Safe Room design costs can be found in chapter 2 of FEMA 361.

G95-12

Public Hearing: Committee: AS AM D
 Assembly: ASF AMF DF

423 (NEW)-HERSETH-ASHLEY #2

G96 – 12

423.1, 423.3 (NEW), 423.3.1 (NEW), 423.3.2 (NEW), 423.4 (NEW)

Proponent: Stephen V. Skalko, P.E., Portland Cement Association, Eric T. Stafford, P.E., representing Institute for Business and Home Safety, Jason Thompson, P.E., National Concrete Masonry Association, representing Masonry Alliance for Codes and Standards

Revise as follows:

423.1 General. In addition to other applicable requirements in this code, storm shelters shall be constructed in accordance with ICC-500 shall be provided in accordance with Section 423.3.

423.1.1 Scope. This section applies to the construction of storm shelters constructed as separate detached buildings or constructed as safe rooms within buildings for the purpose of providing safe refuge from storms that produce high winds, such as tornados and hurricanes. Such structures shall be designated to be hurricane shelters, tornado shelters, or combined hurricane and tornado shelters.

423.3 Storm shelters required. Storm shelters shall be provided for occupants of buildings in accordance with Sections 423.3.1 and 423.3.2.

Exceptions:

1. Buildings meeting the requirements for shelter design in ICC/NSSA 500.
2. Where storm shelters within 1/4-mile of the proposed building are available and have adequate size to accommodate the added occupant load of the proposed building.
3. Where the code official determines the building size, location or occupant load does not warrant shelters.

423.3.1 Hurricane areas. In hurricane-prone regions as defined in Section 1609.2 of the *International Building Code*, the following buildings shall be provided with storm shelters:

1. Group A-3 community halls, gymnasiums and libraries.
2. Group B civic administration facilities.
3. Group E, I-1, I-2, I-3, M or R occupancies.
4. Buildings assigned to Risk Category I in accordance with Section 1604.5 of the *International Building Code*.

423.3.2 Tornado areas. In areas where the shelter design wind speed for tornadoes of Figure 304.2.(1) of ICC/NSSA 500 is 160 mph or greater, tornado shelters shall be provided, except that such shelters shall not be required for buildings classified as Group U occupancies or classified as Rick Category I according to Table 1604.5.

423.4 Combined hurricane and tornado shelters. Where combined hurricane and tornado shelters are provided the shelter shall comply with the more stringent requirements of ICC/NSSA-500 for both types of shelters.

Reason: Jurisdictions in high-wind event prone areas are in need of criteria to establish where the presence of storm shelters is required. This continues to be a request from jurisdictions following disastrous high wind events. Following the 2010 disasters in mid-America, specifically during a FEMA sponsored workshop in Alabama, jurisdictions sought information and guidance for integrating storm shelters into their building code requirements. Routinely, and specifically at this workshop, jurisdictions have been directed to the ICC 500, FEMA documents, and design tools provided by the industry sectors supporting the proper design and construction of storm shelters. Increasingly, after every such event, it becomes apparent that the tools for the design and construction of storm shelters are readily available, but what jurisdictions lack is the guidance as to where storm shelters should be required.

In Section 423 of the International Building Code there are provisions referencing the use of ICC 500-2008 ICC/NSSA *Standard for the Design and Construction of Storm Shelters* for design and construction of storm shelters. However, the IBC does

not specify which buildings should be provided with storm shelters. This proposal is to place requirements in the IBC specifying when storm shelters are appropriate.

The first exception communicates that entire buildings can be designed to satisfy the requirements of ICC/NSSA 500. Such buildings not only provide improved life safety but will minimize the amount of energy and resources required for repair, replacement removal and disposal of building materials and contents. It also increases the likelihood these buildings will be available post-disaster to provide for community needs during recovery. The second exception permits the use of a nearby shelter to be used that can be reached in a reasonable amount of time from the building being constructed.

Incorporating storm shelters and community shelters into the design of buildings located in high wind regions enhances the living environment for the occupants. These shelters become havens for protecting people from injury or death due to structural collapse and windborne debris. Additional benefits are enhanced life safety, security and occupant comfort; potentially less demand on community resources required for emergency response and healthcare; and allowing facilities to be more readily adapted for re-use if there is a change of occupancy in the future. The photos below reflect the importance of providing storm shelters in high wind areas.



Tornado damage – FEMA



Hurricane Shelter - FEMA



Tornado Shelter - FEMA

Cost Impact: This proposal will increase the cost of construction

G96-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

423-G-SKALKO-STAFFORD-THOMPSON

G97 – 12

425 (NEW)

Proponent: Larry Stump (lstump@willdan.com), Willdan Engineering, representing Arizona Building Officials Code Review & Development Committee

Add new text as follows:

SECTION 425

DECONTAMINATION ROOMS

425.1 General. Decontamination Rooms shall comply with the provisions of this section and other applicable provisions of this code.

425.2 Definitions. The following terms are defined in Chapter 2:

DECONTAMINATION ROOM

COLD ZONE

HOT ZONE

TRIAGE AREA

WARM ZONE

425.3 Location. A decontamination room shall be provided with an outside entry located as far as practical, but not less than 20 feet from the closest hospital entrance. The decontamination rooms shall be provided with an ambulance staging area.

425.4 Design and construction. All zones within the decontamination room shall be separated by manually activated power sliding glass doors. No two doors shall operate at the same time. Each zone in the decontamination room shall be negative in pressure to the next zone in the progression of route prior to activation of the door between the two zones. The decontamination room shall be served by a dedicated HVAC system specifically designed to support this function and shall not serve other areas of the hospital. Multiple showers with privacy curtains shall be provided for ambulatory and non-ambulatory patient assistance. The room design shall provide for full decontamination of a person within 15 minutes. The cold zone shall connect to the emergence room by means of a connecting corridor. The connecting corridor shall have a minimum width of ninety-six inches and doors shall accommodate the largest non-ambulatory piece of equipment.

425.5 Surfaces. Surfaces shall be smooth, nonporous, and scrubbable. Floors, walls and monolithic ceiling surfaces shall be seamless and be coated with an inert material that enables all surface areas to be washed with soap, water and rinsed by a hose wand. All fixtures, trims and handrails shall be water proof, and acid and rust resistant.

425.6 Electrical. Electrical design, fixtures, switches, receptacles and any other electrical appurtenance associated with a decontamination room shall comply with this section.

425.6.1 Lighting. Explosion-proof lighting fixtures that conform to NFPA 70 Class 1, Division 2, Group D shall be installed. Lighting fixtures shall be UL-listed, explosion-proof pendent type. All luminaries installed in wet locations shall be marked SUITABLE FOR WET LOCATIONS

425.6.2 Switches. Control switches for lighting and equipment in the hot zone shall be located in the warm zone. All switches in the decontamination room shall be equipped with water proof covers, and shall be intrinsically safe per NEC Section 500.7(E).

425.6.3 Receptacles. The decontamination room is considered a wet location and NEC requirements for wet locations are applicable. All receptacles shall meet the requirements of NEC Section 500.7(E).

425.6.4 Standby power. Mechanical ventilation equipment, lighting, receptacles, water heaters, doors and other equipment required for the operation of the decontamination room shall be connected to a standby power system in accordance with Section 909.11.

425.7 Mechanical. Mechanical design, ducts and equipment serving a decontamination room shall comply with this section.

425.7.1 Ventilation. The decontamination room shall be supplied by an external air conditioning system. The mechanical ventilation equipment shall provide not less than 30 air exchanges per hour during periods of decontamination. When the doors are open, the supply-air volume shall maintain not less than 30 psi positive pressure from the entrance of the new zone. Manometers shall be installed adjacent to doors between zones to indicate room pressure on each side of the door. Makeup air and exhaust shall communicate directly to the outdoors and serve no other areas of the building.

Exception: During occupied periods other than decontamination, outdoor air ventilation quantities may be in accordance with IMC Table 403.3 and recirculation is permitted where a rapid change from recirculation to fresh air flow is provided.

425.7.2 Exhaust and Supply Air Units. Both exhaust and supply air units shall be located on the roof and be equipped with special filtering capable of capturing airborne contaminants particles down to 0.3 pm (micrometers) in size. Exhaust termination outlets shall be a minimum of 20 feet from openings or air intakes to buildings.

425.7.3 Air Ducts. Air ducts serving a decontamination room shall not be located within the room and shall not pass through a rated wall or ceiling. Ducts shall pass a leakage pressure test prior to being concealed. Ducts shall be round noncorrosive material within the first 12 feet of the room. Horizontal duct within the first 12 feet shall be sloped a minimum of 1 percent toward the decontamination room register connection.

425.7.4 Grilles and Registers. Grilles and registers installed in a decontamination room shall be made of extruded aluminum material. They shall be surface mounted and have a hinged face for inspection and cleaning. The supply and exhaust air terminals shall be located in walls with the supply located 12 inches below the ceiling and the exhaust located 12 inches above the floor.

425.7.5 Air Balance. The ventilation air distribution system shall be provided with means to adjust the system to achieve the minimum ventilation airflow rate and the pressure differential between zones as required by Sections 425.4 and 425.7.1. A certified third party air balance test is required to verify that the ventilation system is capable of supplying and exhausting the airflow rates required. Air balance shall be completed using an approved method and test certification provided prior to final inspection.

425.8 Plumbing. Plumbing design, piping, fixtures and equipment serving a decontamination room shall comply with this section.

425.8.1 Water Piping. Water piping shall not be exposed in the decontamination room and shall be approved non-corrosive material listed for use within a building. Potable water shall be provided to the room and an approved backflow preventer installed at the supply connection outside of the room.

425.8.2 Shower. The hot zone shall be provided with a minimum of 8 showers, 4 female and 4 male. One male and one female shower shall be large enough to serve a non-ambulatory patient on a gurney. Showers heads shall be the hand held type and the control valve shall be supplied with only one water source with a preset water temperature of 104° F. Each shower shall have its floor sloped 1 percent to an approved 2 inch drain to prevent flow of water to adjacent bathers.

425.8.3 Room Floor Drains. Decontamination rooms shall be provided with 4 inch floor drains connected to the waste system. Floor drains shall be designed to provide rapid wash down of all

surfaces within the room. Floors shall be sloped a minimum of 1 percent to floor drains. Floor and shower drains shall be equipped with automatic trap primers.

425.8.4 Water Wand. Water wands or hose reels shall be located within the decontamination room to provide wash down of all room surfaces.

425.8.5 Waste and Vents. Vents serving decontamination room plumbing traps shall extend through the roof separately or be connected to other vents serving the decontamination room. Vent shall terminate not less than 20 feet from openings or air intakes to buildings. Waste piping serving a decontamination room shall not connect to other waste systems but shall connect directly to the building sewer.

Exception:

1. Where it is not practicable to connect the waste piping directly to the building sewer, connection to an existing building drain pipe is permitted. The connection to an existing horizontal waste pipe shall be located not less than 10 feet from other waste connections.
2. Where no gravity waste piping exists, a properly sized sump is permitted. The sump shall be provided with dual ejector pumps arranged to function alternately during normal use and independently in case of overload or mechanical failure. The pumps shall have an audio and visual alarm, readily accessible, that signals pump failure or an overload condition. The discharge piping from the pumps shall terminate at a direct connection to the sewer. Piping material shall be pressure rated and be double contained with leak detection. All piping shall be pressure tested before final inspection. Pumps shall be connected to the standby power as noted in Section 425.6.4.

425.9 Overflow Facilities. A hospital shall be permitted have a portable decontamination unit or tent to process patients during catastrophic disasters. An exterior tempered water connection, sanitary sewer connection and a standby power connection shall be provided to serve the unit near the ambulance staging area.

Add new definitions to Chapter 2 as follows:

DECONTAMINATION ROOM. A separate area of a hospital divided into not less than three isolated zones (hot, warm and cold) for the purpose of rendering contaminated patients, first responders and hospital staff non-contaminated.

COLD ZONE. An area protected from contaminates and contaminated patients used as the final testing and staging area for patients and hospital staff entering the hospital.

HOT ZONE. An area where individuals are evaluated for possible contamination and where decontamination is performed. This zone is the staging area prior to passing into the "warm zone".

TRIAGE AREA. An admitting room that is entered from outside the hospital and also precedes the decontamination room with no access to other areas of the hospital.

WARM ZONE. A transition area from the hot to cold zone where people are retested for contaminants and determined to be "safe" for transition into the cold zone or "contaminated" and sent back to the hot zone for further decontamination.

Reason: Create a new code section for the minimum design requirements of a decontamination room for the protection of healthcare workers as well as patients and visitors to a hospital. A risk of exposure to chemical, biological, or radiological material exists when a hospital receives contaminated patients, particularly during a mass casualty incident. During "mass casualty hazardous materials incidents", patients that are exposed/contaminated to hazardous materials agent will likely bypass fire department decontamination efforts and self-refer to a hospital emergency room(ER). Hospitals now realize they need a dedicated room for decontamination because a portable decontamination tent may not be adequate.

During a recent code plan review of a hospital decontamination room, I noticed the designer left out basic items that would jeopardize the continued operation and effectiveness of the decontamination room. I would make recommendations to him base on my 23 years of experience in hospital inspections but without an IBC code section to back me up, I had no other option but to approve his plan. Hospitals are adding decontamination rooms because they realize the threat of having their ER exposed. A

search of JACHO, OSHA, AIA and Facilities Guidelines institute, Guideline for Healthcare Facilities resulted in no design standards for decontamination rooms.

The Joint Commission (TJC) and OSHA/Dept. of Commerce regulations require hospital Emergency Departments to prepare for hazardous materials incidents including patient decontamination. American Institute of Architects (AIA) guidelines 7.9.D.25 indicates that a decontamination area shall be provided but as of the submittal date of this new code section, minimum designs for decontamination rooms have not transpired.

Bibliography: D.C. medical center unveils mass casualty design template – Steven K. Wagner March 2008 of HFM magazine; Management of hazmat incidents in hospitals – Dr. Jimmy Chan Business Briefing; Hospital Engineering & Facilities Management 2005; An engineer’s mathematical approach to designing an emergency room decontamination area for weapons of mass destruction casualties – Eldo E. Frezza, Erica Fletcher, Veronica Flores, Ellen Popolo, Fay Tal Placido 2007 Journal of Social Sciences; Recommendations for hospital based hazardous materials decontamination capabilities in the northwest Ohio region – by Gregory Locher for Northwest Ohio Regional Health Care Disaster Preparedness; Decon design by Craig Kampmier; Human decontamination – Wikipedia; Millard Fillmore Suburban Hospital new decontamination room; 5.1.3.7(5) Decontamination Area – Washington State amendments for hospital licensing regulations.

Cost Impact: The code change proposal will increase the cost of construction for existing small hospitals but the cost increase will be insignificant for new construction of a hospital.

G97-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

425 (NEW)-G-STUMP

G98 – 12

425 (NEW), 1507.16, 1507.16.1

Proponent: Sarah A. Rice, C.B.O., The Preview Group (srice@preview-group.com)

Add new text as follows:

SECTION 425 **ROOFTOP GARDENS AND LANDSCAPED ROOFS**

425.1 General. Rooftop gardens and landscaped roofs shall comply with this section.

425.2 Roof construction. Areas of roofs intended for rooftop gardens or landscaped roofs shall be designed for the appropriate loads in accordance with Chapter 16, The roof assembly under rooftop gardens and landscaped roofs shall comply with Section 1505.

425.3 Structural fire resistance. The structural frame and roof construction supporting the load imposed upon the roof by the roof gardens or landscaped roofs shall comply with the requirements of Table 601.

425.4 Roof size. Rooftop garden or landscaped roof areas shall not exceed 15,625 square feet (1,450 m²) in size for any single area with a maximum dimension of 125 feet (39 m) in length or width. A minimum 6-foot-wide (1.8 m) clearance consisting of a Class A-rated roof system complying with ASTM E 108 or UL 790 shall be provided between adjacent rooftop gardens or landscaped roof areas.

425.5 Rooftop structure and equipment clearance. For all vegetated roofing systems abutting combustible vertical surfaces, a Class A-rated roof system complying with ASTM E 108 or UL 790 shall be achieved for a minimum 6-foot-wide (1.8 m) continuous border placed around rooftop structures and all rooftop equipment including, but not limited to, mechanical and machine rooms, penthouses, skylights, roof vents, solar panels, antenna supports, and building service equipment.

425.6. Irrigation. Supplemental irrigation shall be provided to maintain levels of hydration necessary to keep green roof plants alive and to keep dry foliage to a minimum.

426.7 Fire protection systems. Buildings or structures that have rooftop gardens or landscaped roofs and that are equipped with a standpipe system shall have the standpipe system extended to the roof level on which the rooftop garden or landscaped roof is located in accordance with Section 905.3.8

425.8 Maintenance plan. A maintenance plan for vegetation placed on roofs shall be provided as required by Section 317 of the International Fire Code.

Revise as follows:

1507.16 Roof gardens and landscaped roofs. ~~Roof gardens and landscaped roofs shall comply with the requirements of this chapter and Sections 1607.12.3 and 1607.12.3.1 and the *International Fire Code*.~~

1507.16.1 Structural fire resistance. The structural frame and roof construction supporting the load imposed upon the roof by the roof gardens or landscaped roofs shall comply with the requirements of Table 601.

Reason: This proposal seeks to bring the provisions for the construction of rooftop gardens and landscaped roofs which is currently only found in Section 317 of the IFC into the IBC. Many of the provisions found in IFC Section 317 (full text is shown below) are construction related, not maintenance. As such the appropriate place for these requirements is in the IBC with the maintenance provisions remaining in the IFC.

New IBC Section 425 will have the construction requirements for rooftop gardens and landscaped roofs with a reference to the IFC for maintenance items. The changes in Section 1507.16 are correlations with new Section 425. Section 425 now holds the pointers to the applicable IBC provisions and to the IFC for maintenance items.

The correlation between the existing text of Section 317 of the IFC and New Section 425 in the IBC is as follows:

- 425.1 General. (IFC 317.1)
- 425.2 Roof construction. (IFC 317.1)
- 425.3 Structural fire resistance. (IBC 1507.16)
- 425.4 Roof size. (IFC 317.2)
- 425.5 Rooftop structure and equipment clearance. (IFC 317.3)
- 425.6 Irrigation. (IFC 317.4.3)
- 425.7 Fire protection systems. IBC 905.3.8
- 425.8 Maintenance plan. (IFC 317.5)

2012 IFC Section 317 reads as follows:

SECTION 317 ROOFTOP GARDENS AND LANDSCAPED ROOFS

317.1 General. Rooftop gardens and landscaped roofs shall be installed and maintained in accordance with Sections 317.2 through 317.5 and Sections 1505.0 and 1507.16 of the International Building Code.

317.2 Rooftop garden or landscaped roof size. Rooftop garden or landscaped roof areas shall not exceed 15,625 square feet (1,450 m²) in size for any single area with a maximum dimension of 125 feet (39 m) in length or width. A minimum 6-foot-wide (1.8 m) clearance consisting of a Class A-rated roof system complying with ASTM E 108 or UL 790 shall be provided between adjacent rooftop gardens or landscaped roof areas.

317.3 Rooftop structure and equipment clearance. For all vegetated roofing systems abutting combustible vertical surfaces, a Class A-rated roof system complying with ASTM E 108 or UL 790 shall be achieved for a minimum 6-foot-wide (1.8 m) continuous border placed around rooftop structures and all rooftop equipment including, but not limited to, mechanical and machine rooms, penthouses, skylights, roof vents, solar panels, antenna supports, and building service equipment.

317.4 Vegetation. Vegetation shall be maintained in accordance with Sections 317.4.1 and 317.4.2.

317.4.1 Irrigation. Supplemental irrigation shall be provided to maintain levels of hydration necessary to keep green roof plants alive and to keep dry foliage to a minimum.

317.4.2 Dead foliage. Excess biomass, such as overgrown vegetation, leaves and other dead and decaying material, shall be removed at regular intervals not less than two times per year.

317.4.3 Maintenance plan. The fire code official is authorized to require a maintenance plan for vegetation placed on roofs due to the size of a roof garden, materials used, or when a fire hazard exists to the building or exposures due to the lack of maintenance.

317.5 Maintenance equipment. Fueled equipment stored on roofs and used for the care and maintenance of vegetation on roofs shall be stored in accordance with Section 313.

Cost Impact: The code change proposal will not increase the cost of construction.

G98-12

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

425 (NEW)-G-RICE

G99-12

425 (NEW), Chapter 35

Proponent: Jane Malone, National Center for Healthy Housing (jmalone@nchh.org)

Revise as follows:

SECTION 425 **RADON REDUCING CONSTRUCTION FEATURES FOR EDUCATIONAL BUILDING USES**

425.1 General. Occupancies classified as Group E shall comply with the provisions of this section where the building is located in an area of High (Zone 1) Radon Potential as determined by Figure AF101 of Appendix F of the *International Residential Code*.

Exception. Buildings complying with the radon resistant construction techniques for new construction in accordance with Chapter 2 of EPA 625-R-92-016.

425.2 Radon Reducing Construction Features. Buildings shall be equipped with the radon reducing features in Section 425.2.1 through 425.2.12.

425.2.1 Vapor Barrier. A continuous vapor barrier meeting ASTM E1745 Class A, B or C, with any seams overlapped not less than 12 inches (305 mm) and sealed, shall be installed under the slab in basement and slab-on-grade construction and on top of the soil in crawl space construction.

425.2.2 Base Course. Floors of basements and slab-on-grade construction shall be placed over a stone base course, not less than 4 inches (102 mm) in thickness. The stone base course shall have a void ratio of not less than 35 percent, or Size Number 4, 5 or 6 shall be used and shall meet the specifications of ASTM C33.

425.2.3 Solid Vent Pipe. Solid vent pipe shall be installed as follows:

1. Basement slabs with interior foundation pipe drains installed shall have solid 6 inch (153 mm) minimum diameter vent pipe sections installed in conjunction with this drainage system. One independent vent stack pipe shall be installed for every contiguous 15,000 square feet (1392 sq. m), or portion thereof, of slab area, terminating at an approved location, as prescribed in Section 425.2.9, on the exterior of the building. Basement slabs with french drains or channel drains shall not be permitted unless interior foundation pipe drains as described in this section are installed.
2. Excluding non-habitable spaces such as garages, basement slabs that do not have an interior foundation pipe drain, and slab-on-grade construction, shall be provided with one 6 inch (153 mm) minimum diameter solid vent pipe section with a "T" pipe fitting or equivalent for every contiguous 15,000 square feet (1392 sq. m), or portion thereof, of slab area, with this vent pipe section to be installed into the sub-slab aggregate. Each of the horizontal openings of the "T" pipe fitting shall be connected to a minimum of 10 feet (3 m) of 6 inch (153 mm) diameter perforated pipe or equivalent area soil gas collection plenum and placed in the sub-slab aggregate. The vertical portion of the "T" pipe fitting shall be connected to an independent solid vent stack pipe terminating at an approved location, as prescribed in Section 425.2.9, on the exterior of the building. Where more than one vent pipe section is provided, interconnection of these sections into a single independent vent stack is permitted for coverage up to a total area of 15,000 square feet (1392 sq. m) to permit use of a single in-line vent pipe fan when activation of the system is desired.
3. Crawl spaces shall be provided with one 6 inch (153 mm) minimum diameter solid vent pipe section with a "T" pipe fitting or equivalent for every contiguous 15,000 square feet (1392 sq. m), or portion thereof, of crawl space area. Each of the horizontal openings of the "T" pipe fitting shall be connected to a minimum of 10 feet (3 m) of 6 inch (153 mm) diameter perforated pipe or equivalent area soil gas collection plenum and installed upon the soil. The vertical portion of the

"T" pipe fitting shall be connected to an independent solid vent pipe terminating at an approved location on the exterior of the building.

4. In combination basement/crawl space or slab-on-grade/crawl space buildings, a 6 inch (153 mm) minimum diameter solid vent pipe is permitted to be provided between the areas and interconnected into the independent vent stack, for coverage up to a total area of 15,000 square feet (1392 sq. m) to permit use of a single in-line vent pipe fan where activation of the system is desired. Slabs areas divided by internal footings shall be permitted to be joined with piping into a single independent vent stack for coverage up to a total area of 15,000 square feet (1392 sq. m).

425.2.4 Joint and Penetration Sealing. Except for french drains or channel drains, joints in foundation walls and floors, including, without limitation, control joints between slab sections poured separately, and between foundation wall and floor, as well as all other openings and penetrations of the foundation walls and floor including, but not limited to, utility penetrations, shall be substantially sealed by utilizing a caulk complying with ASTM C920 class 25 or greater, in order to close off the soil gas entry routes. Prior to sealing, backer rods shall be used to fill gaps greater than one inch. Any openings or penetrations of the floor over the crawl space shall be substantially sealed in order to close off the soil gas entry routes.

425.2.5 Floor drains. Floor drains shall substantially close off the soil gas entry routes with a water-seal trap or other mechanical means.

425.2.6 Sump Cover. A sump cover which substantially closes off the soil gas entry routes shall be provided for all sump installations. Sump covers shall not be used as a vent pipe location.

425.2.7 Sealing. The following measures shall be provided:

1. No ductwork for supply or return air shall be routed through a crawl space or beneath a slab. Where ductwork passes through or beneath a slab, all openings and joints shall be seamless or properly taped or sealed water-tight.
2. Sealant materials that substantially close off the soil gas entry routes shall be installed on any doors or other openings between basements and adjoining crawl spaces that are vented to the exterior.
3. The tops of foundation walls, including, without limitation, interior ledges, that are constructed of hollow masonry units shall be capped or the voids shall be completely filled.
4. The vapor barrier in a crawlspace shall turn up onto the foundation walls not less than 12 inches (153 mm) and shall be sealed to the wall with a caulk complying with ASTM C920 class 25 or higher or equivalent method.

425.2.8 Vent Stack Installation. The independent vent stack pipe provided in accordance with this section shall be an adequately supported, gas tight, 6 inch (153 mm) minimum diameter solid pipe, through any enclosed portions of the building. Excluding a basement or crawl space, the pipe shall be routed in a manner that makes it accessible for the installation of a future in-line vent pipe fan in a non-conditioned space, and installed in a configuration, and supported in a manner, that will ensure that rain water or condensate accumulation within the pipes will drain downward into the ground beneath the slab or vapor barrier.

425.2.9 Vent Stack Termination. The vent stack pipe shall meet the following termination requirements:

1. Vent pipes shall terminate at least 24 inches (610 mm) above the roof, measured from the highest point where the vent intersects the roof. When a vent pipe extension terminates on an occupiable roof the vent pipe shall extend at least 10 feet (3 m) above the roof surface.

Exception: Buildings more than three stories in height shall be allowed to extend vent pipe terminals through a wall provided that the termination is at least 20 feet (6 m) above grade and is effectively screened.

2. No vent terminal shall be located directly beneath any door, window, or other ventilating opening into the conditioned space of the building or of an adjacent building nor shall any such vent

terminal be within 25 feet (7620 mm) horizontally of such an opening unless it is at least 2 feet (610 mm) above the top of such opening.

3. No vent terminal shall be closer than 25 feet (7620 mm) horizontally from any lot line.

425.2.10 Labeling. Radon vent pipes shall be identifiable and clearly labeled as a radon reduction system at intervals of at least every 10 feet (7620 mm) and at least once in every room or space. The radon reduction system label of any section of vent pipe above the roof shall caution against placement of air intake valves within 10 feet (7620 mm) of the vent pipe discharge.

425.2.11 Electrical Connection for Fan. A dedicated electrical branch circuit terminating in an electrical box shall be installed proximate to each vent stack where a future in-line vent pipe fan and system failure alarms is likely to be installed.

425.2.12 Air Passages. In order to reduce stack effect, air passages that penetrate the conditioned envelope of the building, such as openings installed in top-floor ceilings, shall be closed, gasketed or otherwise sealed with materials approved for such applications.

Add new standard to Chapter 35 as follows:

ASTM

ASTM E 1745-11 Standard Specification for Plastic Water Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs

US EPA Environmental Protection Agency

Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

EPA 625-R-92-016-1994 Radon Prevention in the Design and Construction of Schools and Other Large Buildings.

Reason: The purpose of this requirement is to protect students, faculty, and other staff from exposure to radon gas in the educational environment. This proposed change will reduce radon exposure risk for humans in educational buildings that are constructed in known areas¹ of high radon potential.

The rate of exposure for children and staff in school buildings is second only to exposure in the home.² In the current ICC family of codes, provision for radon control, commonly known as radon-resistant new construction, is contained only in the optional Appendix F for the International Residential Code.

Epidemiological studies confirm that radon increases the risk of lung cancer in the general population. Radon is the second leading cause of lung cancer – second only to smoking – and more significant than secondhand smoke. In the US alone, 21,000 lung cancer deaths each year are caused by radon exposure.³ The World Health Organization estimates that between 3% and 14% of all lung cancer cases worldwide are caused by radon exposure.⁴ The Surgeon General of the United States issued a Health Advisory in 2005 warning Americans about the health risk from exposure to radon in indoor air. Dr. Richard Carmona, the Nation's Chief Physician, urged Americans find out how much radon they might be breathing. Dr. Carmona also stressed the need to remedy the problem as soon as possible when the radon level is 4 pCi/L or more.

Radon is a colorless and odorless gas that is a decay product of uranium and occurs naturally in soil and rock. The main source of high-level radon pollution in buildings is surrounding uranium-containing soil such as granite, shale, phosphate and pitchblende. Radon enters a building through cracks in walls, basement floors, foundations and other openings. There is no known threshold concentration below which radon exposure presents no risk. Even low concentrations of radon can result in a small increase in the risk of lung cancer. EPA recommends that all homes and schools be tested for radon. EPA recommends mitigation if radon is above 4 pCi/L (equivalent to EPA Radon Zone 1) and consideration of mitigation if radon is 2-4 pCi/L (equivalent to Zone 2).⁵ In 2009, the World Health Organization released a report indicating that 100 Bq/m³ or 2.7 pCi/L should be the reference level for radon.⁶

This proposal consists of the subchapter 10 "Radon Hazard Sub-code of the New Jersey Uniform Construction Code" – which applies to all residential and educational uses – combined with revisions consistent with provisions that were accepted for the IGCC 2012. These provisions improve upon the New Jersey standard by improving the cost-efficiency and effectiveness of this existing radon standard.

¹ "Zone Maps," US EPA, <http://www.epa.gov/radon/zonemap.html>

² "Radon in Schools," US EPA, <http://www.epa.gov/radon/pubs/schoolrn.html>

³ "Health Risks," US EPA, <http://www.epa.gov/radon/healthrisks.html>

⁴ "Radon and Cancer," World Health Organization, <http://www.who.int/mediacentre/factsheets/fs291/en/index.html>

⁵ "Health Risks," US EPA, <http://www.epa.gov/radon/healthrisks.html>

⁶ "WHO Handbook on Radon," http://www.who.int/entity/ionizing_radiation/env/9789241547673/en/index.html

Cost Impact: This code change will increase the cost of construction. This change will also save lives.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E 1745 and EPA 625-R-92-016 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2012.

G99-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

426 (NEW)-G-MALONE.doc

G100 – 12

425 (NEW), Chapter 35

Proponent: Jane Malone, National Center for Healthy Housing (jmalone@nchh.org)

Add new text as follows:

SECTION 425 RADON REDUCING CONSTRUCTION FEATURES FOR GROUP R-2 OCCUPANCIES.

425.1. General. Group R-2 Occupancies shall comply with the provisions of this section if the building is located in an area of High (Zone 1) Radon Potential as determined by Figure AF101 of Appendix F of the International Residential Code.

Exception. Buildings complying with Chapter 2 of EPA 625-R-92-016.

425.2. Radon Reducing Construction Features. Buildings shall be equipped with radon reducing features in accordance with Sections 425.2.1 through 425.2.12.

425.2.1 Vapor Barrier. A continuous vapor barrier meeting ASTM E1745 Class A, B or C, with any seams overlapped not less than 12 inches (305 mm) and sealed, shall be installed under the slab in basement and slab-on-grade construction and on the soil in crawl space construction.

425.2.2 Base Course. Floors of basements and slab on grade construction shall be placed over a stone base course, not less than 4 inches (102 mm) in thickness. The stone base course shall have a void ratio of not less than 35 percent, or Size Number 4, 5 or 6 shall be used and shall meet the specifications of ASTM C33.

425.2.3 Solid Vent Pipe. Solid vent pipe shall be installed as follows:

1. Basement slabs with interior foundation pipe drains installed shall have solid 6 inch (153 mm) minimum diameter vent pipe sections installed in conjunction with this drainage system. One independent vent stack pipe shall be installed for every contiguous 15,000 square feet (1392 sq. m), or portion thereof, of slab area, terminating at an approved location, as prescribed in 425.2.9, on the exterior of the building. Basement slabs with French drains or channel drains shall not be allowed unless interior foundation pipe drains as described in this section are installed.
2. Basement slabs which do not have an interior foundation pipe drain, and slab on grade construction (excluding non-habitable spaces such as garages), shall be provided with one 6 inch (153 mm) minimum diameter solid vent pipe section with a "T" pipe fitting or equivalent for every contiguous 15,000 square feet (1392 sq. m), or portion thereof, of slab area, with this vent pipe section to be installed into the sub-slab aggregate. Each of the horizontal openings of the "T" pipe fitting shall be connected to a minimum of 10 feet (3 m) of 6 inch (153 mm) diameter perforated pipe or equivalent area soil gas collection plenum and placed in the sub-slab aggregate. The vertical portion of the "T" pipe fitting shall be connected to an independent solid vent stack pipe terminating at an approved location, as prescribed in 425.2.9, on the exterior of the building. Where more than one vent pipe section is provided, interconnection of these sections into a single independent vent stack is permitted for coverage up to a total area of 15,000 square feet (1392 sq. m) to permit use of a single in-line vent pipe fan if activation of the system is desired.
3. Crawl spaces shall be provided with one 6 inch (153 mm) minimum diameter solid vent pipe section with a "T" pipe fitting or equivalent for every contiguous 15,000 square feet (1392 sq. m), or portion thereof, of crawl space area. Each of the horizontal openings of the "T" pipe fitting shall be connected to a minimum of 10 feet (3 m) of 6 inch (153 mm) diameter perforated pipe or equivalent area soil gas collection plenum and installed upon the soil. The vertical portion of the

"T" pipe fitting shall be connected to an independent solid vent pipe terminating at an approved location on the exterior of the building.

4. In combination basement/crawl space or slab-on-grade/crawl space buildings, a 6 inch (153 mm) minimum diameter solid vent pipe may be provided between the areas and interconnected into the independent vent stack, for coverage up to a total area of 15,000 square feet (1392 sq. m) to permit use of a single in-line vent pipe fan if activation of the system is desired. Slabs areas divided by internal footings may be joined with piping into a single independent vent stack for coverage up to a total area of 15,000 square feet (1392 sq. m).

425.2.4 Joint and Penetration Sealing. Joints in foundation walls and floors, including, without limitation, control joints between slab sections poured separately, and between foundation wall and floor (except for French drains or channel drains), as well as all other openings and penetrations of the foundation walls and floor including, but not limited to, utility penetrations, shall be substantially sealed by utilizing a caulk complying with ASTM C920 class 25 or greater, in order to close off the soil gas entry routes. Prior to sealing, backer rods shall be used to fill gaps greater than one inch. Any openings or penetrations of the floor over the crawl space shall be substantially sealed in order to close off the soil gas entry routes.

425.2.5 Floor drains. Floor drains shall substantially close off the soil gas entry routes with a water-seal trap or other mechanical means.

425.2.6 Sump Cover. A sump cover which substantially closes off the soil gas entry routes shall be provided for all sump installations. Sump covers shall not be used as a vent pipe location.

425.2.7 Sealing. The following measures shall be provided:

1. No ductwork for supply or return air shall be routed through a crawl space or beneath a slab. Where ductwork passes through or beneath a slab, all openings and joints shall be seamless or properly taped or sealed water-tight.
2. Sealant materials that substantially close off the soil gas entry routes shall be installed on any doors or other openings between basements and adjoining crawl spaces that are vented to the exterior.
3. The tops of foundation walls, including, without limitation, interior ledges, that are constructed of hollow masonry units shall be capped or the voids shall be completely filled.
4. The vapor barrier in a crawlspace shall turn up onto the foundation walls not less than 12 inches (153 mm) and shall be sealed to the wall with a caulk complying with ASTM C920 class 25 or higher or equivalent method.

425.2.8 Vent Stack Installation. The independent vent stack pipe provided in accordance with this section shall be an adequately supported, gas tight, 6 inch (153 mm) minimum diameter solid pipe, through any enclosed portions of the building. The pipe shall be routed in a manner that makes it accessible for the installation of a future in-line vent pipe fan in a non-conditioned (not heated or cooled) space excluding a basement or crawl space, and installed in a configuration, and supported in a manner, that will ensure that rain water or condensate accumulation within the pipes will drain downward into the ground beneath the slab or vapor barrier.

425.2.9 Vent Stack Termination. The vent stack pipe shall meet the following termination requirements:

1. Vent pipes shall terminate at least 24 inches (610 mm) above the roof, measured from the highest point where the vent intersects the roof. When a vent pipe extension terminates on an occupiable roof the vent pipe shall extend at least 10 feet (3 m) above the roof surface.
Exception: Buildings more than three stories in height shall be allowed to extend vent pipe terminals through a wall provided that the termination is at least 20 feet (6 m) above grade and is effectively screened.
2. No vent terminal shall be located directly beneath any door, window, or other ventilating opening into the conditioned space of the building or of an adjacent building nor shall any such vent

terminal be within 25 feet (7620 mm) horizontally of such an opening unless it is at least 2 feet (610 mm) above the top of such opening.

3. No vent terminal shall be closer than 25 feet (7620 mm) horizontally from any lot line.

425.2.10 Labeling. Radon vent pipes shall be identifiable and clearly labeled as a radon reduction system at intervals of at least every 10 feet (7620 mm) and at least once in every room or space. The radon reduction system label of any section of vent pipe above the roof shall caution against placement of air intake valves within 10 feet (7620 mm) of the vent pipe discharge.

425.2.11 Electrical Connection for Fan. A dedicated electrical branch circuit terminating in an electrical box shall be installed proximate to each vent stack where a future in-line vent pipe fan and system failure alarms may be installed.

425.2.12 Air Passages. In order to reduce stack effect, air passages that penetrate the conditioned envelope of the building, such as openings installed in top-floor ceilings, shall be closed, gasketed or otherwise sealed with materials approved for such applications.

Add new standard to Chapter 35 as follows:

ASTM

ASTM E 1745-11 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs

US EPA Environmental Protection Agency

Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

EPA 625-R-92-016-1994 Radon Prevention in the Design and Construction of Schools and Other Large Buildings.

Reason: The purpose of this requirement is to protect occupants from deadly exposure to radon gas in the multifamily residential environment. **This proposed change will reduce radon exposure risk for occupants of multifamily residential buildings that are constructed in known areas¹ of high radon potential.**

In the current ICC family of codes, provision for radon control, commonly known as radon-resistant new construction, is contained only in the optional Appendix F for the International Residential Code. We intend to propose changes to the IRC in 2013 to require radon resistant new construction in the next code change cycle.

Epidemiological studies confirm that radon increases the risk of lung cancer in the general population. Radon is the second leading cause of lung cancer – second only to smoking – and more significant than secondhand smoke. In the US alone, 21,000 lung cancer deaths each year are caused by radon exposure.² The World Health Organization estimates that between 3% and 14% of all lung cancer cases worldwide are caused by radon exposure.³ The Surgeon General of the United States issued a Health Advisory in 2005 warning Americans about the health risk from exposure to radon in indoor air. Dr. Richard Carmona, the Nation's Chief Physician, urged Americans find out how much radon they might be breathing. Dr. Carmona also stressed the need to remedy the problem as soon as possible when the radon level is 4 pCi/L or more.

Radon is a colorless and odorless gas that is a decay product of uranium and occurs naturally in soil and rock. The main source of high-level radon pollution in buildings is surrounding uranium-containing soil such as granite, shale, phosphate and pitchblende. Radon enters a building through cracks in walls, basement floors, foundations and other openings. There is no known threshold concentration below which radon exposure presents no risk. Even low concentrations of radon can result in a small increase in the risk of lung cancer. EPA recommends that all homes and schools be tested for radon. EPA recommends mitigation if radon is above 4 pCi/L (equivalent to EPA Radon Zone 1) and consideration of mitigation if radon is 2-4 pCi/L (equivalent to Zone 2).⁴ In 2009, the World Health Organization released a report indicating that 100 Bq/m³ or 2.7 pCi/L should be the reference level for radon.⁵

This proposal consists of the subchapter 10 "Radon Hazard Sub-code of the New Jersey Uniform Construction Code" – which applies to all residential and educational uses – combined with revisions consistent with provisions that were accepted for the IGCC 2012. These provisions improve upon the New Jersey standard by improving the cost-efficiency and effectiveness of this existing radon standard.

¹ "Zone Maps," US EPA, <http://www.epa.gov/radon/zonemap.html>

² "Health Risks," US EPA, <http://www.epa.gov/radon/healthrisks.html>

³ "Radon and Cancer," World Health Organization, <http://www.who.int/mediacentre/factsheets/fs291/en/index.html>

⁴ "Health Risks," US EPA, <http://www.epa.gov/radon/healthrisks.html>

⁵ "WHO Handbook on Radon," http://www.who.int/entity/ionizing_radiation/env/9789241547673/en/index.html

Referenced Standards - New

ASTM E 1745 (attached)

Referenced Standards – Existing

ASTM C 33
ASTM C 920

Cost Impact: This code change will increase the cost of construction. This change will also save lives.

Analysis: A review of the standard proposed for inclusion in the code, ASTM E 1745 and EPA 625-R-92-016 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2012.

G100-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

425 (NEW) #2-G-MALONE

G101 – 12

406.6.1, [F] 415.8.1.1, [F] 415.8.2.1.1, Table 503, 503.1, 503.1.1, 503.1.2, 503.1.3, 504, 504.1, 504.1.1 (NEW), 504.1.2 (NEW), 504.1.3 (NEW), 504.2, 504.3, Table 504.3 (NEW), 505.4, Table 504.4 (NEW), 506, 508.8, 507.8.1, 507.8.1.1, 507.8.4, 508.2.1, 508.2.2, 508.2.3, 510.2, 3102.4, 3102.5, 3412.6.1 (IEBC [B] 1412.6.1), 3412.6.1.1 (IEBC [B] 1412.6.1.1), 3412.6.2 (IEBC [B] 1412.6.2), 3412.6.2.1 (IEBC [B] 1412.6.2.1)

Proponent: Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee

Revise as follows:

406.6.1 Heights and areas. Enclosed vehicle parking garages and portions thereof that do not meet the definition of *open parking garages* shall be limited to the allowable heights and areas specified in ~~Table 503~~ Sections 504 and 506 as modified by ~~Sections 504, 506 and~~ Section 507. Roof parking is permitted.

[F] 415.8.1.1 Type of construction and height exceptions. Buildings shall be constructed in compliance with the height, number of stories and area limitations of ~~Table 503~~ specified in Sections 504 and 506 for Group H-2; except that where erected of Type I or II construction, the heights and areas of grain elevators and similar structures shall be unlimited, and where of Type IV construction, the maximum *building height* shall be 65 feet (19 812 mm) and except further that, in isolated areas, the maximum *building height* of Type IV structures shall be increased to 85 feet (25 908 mm).

[F] 415.8.2.1.1 Height exception. Where storage tanks are located within a building no more than one *story above grade plane*, the height limitation of Section ~~503~~ 504 shall not apply for Group H.

SECTION 503 GENERAL BUILDING HEIGHT AND AREA LIMITATIONS

503.1 General. The *building height, number of stories and area* shall not exceed the limits specified in ~~Table 503~~ Sections 504 and 506 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified hereafter. Building height, number of stories and area provisions shall be applied independently. Each portion of a building separated by one or more *fire walls* complying with Section 706 shall be considered to be a separate building.

503.1.1 Special industrial occupancies. Buildings and structures designed to house special industrial processes that require large areas and unusual *building heights* to accommodate cranes or special machinery and equipment, including, among others, rolling mills; structural metal fabrication shops and foundries; or the production and distribution of electric, gas or steam power, shall be exempt from the *building height, number of stories and area* limitations of ~~Table 503~~ specified in Sections 504 and 506.

503.1.2 Buildings on same lot. Two or more buildings on the same *lot* shall be regulated as separate buildings or shall be considered as portions of one building if the *building height, number of stories* of each building and the aggregate *building area* of the buildings are within the limitations of ~~Table 503~~ as modified by specified in Sections 504 and 506. The provisions of this code applicable to the aggregate building shall be applicable to each building.

503.1.3 Type I construction. Buildings of Type I construction permitted to be of unlimited tabular *building heights and areas* are not subject to the special requirements that allow unlimited area buildings in Section 507 or unlimited *building height* in Sections 503.1.1 and 504.3.

TABLE 503 ALLOWABLE BUILDING HEIGHTS AND AREAS^{a, b}

**Building height limitations shown in feet above grade plane. Story limitations shown as stories above grade plane.
Building area limitations shown in square feet, as determined by the definition of "Area, building," per story**

SECTION 504
BUILDING HEIGHT AND NUMBER OF STORIES

504.1 General. The *building height* permitted by Table 503, in feet, and the number of stories of a building shall be increased in accordance with Sections 504.2 and 504.3 determined based on the type of construction, occupancy classification, and whether or not there is an automatic sprinkler system installed throughout the building.

Exception: The *building height* of one-story aircraft hangars, aircraft paint hangars and buildings used for the manufacturing of aircraft shall not be limited if the building is provided with an *automatic sprinkler system* or *automatic fire-extinguishing system* in accordance with Chapter 9 and is entirely surrounded by *public ways* or *yards* not less in width than one and one-half times the *building height*.

504.1.1 Unlimited area buildings. The height of unlimited area buildings shall be designed in accordance with Section 507.

504.1.2 Special Provisions. The requirements in Section 510, "Special Provisions", shall permit the use of special conditions that are exempt from, or modify, the specific requirements of this chapter regarding the allowable heights of buildings based on the occupancy classification and type of construction, provided the special condition complies with the provisions specified in Section 510.

504.1.3 Fire-resistance rating substitution. Where sprinklers are substituted for one hour construction in accordance with Table 601, Footnote d, the height and number of stories shall be determined based on the provisions applicable to buildings not equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

504.2 Automatic sprinkler system increase. ~~Where a building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one. These increases are permitted in addition to the *building area* increase in accordance with Sections 506.2 and 506.3. For Group R buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.2, the value specified in Table 503 for maximum *building height* is increased by 20 feet (6096 mm) and the maximum number of *stories* is increased by one, but shall not exceed 60 feet (18 288 mm) or four *stories*, respectively.~~

Exception: ~~The use of an automatic sprinkler system to increase *building heights* shall not be permitted for the following conditions:~~

- ~~1. Buildings, or portions of buildings, classified as a Group I-2 occupancy of Type IIB, III, IV or V construction.~~
- ~~2. Buildings, or portions of buildings, classified as a Group H-1, H-2, H-3 or H-5 occupancy.~~
- ~~3. Buildings where an automatic sprinkler system is substituted for fire-resistance rated construction in accordance with Table 601, Note d.~~

504.2 Mixed occupancy. In a building containing mixed occupancies in accordance with Section 508, no individual occupancy shall exceed the height and number of story limits specified in this section for the applicable occupancies.

504.3 Height in feet. The maximum height, in feet, of a building shall not exceed the limits specified in Table 504.3.

504.3 Roof structures. Exception: Towers, spires, steeples and other roof structures shall be constructed of materials consistent with the required type of construction of the building except where other construction is permitted by Section 1509.2.5. Such structures shall not be used for habitation or storage. The structures shall be unlimited in height if of noncombustible materials and shall not extend

more than 20 feet (6096 mm) above the allowable *building height* if of combustible materials (see Chapter 15 for additional requirements).

TABLE 504.3^a
ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION									
	SEE FOOTNOTES	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
A,B,E,F,M,S,U	NS ^b	UL	160	65	55	65	55	65	50	40
	S	UL	180	85	75	85	75	85	70	60
H-1, H-2, H-3, H-5	NS ^{c,d}	UL	160	65	55	65	55	65	50	40
	S	UL	180	85	75	85	75	85	70	60
H-4	NS ^{c,d}	UL	160	65	55	65	55	65	50	40
	S	UL	180	85	75	85	75	85	70	60
I-1, I-3	NS ^{d,e}	UL	160	65	55	65	55	65	50	40
	S	UL	180	85	75	85	75	85	70	60
I-2	NS ^{d,f}	UL	160	65	55	65	55	65	50	40
	S	UL	180	85	75	85	75	85	70	60
I-4	NS ^{d,g}	UL	160	65	55	65	55	65	50	40
	S	UL	180	85	75	85	75	85	70	60
R	NS ^{d,h}	UL	160	65	55	65	55	65	50	40
	S13R	60	60	60	60	60	60	60	60	60
	S	UL	180	85	75	85	75	85	70	60

For SI: 1 foot = 304.8mm

UL = Unlimited

NS = Buildings not equipped throughout with an automatic sprinkler system.

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2.

- a. See Chapter 4 for specific exceptions to the allowable height in this Chapter 5.
- b. See Section 903.2 for minimum sprinkler thresholds for specific occupancies.
- c. New Group H occupancies required to be sprinklered in accordance with Section 903.2.5.
- d. The NS value is only for use in evaluation of existing building height in accordance with Section 3412.6.1.
- e. New Group I-1 and I-3 occupancies required to be sprinklered in accordance with Section 903.2.6. For New Group I-1 Occupancy, see also Section 903.2.6, Exceptions 1 and 2.
- f. New and existing Group I-2 occupancies required to be sprinklered in accordance with Section 903.2.6 and IFC Section 1103.5.
- g. New Group I-4 occupancies see Section 903.2.6 Exceptions 3 and 4.
- h. New Group R occupancies required to be sprinklered in accordance with Section 903.2.8.

504.4 Number of stories. The maximum number of stories of a building shall not exceed the limits specified in Table 504.4.

TABLE 504.4^{a,b}
ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION					
	SEE	TYPE I	TYPE II	TYPE III	TYPE IV	TYPE V

	FOOT- NOTES							IV		
		A	B	A	B	A	B	HT	A	B
A-1	NS	UL	5	3	2	3	2	3	2	1
	S	UL	6	4	3	4	3	4	3	2
A-2	NS	UL	11	3	2	3	2	3	2	1
	S	UL	12	4	3	4	3	4	3	2
A-3	NS	UL	11	3	2	3	2	3	2	1
	S	UL	12	4	3	4	3	4	3	2
A-4	NS	UL	11	3	2	3	2	3	2	1
	S	UL	12	4	3	4	3	4	3	2
A-5	NS	UL								
	S	UL								
B	NS	UL	11	5	3	5	3	5	3	2
	S	UL	12	6	4	6	4	6	4	3
E	NS	UL	5	3	2	3	2	3	1	1
	S	UL	6	4	3	4	3	4	2	2
F-1	NS	UL	11	4	2	3	2	4	2	1
	S	UL	12	5	3	4	3	5	3	2
F-2	NS	UL	11	5	3	4	3	5	3	2
	S	UL	12	6	4	5	4	6	4	3
H-1	NS ^{c,e}		1	1	1	1	1	1	1	NP
	S									
H-2	NS ^{c,e}	UL	3	2	1	2	1	2	1	1
	S									
H-3	NS ^{c,e}	UL	6	4	2	4	2	4	2	1
	S									
H-4	NS ^{c,e}	UL	7	5	3	5	3	5	3	2
	S	UL	8	6	4	6	4	6	4	3
H-5	NS ^{c,e}		4	4	3	3	3	3	3	2
	S									
I-1	NS ^{d,e}	UL	9	4	3	4	3	4	3	2
	S	UL	10	5	4	5	4	5	4	3
I-2	NS ^{e,t}	UL	4	2	1	1	NP	1	1	NP
	S	UL	5	3						
I-3	NS ^{d,e}	UL	4	2	1	2	1	2	2	1
	S	UL	5	3	2	3	2	3	3	2
I-4	NS ^{e,g}	UL	5	3	2	3	2	3	1	1
	S	UL	6	4	3	4	3	4	2	2
M	NS	UL	11	4	2	4	2	4	3	1
	S	UL	12	5	3	5	3	5	4	2
R-1	NS ^{e,h}	UL	11						3	2
	S13R	4	4	4	4	4	4	4	4	3
	S	UL	12	5	5	5	5	5	4	3
R-2	NS ^{e,h}	UL	11						3	2
	S13R	4	4	4	4	4	4	4	4	3
	S	UL	12	5	5	5	5	5	4	3
R-3	NS ^{e,h}	UL	11						3	3
	S13R	4	4	4	4	4	4	4	4	4
	S	UL	12	5	5	5	5	5	4	4
R-4	NS ^{e,h}	UL	11						3	2
	S13R	4	4	4	4	4	4	4	4	3
	S	UL	12	5	5	5	5	5	4	3
S-1	NS	UL	11	4	2	3	2	4	3	1

	<u>S</u>	<u>UL</u>	<u>12</u>	<u>5</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>5</u>	<u>4</u>	<u>2</u>
<u>S-2</u>	<u>NS</u>	<u>UL</u>	<u>11</u>	<u>5</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>4</u>	<u>4</u>	<u>2</u>
	<u>S</u>	<u>UL</u>	<u>12</u>	<u>6</u>	<u>4</u>	<u>5</u>	<u>4</u>	<u>5</u>	<u>5</u>	<u>3</u>
<u>U</u>	<u>NS</u>	<u>UL</u>	<u>5</u>	<u>4</u>	<u>2</u>	<u>3</u>	<u>2</u>	<u>4</u>	<u>2</u>	<u>1</u>
	<u>S</u>	<u>UL</u>	<u>6</u>	<u>5</u>	<u>3</u>	<u>4</u>	<u>3</u>	<u>5</u>	<u>3</u>	<u>2</u>

UL = Unlimited. NP = Not Permitted

NS = Buildings not equipped throughout with an automatic sprinkler system.

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2.

- a. See Chapter 4 for specific exceptions to the allowable stories in this Chapter 5.
- b. See Section 903.2 for minimum sprinkler thresholds for specific occupancies.
- c. New Group H occupancies required to be sprinklered in accordance with Section 903.2.5.
- d. New Group I-1 and I-3 occupancies required to be sprinklered in accordance with Section 903.2.6. For New I-1 Occupancy, see also Section 903.2.6, Exceptions 1 and 2.
- e. The NS value is only for use in evaluation of existing building height in accordance with Section 3412.6.1.
- f. New and existing Group I-2 occupancies required to be sprinklered in accordance with Section 903.2.6 and IFC Section 1103.5.
- g. New Group I-4 occupancies see Section 903.2.6, Exceptions 3 and 4.
- h. New Group R occupancies required to be sprinklered in accordance with Section 903.2.8.

SECTION 505 MEZZANINES AND EQUIPMENT PLATFORMS

(Portions of text not shown remain unchanged)

Delete and substitute as follows:

SECTION 506 BUILDING AREA MODIFICATIONS

506.1 General. ~~The building areas limited by Table 503 shall be permitted to be increased due to frontage (*If*) and automatic sprinkler system protection (*Is*) in accordance with Equation 5-1:~~

~~$$A_a = \{A_t + [A_t \times I_f] + [A_t \times I_s]\} \text{ (Equation 5-1)}$$~~

~~where:~~

~~*A_a* = Allowable building area per story (square feet).~~

~~*A_t* = Tabular building area per story in accordance with Table 503 (square feet).~~

~~*I_f* = Area increase factor due to frontage as calculated in accordance with Section 506.2.~~

~~*I_s* = Area increase factor due to sprinkler protection as calculated in accordance with Section 506.3.~~

506.2 Frontage increase. Every building shall adjoin or have access to a *public way* to receive a *building area* increase for frontage. Where a building has more than 25 percent of its perimeter on a *public way* or open space having a width of not less than 20 feet (6096 mm), the frontage increase shall be determined in accordance with Equation 5-2:

~~$$I_f = [F/P - 0.25]W/30 \text{ (Equation 5-2)}$$~~

~~where:~~

~~*I_f* = Area increase due to frontage.~~

~~*F* = Building perimeter that fronts on a *public way* or open space having 20 feet (6096 mm) open minimum width (feet).~~

~~*P* = Perimeter of entire building (feet).~~

~~*W* = Width of *public way* or open space (feet) in accordance with Section 506.2.1.~~

Weighted average $W = (L1 \times w1 + L2 \times w2 + L3 \times w3 \dots) / F$. **(Equation 5-3)**

where:

L_n = Length of a portion of the exterior perimeter wall.

w_n = Width of open space associated with that portion of the exterior perimeter wall.

F = Building perimeter that fronts on a *public way* or open space having a width of 20 feet (6096 mm) or more.

Exception: Where the building meets the requirements of Section 507, as applicable, except for compliance with the 60-foot (18 288 mm) *public way* or *yard* requirement, and the value of W is greater than 30 feet (9144 mm), the value of W divided by 30 shall be limited to a maximum of 2.

506.2.2 Open space limits. Such open space shall be either on the same *lot* or dedicated for public use and shall be accessed from a street or *approved fire lane*.

506.3 Automatic sprinkler system increase. Where a building is equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, the *building area* limitation in Table 503 is permitted to be increased by an additional 200 percent ($Is = 2$) for buildings with more than one *story above grade plane* and an additional 300 percent ($Is = 3$) for buildings with no more than one *story above grade plane*. These increases are permitted in addition to the height and *story* increases in accordance with Section 504.2.

Exception: The use of an *automatic sprinkler system* to increase the building area limitation shall not be permitted for the following conditions:

1. Buildings classified as a Group H-1 occupancy.
2. Buildings, or portions of buildings, classified as either a Group H-2 or H-3 occupancy. For buildings containing such occupancies, the allowable area shall be determined in accordance with Section 508.4.2, with the sprinkler system increase applicable only to the portions of the building not classified as Group H-2 or H-3.
3. Buildings where an *automatic sprinkler system* is substituted for fire-resistance-rated construction in accordance with Table 601, Note d.

506.4 Single occupancy buildings with more than one story. The total allowable *building area* of a single occupancy building with more than one *story above grade plane* shall be determined in accordance with this section. The actual aggregate *building area* at all *stories* in the building shall not exceed the total allowable *building area*.

Exception: A single *basement* need not be included in the total allowable *building area*, provided such *basement* does not exceed the area permitted for a building with no more than one *story above grade plane*.

506.4.1 Area determination. The total allowable *building area* of a single occupancy building with more than one *story above grade plane* shall be determined by multiplying the allowable *building area per story* (A_a), as determined in Section 506.1, by the number of *stories above grade plane* as listed below:

1. For buildings with two *stories above grade plane*, multiply by 2;
2. For buildings with three or more *stories above grade plane*, multiply by 3; and
3. No *story* shall exceed the allowable *building area per story* (A_a), as determined in Section 506.1, for the occupancies on that *story*.

Exceptions:

1. Unlimited area buildings in accordance with Section 507.

~~2. The maximum area of a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.2 shall be determined by multiplying the allowable area per story (A_a), as determined in Section 506.1, by the number of stories above grade plane.~~

~~**506.5 Mixed occupancy area determination.** The total allowable building area for buildings containing mixed occupancies shall be determined in accordance with the applicable provisions of this section. A single basement need not be included in the total allowable building area, provided such basement does not exceed the area permitted for a building with no more than one story above grade plane.~~

~~**506.5.1 No more than one story above grade plane.** For buildings with no more than one story above grade plane and containing mixed occupancies, the total building area shall be determined in accordance with the applicable provisions of Section 508.1.~~

~~**506.5.2 More than one story above grade plane.** For buildings with more than one story above grade plane and containing mixed occupancies, each story shall individually comply with the applicable requirements of Section 508.1. For buildings with more than three stories above grade plane, the total building area shall be such that the aggregate sum of the ratios of the actual area of each story divided by the allowable area of such stories based on the applicable provisions of Section 508.1 shall not exceed 3.~~

SECTION 506 **BUILDING AREA**

506.1 General. The floor area of a building shall be determined based on the type of construction, occupancy classification, whether or not there is an automatic sprinkler system installed throughout the building, and the amount of building frontage on public way or open space.

506.1.1 Unlimited area buildings. Unlimited area buildings shall be designed in accordance with Section 507.

506.1.2 Special Provisions. The requirements in Section 510, "Special Provisions", shall permit the use of special conditions that are exempt from, or modify, the specific requirements of this chapter regarding the allowable areas of buildings based on the occupancy classification and type of construction, provided the special condition complies with the provisions specified in Section 510.

506.1.3 Fire-resistance rating substitution. Where sprinklers are substituted for one hour construction in accordance with Table 601, Footnote d, the floor area of the building shall be determined based on the provisions applicable to buildings not equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

506.1.4 Basements. Single story basements need not be included in the total allowable floor area of a building provided the total basement floor area does not exceed that permitted for a one-story building.

506.2 Allowable area determination. The allowable area of a building shall be determined in accordance with the applicable provisions of Sections 506.2.1 through 506.2.4 and Section 506.3.

506.2.1 Single occupancy, one-story buildings. The allowable area of a single occupancy building with no more than one story above grade plane shall be determined in accordance with Equation 5-1:

$$A_a = A_t + (NS \times I_f) \quad \text{(Equation 5-1)}$$

where:

A_a = Allowable area (square feet).

A_t = Tabular allowable area factor (NS, S1, or S13R value, as applicable) in accordance with Table 506.2.

NS = Tabular allowable area factor in accordance with Table 506.2 for non-sprinklered building

(regardless of whether or not the building is sprinklered).

I_f = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.

506.2.2 Mixed occupancy, one-story buildings. The allowable area of a mixed occupancy building with no more than one story above grade plane shall be determined in accordance with the applicable provisions of Section 508.1.

506.2.2.1 Group H-2 or H-3 mixed occupancies. For a building containing Group H-2 or H-3 occupancies, the allowable area shall be determined in accordance with Section 508.4.2, with the sprinkler system increase applicable only to the portions of the building not classified as Group H-2 or H-3.

506.2.3 Single occupancy, multi-story buildings. The allowable area of a single occupancy building with more than one story above grade plane shall be determined in accordance with Equation 5-2:

$$A_a = [A_t + (NS \times I_f)] \times S_a \quad \text{(Equation 5-2)}$$

where:

A_a = Allowable area (square feet).

A_t = Tabular allowable area factor (NS, S13R, or SM value, as applicable) in accordance with Table 506.2.

NS = Tabular allowable area factor in accordance with Table 506.2 for non-sprinklered building (regardless of whether or not the building is sprinklered).

I_f = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.

S_a = Actual number of building stories above grade plane, not to exceed 3. For buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2, use the actual number of building stories above grade plane, not to exceed 4.

No individual story shall exceed the allowable area (A_a) as determined by Equations 5-2 using the value of $S_a = 1$.

506.2.4 Mixed occupancy, multi-story buildings. Each story of a mixed occupancy building with more than one story above grade plane shall individually comply with the applicable requirements of Section 508.1. For buildings with more than three stories above grade plane, the total building area shall be such that the aggregate sum of the ratios of the actual area of each story divided by the allowable area of such stories based on the applicable provisions of Section 508.1 shall not exceed 3.

506.2.4.1 Group H-2 or H-3 mixed occupancies. For a building containing Group H-2 or H-3 occupancies, the allowable area shall be determined in accordance with Section 508.4.2, with the sprinkler system increase applicable only to the portions of the building not classified as Group H-2 or H-3.

TABLE 506.2^{a,b}
ALLOWABLE AREA FACTOR (A_t = NS, S1, S13R, or SM, as applicable) IN SQUARE FEET

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
A-1	NS	UL	UL	15,500	8,500	14,000	8,500	15,000	11,500	5,500
	S1	UL	UL	62,000	34,000	56,000	34,000	60,000	46,000	22,000
	SM	UL	UL	46,500	25,500	42,000	25,500	45,000	34,500	16,500
A-2	NS	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
	S1	UL	UL	62,000	38,000	56,000	38,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	45,000	34,500	18,000
A-3	NS	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	45,000	34,500	18,000
	NS	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
A-4	S1	UL	UL	62,000	38,000	56,000	38,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	45,000	34,500	18,000
A-5	NS	UL	UL	UL	UL	UL	UL	UL	UL	UL
	S1	UL	UL	UL	UL	UL	UL	UL	UL	UL
	SM	UL	UL	UL	UL	UL	UL	UL	UL	UL
B	NS	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000
	S1	UL	UL	150,000	92,000	114,000	76,000	144,000	72,000	36,000
	SM	UL	UL	112,500	69,000	85,500	57,000	108,000	54,000	27,000
E	NS	UL	UL	26,500	14,500	23,500	14,500	25,500	18,500	9,500
	S1	UL	UL	106,000	58,000	94,000	58,000	102,000	74,000	38,000
	SM	UL	UL	79,500	43,500	70,500	43,500	76,500	55,500	28,500
F-1	NS	UL	UL	25,000	15,500	19,000	12,000	33,500	14,000	8,500
	S1	UL	UL	100,000	62,000	76,000	48,000	134,000	56,000	34,000
	SM	UL	UL	75,000	46,500	57,000	36,000	100,500	42,000	25,500
F-2	NS	UL	UL	37,500	23,000	28,500	18,000	50,500	21,000	13,000
	S1	UL	UL	150,000	92,000	114,000	72,000	202,000	84,000	52,000
	SM	UL	UL	112,500	69,000	85,500	54,000	151,500	63,000	39,000
H-1	NSc	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	NP
	S1									
H-2	NSc	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	3,000
	S1									
	SM									
H-3	NSc	UL	60,000	26,500	14,000	17,500	13,000	25,500	10,000	5,000
	S1									
	SM									
H-4	NSc,d	UL	UL	37,500	17,500	28,500	17,500	36,000	18,000	6,500
	S1	UL	UL	150,000	70,000	114,000	70,000	144,000	72,000	26,000
	SM	UL	UL	112,500	52,500	85,500	52,500	108,000	54,000	19,500
H-5	NSc,d	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000
	S1	UL	UL	150,000	92,000	114,000	76,000	144,000	72,000	36,000
	SM	UL	UL	112,500	69,000	85,500	57,000	108,000	54,000	27,000
I-1	NSc,e,f	UL	55,000	19,000	10,000	16,500	10,000	18,000	10,500	4,500
	S1	UL	220,000	76,000	40,000	66,000	40,000	72,000	42,000	18,000
	SM	UL	165,000	57,000	30,000	49,500	30,000	54,000	31,500	13,500

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
I-2	NSd.g	UL	UL	15,000	11,000	12,000	NP	12,000	9,500	NP
	S1	UL	UL	60,000	44,000	48,000	NP	48,000	38,000	NP
	SM	UL	UL	45,000	33,000	36,000	NP	36,000	28,500	NP
I-3	NSd.e	UL	UL	15,000	10,000	10,500	7,500	12,000	7,500	5,000
	S1	UL	UL	45,000	40,000	42,000	30,000	48,000	30,000	20,000
	SM	UL	UL	45,000	30,000	31,500	22,500	36,000	22,500	15,000
I-4	NSd.e.h	UL	60,500	26,500	13,000	23,500	13,000	25,500	18,500	9,000
	S1	UL	121,000	106,000	52,000	94,000	52,000	102,000	74,000	36,000
	SM	UL	181,500	79,500	39,000	70,500	39,000	76,500	55,500	27,000
M	NS	UL	UL	21,500	12,500	18,500	12,500	20,500	14,000	9,000
	S1	UL	UL	86,000	50,000	74,000	50,000	82,000	56,000	36,000
	SM	UL	UL	64,500	37,500	55,500	37,500	61,500	42,000	27,000
R-1	NSd.i	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
	S13R									
	S1	UL	UL	96,000	64,000	96,000	64,000	82,000	48,000	28,000
R-2	SM	UL	UL	72,000	48,000	72,000	48,000	61,500	36,000	21,000
	NSd.i	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
	S13R									
R-3	S1	UL	UL	96,000	64,000	96,000	64,000	82,000	48,000	28,000
	SM	UL	UL	72,000	48,000	72,000	48,000	61,500	36,000	21,000
	NSd.i	UL	UL	UL	UL	UL	UL	UL	UL	UL
R-4	S13R									
	S1	UL	UL	96,000	64,000	96,000	64,000	82,000	48,000	28,000
	SM	UL	UL	72,000	48,000	72,000	48,000	61,500	36,000	21,000
S-1	NS	UL	48,000	26,000	17,500	26,000	17,500	25,500	14,000	9,000
	S1	UL	192,000	104,000	70,000	104,000	70,000	102,000	56,000	36,000
	SM	UL	144,000	78,000	52,500	78,000	52,500	76,500	42,000	27,000
S-2	NS	UL	79,000	39,000	26,000	39,000	26,000	38,500	21,000	13,500
	S1	UL	316,000	156,000	104,000	156,000	104,000	154,000	84,000	54,000
	SM	UL	237,000	117,000	78,000	117,000	78,000	115,500	63,000	40,500
U	NS	UL	35,500	19,000	8,500	14,000	8,500	18,000	9,000	5,500
	S1	UL	142,000	76,000	34,000	56,000	34,000	72,000	36,000	22,000
	SM	UL	106,500	57,000	25,500	42,000	25,500	54,000	27,000	16,500

For SI: 1 square foot = 0.0929m²

UL = Unlimited, NP = Not permitted.

NS = Buildings not equipped throughout with an automatic sprinkler system.

S1 = Buildings maximum of one story above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

SM = Buildings two or more stories above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2.

- a. See Chapter 4 for specific exceptions to the allowable area in this Chapter 5.
- b. See Section 903.2 for minimum sprinkler thresholds for specific occupancies.
- c. New Group H occupancies required to be sprinklered in accordance with Section 903.2.5.
- d. The NS value is only for use in evaluation of existing building area in accordance with Section 3412.6.2.
- e. New Group I-1 and I-3 occupancies required to be sprinklered in accordance with Section 903.2.6.
- f. For New I-1 Occupancy, see also Section 903.2.6, Exceptions 1 and 2.
- g. New and existing I-2 occupancies required to be sprinklered in accordance with Section 903.2.6 and IFC Section 1103.5.
- h. New Group I-4 occupancies see Section 903.2.6, Exceptions 3 and 4.
- i. New Group R occupancies required to be sprinklered in accordance with Section 903.2.8.

506.3 Frontage increase. Every building shall adjoin or have access to a *public way* to receive an area factor increase based on frontage. Area factor increase shall be determined in accordance with Sections 506.3.1 through 506.3.3.

506.3.1 Minimum percentage of perimeter. To qualify for an area factor increase based on frontage, a building shall have not less than 25 percent of its perimeter on a *public way* or open space. Such open space shall be either on the same lot or dedicated for public use and shall be accessed from a street or *approved fire lane*.

506.3.2 Minimum frontage distance. To qualify for an area factor increase based on frontage, the *public way* or open space adjacent to the building perimeter shall have a minimum distance (*W*) of 20 feet (6096 mm) measured at right angles from the building face to any of the following:

1. The closest interior lot line.
2. The entire width of a street, alley or public way.
3. To the exterior face of an adjacent building on the same property.

Where the value of *W* is greater than 30 feet (9144 mm), a value of 30 feet (9144 mm) shall be used in calculating the building area increase based on frontage, regardless of the actual width of the *public way* or open space. Where the value of *W* varies along the perimeter of the building, the calculation performed in accordance with Equation 5-4 shall be based on the weighted average calculated in accordance with Equation 5-3.

$$W = (L_1 \times w_1 + L_2 \times w_2 + L_3 \times w_3 \dots) / F \quad \text{(Equation 5-3)}$$

where:

W (Width: weighted average) = Calculated width of public way or open space (feet).

L_n = Length of a portion of the exterior perimeter wall.

w_n = Width (≥ 20 feet) of a public way or open space associated with that portion of the exterior perimeter wall.

F = Building perimeter that fronts on a *public way* or open space having a width of 20 feet (6096 mm) or more.

Exception: Where the building meets the requirements of Section 507, as applicable, except for compliance with the minimum 60-foot (18 288 mm) *public way or yard* requirement, and the value of *W* is greater than 30 feet (9144 mm), the value of *W* shall not exceed 60 feet (18 288 mm).

506.3.3 Amount of increase. The area factor increase based on frontage shall be determined in accordance with the following:

$$I_f = [F/P - 0.25]W/30 \quad \text{(Equation 5-4)}$$

where:

I_f = Area factor increase due to frontage.

F = Building perimeter that fronts on a *public way* or open space having minimum distance of 20 feet (6096 mm).

P = Perimeter of entire building (feet).

W = Width of *public way* or open space (feet) in accordance with Section 506.3.2.

Revise as follows:

507.8 Group H-2, H-3 and H-4 occupancies. Group H-2, H-3 and H-4 occupancies shall be permitted in unlimited area buildings containing Group F and S occupancies in accordance with Sections 507.3 and 507.4 and the provisions of Sections 507.8.1 through 507.8.4.

507.8.1 Allowable area. The aggregate floor area of Group H occupancies located in an unlimited area building shall not exceed 10 percent of the area of the building nor the area limitations for the Group H occupancies as specified in ~~Table 503 as modified by Section 506.2~~ Section 506 based upon the perimeter of each Group H floor area that fronts on a *public way* or open space.

507.8.1.1 Located within the building. The aggregate floor area of Group H occupancies not located at the perimeter of the building shall not exceed 25 percent of the area limitations for the Group H occupancies as specified in ~~Table 503~~ Section 506.

507.8.4 Height limitations. For two-story unlimited area buildings, Group H occupancies shall not be located more than one *story above grade plane* unless permitted based on the allowable height ~~in and~~ number of stories and feet as ~~set forth in Table 503 for~~ specified in Section 504 based on the type of construction of the unlimited area building.

~~**508.2.1 Area limitations.** Aggregate accessory occupancies shall not occupy more than 10 percent of the building area of the story in which they are located and shall not exceed the tabular values in Table 503, without building area increases in accordance with Section 506 for such accessory occupancies.~~

508.2.2 508.2.1 Occupancy classification. Accessory occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space.

508.2.2 Allowable building height. The allowable height and number of stories of the building shall be in accordance with Section 504 for the main occupancy of the building. The allowable height and number of stories for each accessory occupancy shall not exceed the tabular values for nonsprinklered buildings in Table 504.3 and Table 504.4 for such accessory occupancy.

~~**508.2.3 Allowable building area and height.** The allowable building area and height of the building shall be based on the allowable building area and height for the main occupancy in accordance with Section 503.1. The height of each accessory occupancy shall not exceed the tabular values in Table 503, without increases in accordance with Section 504 for such accessory occupancies. The building area of the accessory occupancies shall be in accordance with Section 508.2.1.~~

508.2.3 Allowable building area. The allowable area of the building shall be based on the applicable provisions of Section 506 for the main occupancy of the building. Aggregate accessory occupancies shall not occupy more than 10 percent of the floor area of the story in which they are located and shall not exceed the tabular values for nonsprinklered buildings in Table 506.2 for each such accessory occupancies.

510.2 Horizontal building separation allowance. A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of *fire walls*, limitation of number of *stories* and type of construction where all of the following conditions are met:

1. through 6. (no change)
7. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 503 504.3 for the building having the smaller allowable height as measured from the *grade plane*.

3102.4 Allowable floor areas. The area of a membrane structure shall not exceed the limitations set forth in Table 503, except as provided in specified in Section 506.

3102.5 Maximum height. Membrane structures shall not exceed one *story* nor shall such structures exceed the height limitations in feet set forth in Table 503 specified in Section 504.3.

Exception: Noncombustible membrane structures serving as roofs only.

3412.6.1 (IEBC [B] 1412.6.1) Building height and number of stories. The value for building height and number of stories shall be the lesser value determined by the formula in Section 3412.6.1.1. ~~Chapter 5 Section 504~~ shall be used to determine the allowable height and number of stories of the building, including allowable increases due to automatic sprinklers as provided for in Section 504.2. Subtract the actual *building height* in feet from the allowable and divide by 12 1/2 feet. Enter the height value and its sign (positive or negative) in Table 3412.7 under Safety Parameter 3412.6.1, Building Height, for fire safety, means of egress and general safety. The maximum score for a building shall be 10.

3412.6.1.1 (IEBC [B] 1412.6.1.1) Height formula. The following formulas shall be used in computing the building height value.

$$\text{Height value, feet} = \frac{(AH) - (EBH)}{12.5} \times CF \quad \text{(Equation 34-1)}$$

$$\text{Height value, feet} = (AS - EBS) \times CF \quad \text{(Equation 34-2)}$$

where:

AH = Allowable height in feet from ~~Table 503~~ Section 504.

EBH = Existing *building height* in feet.

AS = Allowable height in stories from ~~Table 503~~ Section 504.

EBS = Existing building height in stories.

CF = 1 if (AH) – (EBH) is positive.

CF = Construction-type factor shown in Table 3412.6.6(2) if (AH) – (EBH) is negative.

Note: Where mixed occupancies are separated and individually evaluated as indicated in Section 3412.6, the values AH, AS, EBH and EBS shall be based on the height of the occupancy being evaluated.

3412.6.2 (IEBC 1412.6.2) Building area. The value for building area shall be determined by the formula in Section 3412.6.2.2. Section ~~503~~ 506 and the formula in Section 3412.6.2.1 shall be used to determine the allowable area of the building. ~~This shall include any allowable increases due to frontage and automatic sprinklers as provided for in Section 506.~~ Subtract the actual *building area* in square feet from the allowable area and divide by 1,200 square feet. Enter the area value and its sign (positive or negative) in Table 3412.7 under Safety Parameter 3412.6.2, Building Area, for fire safety, means of

egress and general safety. In determining the area value, the maximum permitted positive value for area is 50 percent of the fire safety score as *listed* in Table 3412.8, Mandatory Safety Scores.

3412.6.2.1 (IEBC [B] 1412.6.2.1) Allowable area formula. The following formula shall be used in computing allowable area:

$$A_a = \{A_t + [A_t \times If] + [A_t \times Is]\} \quad \text{(Equation 34-3)}$$

$$A_a = A_t + (NS \times If) \quad \text{(Equation 34-3)}$$

where:

A_a = Allowable *building* area per story (square feet).

A_t = Tabular *building* allowable area per story factor (NS, S1, S13R, or SM value, as applicable) in accordance with Table 503 506.2 (square feet).

NS = Tabular allowable area factor in accordance with Table 506.2 for non-sprinklered building (regardless of whether or not the building is sprinklered).

~~Is = Area increase factor due to sprinkler protection as calculated in accordance with Section 506.3.~~

If = Area factor increase factor due to for frontage as calculated in accordance with Section ~~506.2~~ 506.3.

Reason: This proposal rewrites current IBC allowable area and height provisions in an attempt to provide an increased degree of user friendliness and technical consistency to these fundamental requirements. To anyone not looking very closely at this code proposal, it may appear to be a dramatic change from current provisions, but the BCAC can assure you that it is not. Although this proposal modifies the format and technical language for allowable area and height determination, for all intents and purposes it can be regarded as being an editorial code change. That is, the code user will achieve exactly the same design solution in the 2015 IBC using the proposed improved methodology as that which results from the 2012 IBC.

Currently, Section 503.1 references Table 503 as the starting point of allowable area and height determination. This proposal references the code text Sections 504, "Building Height and Number of Stories", and 506, "Building Area", as the starting point that will now give structure to the design process. Existing Table 503, that represented unmodified base allowable area and height data, has been separated into three specific tables and placed in context at the appropriate technical sections for the design or review process. Table 504.3, "Allowable Building Height in Feet Above Grade Plane", Table 504.4, "Allowable Number of Stories Above Grade Plane" and Table 506.2, "Allowable Area Factor", now provide the allowable value based on the three (3) required variables to determine the height and area of a building:

1. Occupancy classification of the building
2. Type of construction of the building, and
3. Whether or not the building is sprinklered and if it is sprinklered, the type of sprinkler system provided.

Inputting the above-required variables into these three revised tables effectively eliminates all the many exceptions currently found in Sections 504.2 and 506.3, reducing the possibility of an error of omission or misunderstanding that is common with some users of the Code. The exceptions in the 2012 IBC Sections 504.2 and 506.3 were seamlessly incorporated into the new Tables so there is no way of misinterpreting what is required under the Code. Also, new footnotes in the revised tables will now correlate the mandatory sprinkler requirements in Section 903 with the height and area requirements in Chapter 5.

Using revised Section 504 that references Tables 504.3 & 504.4 makes determining the allowable building height in feet, and number of stories a very straight-forward exercise. Simply enter the appropriate table based on the applicable construction type, occupancy classification and sprinkler protection variables to determine the allowable value (and you are finished!). The footnotes in the tables provide the necessary cross-references and amplification for general specific exceptions under Chapter 4, Chapter 9 or Chapter 34. This is the first time that the height and area calculations in the Code Tables have been correlated with the sprinkler thresholds in Section 903 that were missed by many code users in the past.

Allowable building area determination is formula driven using the allowable area factor values in new Table 506.2 which are the existing values in the current 2012 IBC Table 503; however, the added values for "S1" & "SM" are multiplied out for use with the single story and multi-story sprinklered buildings. The "S1" (one story building sprinklered per NFPA 13) value is the "NS" (Nonsprinklered) value multiplied by 4 (old base Table value + 3 times the old Table value), the "SM" (multi-story building sprinklered per NFPA 13) value is the "NS" (Nonsprinklered) value multiplied by 3 (old base Table value + 2 times the old Table value), and the S13R (building sprinklered per NFPA 13R) value is the same value as the "NS" (Nonsprinklered) value. Sections 506.2.1, 506.2.2, 506.2.3 and 506.2.4 provide specific procedures and the formulas for allowable area determination based on tabular values chosen from Table 506.2 based on the building under consideration and on the frontage increase calculated under Section 506.3. The Section 506.3, "frontage increase", provisions have been reworded to clarify the existing frontage increase determination procedure. Accounting for potential building area increases by sequentially starting at Section 506.1 and ending at 506.3.3 will provide the total allowable building area without referring back and forth between non-sequentially arranged code sections, Table 503 and footnotes as is the current procedure with the 2012 IBC.

A comparison of the 2012 and 2015 allowable area and height determination procedures reveals a much more simple process and identical answers to the exercise:

GIVEN:

Occupancy classification: Group B

Actual number of stories: 4
 Actual Height above grade plane: 80'
 Actual floor area/story = 100,000 sq. ft. (400,000 aggregate floor area for the entire building)
 Type of construction: Type IIA
 Sprinkler protection: NFPA 13
 Frontage: around the entire building has 50 feet open space (100% open)

DETERMINE:

Total allowable building area and height in feet and stories.

2012 IBC Procedure:

- Step 1: Read charging language at Section 503.1.
- Step 2: Read charging language at Section 504.1.
- Step 3: Read Section 504.2 and note that sprinklered building receives 20' increase and one story increase in height in Table 503 if none of the exceptions in Section 504.2 are applicable.
- Step 4: Obtain tabular data from Table 503 (yields 65 ft and 5 stories) and apply increases from Step 3 (yields: 85 ft > 80 ft actual ✓ and 6 stories > 4 stories actual ✓)
- Step 5: Read Section 506.1 and then go to Table 503 to get A_t value (yields 37,500 sq. ft.) for use in Equation 5-1
- Step 6: Read Section 506.2 and determine applicable allowable area frontage increase from Equations 5-2 & 5-3 (yields $I_f = 0.75$).
- Step 7: Read Section 506.6 and its exceptions and determine applicable allowable area sprinkler increase from Section 506.3 (yields $I_s = 2$).
- Step 8: Solve for A_a in Equation 5-1 in Section 506.1 using values obtained in Steps 5-7 (yields $A_a = 140,625$ sf).
- Step 9: Read Section 506.4 and determine total building area for this 4 story building using Section 506.4.1(2) (yields $3 \times 140,625 = 421,875$ sq. ft. > 400,000 sq. ft. actual ✓).
- Step 10: Determine maximum allowable per story for this 4 story building using Section 506.4.1(3) (yields from Step 8 = 140,624 sq. ft. > 100,000 sq. ft. actual ✓). Finished.

2015 IBC Procedure:

- Step 1: Read charging language at Section 503.1.
- Step 2: Read charging language at Section 504.1.
- Step 3: Read Sections 504.1 to Section 504.3 and determine allowable building height in feet from Section Table 504.3 (yields 85 ft > 80 ft actual ✓).
- Step 4: Read Section 504.4 and determine allowable building height in stories from Section Table 504.4 (yields: 6 stories > 4 stories actual ✓).
- Step 5: Read Sections 506.1 to 506.2.3 and determine the values required for determining maximum building floor area in Equations 5-2 (yields A_t from Table 506.2 as 112,500 sq. ft for SM value, 37,500 sq. ft for NS value, $S_a = 3$, and to determine I_f need to go Section 506.3 (See Step 6))
- Step 6: Read Section 506.3 to 506.3.3 and determine applicable allowable area frontage increase from Equations 5-2 & 5-3 (yields $I_f = 0.75$).
- Step 7: Using values obtained in Steps 5 & 6 determine the maximum building floor area using Equations 5-2 (yields $112,500 \times 37,500(0.75) \times 3 = 421,875$ sq. ft. > 400,000 sq. ft. actual ✓).
- Step 8: Determine maximum allowable per story for this 4 story building using Equation 5-2 with $S_a = 1$ (yields $112,500 \times 37,500(0.75) \times 1 = 140,625$ sq. ft. > 100,000 sq. ft. actual ✓). Finished.

Several other sections other than Sections 503, 504 and 506 that referenced Table 503 directly have been revised to correlate the proper cross-reference to the revised allowable area and height determination procedures.

This proposal combines, organizes and rewords former allowable area and height provisions that resulted in a somewhat confusing multi-step process for value determination that new code users had a very difficult time learning. Through an improved sequential format and technical consolidation, this process has been greatly simplified resulting in consistency for area and height determinations.

In summary, all current technical provisions relative to allowable area and height determination have been retained. This code proposal is intended to greatly improve the functionality and consistency of the International Building Code in this fundamental, and important, area of allowable area and height determination.

Please review the following matrixes that account for the 2012 vs. 2015 IBC locations for relative technical requirements made by this code proposal.

2012 IBC Table	Proposed 2015 IBC Table
Table 503	Table 504.3 for Height in Feet

	Table 504.4 for Height in Stories
	Table 506.2 for Allowable Area Factor
Table 503 Footnote "a.1"	Sprinkler increase due to height built into Table 504.3. Sprinkler increase due to stories built into Table 504.4.
Table 503 Footnote "a.2"	New format of the title of Table 506.2 and revised layout and calculation method in Section 506.2 using Equations 5-1 & 5-2 eliminate the need for Footnote "a.2"
Table 503 Footnote "a.3"	Sprinkler increase due to area built into Table 506.2
Table 503 Footnote "a.4"	Sections 504.1.1 & 506.1.1
Table 503 Footnote "b"	Table 504.3 Footnote "a" Table 504.4 Footnote "a" Table 506.2 Footnote "a"
2012 IBC Section	Proposed 2015 IBC Section/Table
503.1	503.1
503.1.1	503.1.1
503.1.2	503.1.2
503.1.3	503.1.3
504.1	504.1
504.1 Exception	504.1 Exception
504.2	Table 504.3 & Table 504.4
504.2 Exception #1	Table 504.3 & Table 504.4 under the rows for Group I-2 and the columns for Construction Types IIB, III, IV and V.
504.2 Exception #2	Table 504.3 & Table 504.4 under the rows for Groups H-1, H-2, H-3 and H-5
504.2 Exception #3	Section 504.1.3
504.3	504.3 Exception
506.1	506.2.1 Equation 5-1 and 506.2.3 Equation 5-2
506.2	506.3.3
506.2 Equation 5-2	506.3.3 Equation 5-4
506.2.1	506.3.2
506.2.1 Equation 5-3	506.3.2 Equation 5-3
506.2.1 Exception	506.3.2 Exception
506.2.2	506.3.1
506.3	Table 506.2 in the rows for each occupancy
506.3 Exception #1	Table 506.2 in the rows for H-1 occupancy
506.3 Exception #2	506.2.2.1 and 506.2.4.1
506.3 Exception #3	506.1.3
506.4	506.2.3
506.4 Exception	506.1.4
506.4.1	506.2.1 (Equation 5-1) for one story building 506.2.3 (Equation 5-2 with S _a value)
506.4.1 Exception #1	506.1.1
506.4.1 Exception #2	506.2.3 (built into S _a value description)
506.5	506.1.4
506.5.1	506.2.2
506.5.2	506.2.4

Changes shown in Table below in legislative format:

2012 IBC Table	Proposed 2015 IBC Table
Table 503	Table 504.3 for Height in Feet Table 504.4 for Height in Stories Table 506.2 for Allowable Area Factor
Table 503 Footnote "a.1" a. See the following sections for general exceptions to Table 503: 1. Section 504.2, Allowable building height and story increase due to automatic sprinkler system installation.	Sprinkler increase due to height built into Table 504.3. Sprinkler increase due to stories built into Table 504.4.
Table 503 Footnote "a.2"	New format of the title of Table 506.2 and revised layout and

a. See the following sections for general exceptions to Table 503: 2. Section 506.2, Allowable building area increase due to street frontage.	calculation method in Section 506.2 using Equations 5-1 & 5-2 eliminate the need for Footnote "a.2"
Table 503 Footnote "a.3" a. See the following sections for general exceptions to Table 503: 3. Section 506.3, Allowable building area increase due to automatic sprinkler system installation.	Sprinkler increase due to area built into Table 506.2
Table 503 Footnote "a.4" a. See the following sections for general exceptions to Table 503: 4. Section 507, Unlimited area buildings.	504.1.1 Unlimited area buildings. The height of unlimited area buildings shall be designed in accordance with Section 507. 506.1.1 Unlimited area buildings. Unlimited area buildings shall be designed in accordance with Section 507.
Table 503 Footnote "b" b See Chapter 4 for specific exceptions to the allowable height and areas in Chapter 5.	Table 504.3 Footnote "a" a. See Chapter 4 for specific exceptions to the allowable height in this Chapter 5. Table 504.4 Footnote "a" a. See Chapter 4 for specific exceptions to the allowable stories in this Chapter 5. Table 506.2 Footnote "a" a. See Chapter 4 for specific exceptions to the allowable area in this Chapter 5.
2012 IBC Section	Proposed 2015 IBC Section/Table
503.1 General. The <i>building height and area</i> shall not exceed the limits specified in Table 503 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified hereafter. Each portion of a building separated by one or more <i>fire walls</i> complying with Section 706 shall be considered to be a separate building.	503.1 General. The <i>building height, number of stories and area</i> shall not exceed the limits specified in Table 503 <u>Sections 504 and 506</u> based on the type of construction as determined by Section 602 and the occupancies <u>occupancy classification</u> as determined by Section 302, except as modified hereafter. <u>Building height, number of stories and area provisions shall be applied independently.</u> Each portion of a building separated by one or more <i>fire walls</i> complying with Section 706 shall be considered to be a separate building.
503.1.1 Special industrial occupancies. Buildings and structures designed to house special industrial processes that require large areas and unusual <i>building heights</i> to accommodate craneways or special machinery and equipment, including, among others, rolling mills; structural metal fabrication shops and foundries; or the production and distribution of electric, gas or steam power, shall be exempt from the <i>building height and area</i> limitations of Table 503.	503.1.1 Special industrial occupancies. Buildings and structures designed to house special industrial processes that require large areas and unusual <i>building heights</i> to accommodate craneways or special machinery and equipment, including, among others, rolling mills; structural metal fabrication shops and foundries; or the production and distribution of electric, gas or steam power, shall be exempt from the <i>building height, number of stories and area</i> limitations of Table 503 <u>specified in Sections 504 and 506.</u>
503.1.2 Buildings on same lot. Two or more buildings on the same <i>lot</i> shall be regulated as separate buildings or shall be considered as portions of one building if the <i>building height</i> of each building and the aggregate <i>building area</i> of the buildings are within the limitations of Table 503 as modified by Sections 504 and 506. The provisions of this code applicable to the aggregate building shall be applicable to each building.	503.1.2 Buildings on same lot. Two or more buildings on the same lot shall be regulated as separate buildings or shall be considered as portions of one building if the <i>building height, number of stories</i> of each building and the aggregate <i>building area</i> of the buildings are within the limitations of Table 503 <u>specified in Sections 504 and 506.</u> The provisions of this code applicable to the aggregate building shall be applicable to each building.
503.1.3 Type I construction. Buildings of Type I construction permitted to be of unlimited tabular <i>building heights and areas</i> are not subject to the special requirements that allow unlimited area buildings in Section 507 or unlimited <i>building height</i> in Sections 503.1.1 and 504.3 or increased <i>building heights and areas</i> for other types of construction.	503.1.3 Type I construction. Buildings of Type I construction permitted to be of unlimited tabular <i>building heights and areas</i> are not subject to the special requirements that allow unlimited area buildings in Section 507 or unlimited <i>building height</i> in Sections 503.1.1 and 504.3. <u>Exception</u> or increased <i>building heights and areas</i> for other types of construction. (No Change to text)
504.1 General. The <i>building height</i> permitted by Table 503 shall be increased in accordance with Sections 504.2 and	504.1 General. The <u>building-height, in feet, and the number of stories of a building permitted by Table 503</u> shall be increased in

504.3.	accordance with Sections 504.2 and 504.3 determined based on the type of construction, occupancy classification, and whether or not there is an automatic sprinkler system installed throughout the building.
504.1 Exception: The <i>building height</i> of one-story aircraft hangars, aircraft paint hangars and buildings used for the manufacturing of aircraft shall not be limited if the building is provided with an <i>automatic sprinkler system</i> or <i>automatic fire-extinguishing system</i> in accordance with Chapter 9 and is entirely surrounded by <i>public ways</i> or <i>yards</i> not less in width than one and one-half times the <i>building height</i> .	504.1 Exception: The <i>building height</i> of one-story aircraft hangars, aircraft paint hangars and buildings used for the manufacturing of aircraft shall not be limited if the building is provided with an automatic fire-extinguishing system in accordance with Chapter 9 and is entirely surrounded by <i>public ways</i> or <i>yards</i> not less in width than one and one-half times the <i>building height</i> .
504.2 Automatic sprinkler system increase. Where a building is equipped throughout with an <i>approved automatic sprinkler system</i> in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum <i>building height</i> is increased by 20 feet (6096 mm) and the maximum number of <i>stories</i> is increased by one. These increases are permitted in addition to the <i>building area</i> increase in accordance with Sections 506.2 and 506.3. For Group R buildings equipped throughout with an <i>approved automatic sprinkler system</i> in accordance with Section 903.3.1.2, the value specified in Table 503 for maximum <i>building height</i> is increased by 20 feet (6096 mm) and the maximum number of <i>stories</i> is increased by one, but shall not exceed 60 feet (18 288 mm) or four <i>stories</i> , respectively.	Built into Table 504.3 & Table 504.4.
504.2 Exception 1: The use of an <i>automatic sprinkler system</i> to increase <i>building heights</i> shall not be permitted for the following conditions: 1. Buildings, or portions of buildings, classified as a Group I-2 occupancy of Type IIB, III, IV or V construction.	Built into Table 504.3 & Table 504.4 under the rows for Group I-2 and the columns for Construction Types IIB, III, IV and V.
504.2 Exception 2: The use of an <i>automatic sprinkler system</i> to increase <i>building heights</i> shall not be permitted for the following conditions: 2. Buildings, or portions of buildings, classified as a Group H-1, H-2, H-3 or H-5 occupancy.	Built into Table 504.3 & Table 504.4 under the rows for Groups H-1, H-2, H-3 and H-5
504.2 Exception 3: The use of an <i>automatic sprinkler system</i> to increase <i>building heights</i> shall not be permitted for the following conditions: 3. Buildings where an <i>automatic sprinkler system</i> is substituted for fire-resistance rated construction in accordance with Table 601, Note d.	504.1.3 Fire-resistance rating substitution. Where sprinklers are substituted for one hour construction in accordance with Table 601, Footnote d, the height and number of stories shall be determined based on the provisions applicable to buildings not equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
504.3 Roof structures. Towers, spires, steeples and other roof structures shall be constructed of materials consistent with the required type of construction of the building except where other construction is permitted by Section 1509.2.5. Such structures shall not be used for habitation or storage. The structures shall be unlimited in height if of noncombustible materials and shall not extend more than 20 feet (6096 mm) above the allowable <i>building height</i> if of combustible materials (see Chapter 15 for additional requirements).	Exception: 504.3 Roof structures. Towers, spires, steeples and other roof structures shall be constructed of materials consistent with the required type of construction of the building except where other construction is permitted by Section 1509.2.5. Such structures shall not be used for habitation or storage. The structures shall be unlimited in height if of noncombustible materials and shall not extend more than 20 feet above the allowable <i>building height</i> if of combustible materials (see Chapter 15 for additional requirements).
506.1 General. The <i>building areas</i> limited by Table 503 shall be permitted to be increased due to frontage (<i>If</i>) and <i>automatic sprinkler system</i> protection (<i>Is</i>) in accordance with Equation 5-1: $A_a = \{A_t + [A_t \times If] + [A_t \times Is]\}$ (Equation 5-1) where: <i>A_a</i> = Allowable <i>building area per story</i> (square feet). <i>A_t</i> = Tabular <i>building area per story</i> in accordance with Table 503 (square feet). <i>If</i> = Area increase factor due to frontage as calculated in accordance with Section 506.2. <i>Is</i> = Area increase factor due to sprinkler protection as calculated in accordance with Section 506.3.	See 506.2.1 Equation 5-1 and 506.2.3 Equation 5-2 506.2.1 Single occupancy, one-story buildings. The allowable area of a single occupancy building with no more than one story above grade plane shall be determined in accordance with Equation 5-1: $A_a = A_t + (NS \times I_f)$ (Equation 5-1) where: <i>A_a</i> = Allowable area (square feet). <i>A_t</i> = Tabular allowable area factor (NS, S1, or S13R value, as applicable) in accordance with Table 506.2. NS = Tabular allowable area factor in accordance with Table 506.2 for non-sprinklered building (regardless of whether or not the building is

	<p>sprinklered).</p> <p>I_f = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.</p> <p>506.2.3 Single occupancy, multi-story buildings. The allowable area of a single occupancy building with more than one story above grade plane shall be determined in accordance with Equation 5-2:</p> <p>$A_a = [A_t + (NS \times I_f)] \times S_a$ (Equation 5-2)</p> <p>where:</p> <p>A_a = Allowable area (square feet).</p> <p>A_t = Tabular allowable area factor (NS, S13R, or SM value, as applicable) in accordance with Table 506.2.</p> <p>NS = Tabular allowable area factor in accordance with Table 506.2 for non-sprinklered building (regardless of whether or not the building is sprinklered).</p> <p>I_f = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.</p> <p>S_a = Actual number of building stories above grade plane, not to exceed 3. For buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2, use the actual number of building stories above grade plane, not to exceed 4.</p> <p>No individual story shall exceed the allowable area (A_a) as determined by Equations 5-2 using the value of $S_a = 1$.</p>
<p>506.2 Frontage increase. Every building shall adjoin or have access to a <i>public way</i> to receive a <i>building area</i> increase for frontage. Where a building has more than 25 percent of its perimeter on a <i>public way</i> or open space having a width of not less than 20 feet (6096 mm), the frontage increase shall be determined in accordance with Equation 5-2:</p> <p>$I_f = [F/P - 0.25]W/30$ (Equation 5-2)</p> <p>where:</p> <p>I_f = Area increase due to frontage.</p> <p>F = Building perimeter that fronts on a <i>public way</i> or open space having 20 feet (6096 mm) open minimum width (feet).</p> <p>P = Perimeter of entire building (feet).</p> <p>W = Width of <i>public way</i> or open space (feet) in accordance with Section 506.2.1.</p>	<p>506.3.3 Amount of increase. The area factor increase based on increase shall be determined in accordance with the following:</p> <p>$I_f = [F/P - 0.25]W/30$ (Equation 5-4)</p> <p>where:</p> <p>I_f = Area factor increase due to frontage.</p> <p>F = Building perimeter that fronts on a <i>public way</i> or open space having minimum dimension distance of 20 feet (6096 mm).</p> <p>P = Perimeter of entire building (feet)</p> <p>W = Width of <i>public way</i> or open space (feet) in accordance with Section 506.2.1-506.3.2.</p>
<p>506.2.1 Width limits. To apply this section the value of W shall be not less than 20 feet (6096 mm). Where the value of W varies along the perimeter of the building, the calculation performed in accordance with Equation 5-2 shall be based on the weighted average calculated in accordance with Equation 5-3 for portions of the exterior perimeter walls where the value of W is greater than or equal to 20 feet (6096 mm). Where the value of W is greater than 30 feet (9144 mm), a value of 30 feet (9144 mm) shall be used in calculating the weighted average, regardless of the actual width of the open space. W shall be measured perpendicular from the face of the building to the closest interior <i>lot line</i>. Where the building fronts on a <i>public way</i>, the entire width of the <i>public way</i> shall be used. Where two or more buildings are on the same <i>lot</i>, W shall be measured from the exterior face of a each building to the opposing exterior face of each adjacent building, as applicable. Weighted average $W = (L_1 \square w_1 + L_2 \square w_2 + L_3 \square w_3 \dots)/F$.</p> <p>(Equation 5-3)</p> <p>where:</p> <p>L_n = Length of a portion of the exterior perimeter wall.</p> <p>w_n = Width of open space associated with that portion of the exterior perimeter wall.</p> <p>F = Building perimeter that fronts on a <i>public way</i> or open space having a width of 20 feet (6096 mm) or more.</p>	<p>506.2.1 Width limits-506.3.2 Minimum frontage distance. To apply this section the value of W shall not be less than 20 feet. quality for an area factor increase based on frontage, the <i>public way</i> or open space adjacent to the building perimeter shall have a minimum distance (W) of 20 feet (6096 mm) measured at right angles from the building face to any of the following:</p> <ol style="list-style-type: none"> 1. The closest interior lot line. 2. the entire width a street, alley or <i>public way</i>. 3. to the exterior face of an adjacent building on the same property. <p>Where the value of W varies along the perimeter of the building, the calculation performed in accordance with Equation 5-4 shall be based on the weighted average calculated in accordance with Equation 5-3 for portions of the exterior perimeter walls where the value of W is equal to or greater than 20 feet (6096 mm). Where the value of W is greater than 30 feet (9144 mm), a value of 30 feet (9144 mm) shall be used in calculating the <u>building area increase based on frontage weighted average</u>, regardless of the actual width of the <i>public way</i> or open space. W shall be measured perpendicular from the face of the building to the closest interior <i>lot line</i>. Where the building fronts on a <i>public way</i>, the entire width of the <i>public way</i> shall be used. Where two or more buildings are on the same lot, W shall be measured from the exterior face of the building to the exterior face of an opposing building, as applicable. Where the value of W varies along the perimeter of the building, the calculation performed in accordance</p>

	<p>with Equation 5-4 shall be based on the weighted average calculated in accordance with Equation 5-3.</p> <p>Weighted-average $W = (L_1 \times w_1 + L_2 \times w_2 + L_3 \times w_3 \dots) / F$.</p> <p>(Equation 5-3)</p> <p>where:</p> <p>W (Width: weighted average) = Calculated width of public way or open space (feet)</p> <p>L_n = Length of a portion of the exterior perimeter wall.</p> <p>w_n = Width (≥ 20 feet) of a public way or open space associated with that portion of the exterior perimeter wall.</p> <p>F = Building perimeter that fronts on a public way or open space having a width of 20 feet (6096 mm) or more.</p>
<p>506.2.1 Exception: Where the building meets the requirements of Section 507, as applicable, except for compliance with the 60-foot (18 288 mm) public way or yard requirement, and the value of W is greater than 30 feet (9144 mm), the value of W divided by 30 shall be limited to a maximum of 2.</p>	<p>506.3.2 Exception: Where the building meets the requirements of Section 507, as applicable, except for compliance with the minimum 60-foot (18 288 mm) public way or yard requirement, and the value of W is greater than 30 feet (9144 mm), the value of W shall not exceed 60 feet (18 288 mm). W divided by 30 shall be limited to a maximum of 2.</p>
<p>506.2.2 Open space limits. Such open space shall be either on the same lot or dedicated for public use and shall be accessed from a street or approved fire lane.</p>	<p>506.3.1 (Last sentence in paragraph. No change to text wording.)</p>
<p>506.3 Automatic sprinkler system increase. Where a building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, the building area limitation in Table 503 is permitted to be increased by an additional 200 percent ($I_s = 2$) for buildings with more than one story above grade plane and an additional 300 percent ($I_s = 3$) for buildings with no more than one story above grade plane. These increases are permitted in addition to the height and story increases in accordance with Section 504.2.</p>	<p>Built into Table 506.2 in the rows for S1 and SM for each occupancy</p>
<p>506.3 Exception 1: The use of an automatic sprinkler system to increase the building area limitation shall not be permitted for the following conditions:</p> <ol style="list-style-type: none"> 1. Buildings classified as a Group H-1 occupancy. 	<p>Built into Table 506.2 in the rows for S1 and SM for H-1 occupancy</p>
<p>506.3 Exception 2: The use of an automatic sprinkler system to increase the building area limitation shall not be permitted for the following conditions:</p> <ol style="list-style-type: none"> 2. Buildings, or portions of buildings, classified as either a Group H-2 or H-3 occupancy. For buildings containing such occupancies, the allowable area shall be determined in accordance with Section 508.4.2, with the sprinkler system increase applicable only to the portions of the building not classified as Group H-2 or H-3. 	<p>506.2.2.1 and 506.2.4.1: Group H-2 or H-3 mixed occupancies. Buildings, or portions of buildings, classified as either a Group H-2 or H-3 occupancy. For a buildings containing Group H-2 or H-3 occupancies, the allowable building area shall be determined in accordance with Section 508.4.2, with the sprinkler system increase applicable only to the portions of the building not classified as Group H-2 or H-3.</p>
<p>506.3 Exception 3: The use of an automatic sprinkler system to increase the building area limitation shall not be permitted for the following conditions:</p> <ol style="list-style-type: none"> 3. Buildings where an automatic sprinkler system is substituted for fire-resistance rated construction in accordance with Table 601, Note d. 	<p>506.1.3 Fire-resistance rating substitution. Where sprinklers are substituted for one hour construction in accordance with Table 601, Footnote d, the floor area of the building shall be determined based on the provisions applicable to buildings not equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.</p>
<p>506.4 Single occupancy buildings with more than one story. The total allowable building area of a single occupancy building with more than one story above grade plane shall be determined in accordance with this section. The actual aggregate building area at all stories in the building shall not exceed the total allowable building area.</p>	<p>506.2.3 Single occupancy, multi-story buildings. The allowable area of a single occupancy building with more than one story above grade plane shall be determined in accordance with Equation 5-2:</p> $A_a = [A_t + (NS \times I_t)] \times S_a \text{ (Equation 5-2)}$ <p>where:</p> <p>A_a = Allowable area (square feet).</p> <p>A_t = Tabular allowable area factor (NS, S13R, or SM value, as applicable) in accordance with Table 506.2.</p> <p>NS = Tabular allowable area factor in accordance with Table 506.2 for non-sprinklered building (regardless of whether or not the building is</p>

	<p>sprinklered).</p> <p>I_f = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.</p> <p>S_a = Actual number of building stories above grade plane, not to exceed 3. For buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2, use the actual number of building stories above grade plane, not to exceed 4.</p> <p>No individual story shall exceed the maximum building floor area (A_a) as determined by Equations 5-2 using the value of $S_a = 1$.</p>
<p>506.4 Exception: A single <i>basement</i> need not be included in the total allowable <i>building area</i>, provided such <i>basement</i> does not exceed the area permitted for a building with no more than one <i>story above grade plane</i>.</p>	<p>506.1.4 Basements. A Single story basements need not be included in the total allowable floor area of a building provided such <u>basement</u> the total <u>basement floor area</u> does not exceed the <u>area</u> that permitted for a <u>one-story</u> building with no more than one story above grade plane.</p>
<p>506.4.1 Area determination. The total allowable <i>building area</i> of a single occupancy building with more than one <i>story above grade plane</i> shall be determined by multiplying the allowable <i>building area per story</i> (A_a), as determined in Section 506.1, by the number of <i>stories above grade plane</i> as listed below:</p> <ol style="list-style-type: none"> 1. For buildings with two <i>stories above grade plane</i>, multiply by 2; 2. For buildings with three or more <i>stories above grade plane</i>, multiply by 3; and 3. No <i>story</i> shall exceed the allowable <i>building area per story</i> (A_a), as determined in Section 506.1, for the occupancies on that <i>story</i>. 	<p>506.2 Allowable area determination. The allowable area of a building shall be determined in accordance with the applicable provisions of Sections 506.2.1 through 506.2.4 and Section 506.3.</p> <p>506.2.1 Single occupancy, one-story buildings. The allowable area of a single occupancy building with no more than one story above grade plane shall be determined in accordance with Equation 5-1:</p> $A_a = A_t + (NS \times I_f) \text{ (Equation 5-1)}$ <p>where:</p> <p>A_a = Allowable area (square feet).</p> <p>A_t = Tabular allowable area factor (NS, S1, or S13R value, as applicable) in accordance with Table 506.2.</p> <p>NS = Tabular allowable area factor in accordance with Table 506.2 for non-sprinklered building (regardless of whether or not the building is sprinklered).</p> <p>I_f = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.</p> <p>506.2.3 Single occupancy, multi-story buildings. The maximum floor area of a single occupancy building with more than one story above grade plane shall be determined in accordance with Equation 5-2:</p> $A_a = [A_t + (NS \times I_f)] \times S_a \text{ (Equation 5-2)}$ <p>where:</p> <p>A_a = Allowable area (square feet).</p> <p>A_t = Tabular allowable area factor (NS, S13R, or SM value, as applicable) in accordance with Table 506.2.</p> <p>NS = Tabular allowable area factor in accordance with Table 506.2 for non-sprinklered building (regardless of whether or not the building is sprinklered).</p> <p>I_f = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.</p> <p>S_a = Actual number of building stories above grade plane, not to exceed 3. For buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2, use the actual number of building stories above grade plane, not to exceed 4.</p> <p>No individual story shall exceed the maximum building floor area (A_a) as determined by Equations 5-2 using the value of $S_a = 1$.</p>
<p>506.4.1 Exception #1: 1. Unlimited area buildings in accordance with Section 507.</p>	<p>506.4.1 Exception #1 506.1.1 Unlimited area buildings. Unlimited area buildings shall be designed in accordance with Section 507.</p>
<p>506.4.1 Exception #2: 2. The maximum area of a building equipped throughout with an <i>automatic sprinkler system</i> in accordance with Section 903.3.1.2 shall be determined by</p>	<p>506.2.3 (S_a value): S_a = Actual number of building stories above grade plane, not to exceed 3. For buildings equipped throughout</p>

<p>multiplying the allowable area per <i>story</i> (<i>Aa</i>), as determined in Section 506.1, by the number of <i>stories above grade plane</i>.</p>	<p>with an automatic sprinkler system installed in accordance with Section 903.3.1.2, use the actual number of building stories above grade plane, not to exceed 4</p>
<p>506.5 Mixed occupancy area determination. The total allowable <i>building area</i> for buildings containing mixed occupancies shall be determined in accordance with the applicable provisions of this section. A single <i>basement</i> need not be included in the total allowable <i>building area</i>, provided such <i>basement</i> does not exceed the area permitted for a building with no more than one <i>story above grade plane</i>.</p>	<p>506.5 Mixed occupancy area determination. The total allowable <i>building area</i> for buildings containing mixed occupancies shall be determined in accordance with the applicable provisions of this section. 506.1.4 Basements. A Single story basements need not be included in the total allowable floor area of a building provided such basement <u>the total basement floor area</u> does not exceed the area that permitted for a <u>one-story building with no more than one story above grade plane</u>.</p>
<p>506.5.1 No more than one story above grade plane. For buildings with no more than one <i>story above grade plane</i> and containing mixed occupancies, the total <i>building area</i> shall be determined in accordance with the applicable provisions of Section 508.1.</p>	<p>506.2.2 No more than one story above grade plane. Mixed occupancy, one-story buildings. For buildings with no more than one <i>story above grade plane</i> and containing mixed occupancies, the total <i>building area</i> <u>The maximum floor area of a mixed occupancy building with no more than one story above grade plane</u> shall be determined in accordance with the applicable provisions of Section 508.1.</p>
<p>506.5.2 More than one story above grade plane. For buildings with more than one <i>story above grade plane</i> and containing mixed occupancies, each <i>story</i> shall individually comply with the applicable requirements of Section 508.1. For buildings with more than three <i>stories above grade plane</i>, the total <i>building area</i> shall be such that the aggregate sum of the ratios of the actual area of each <i>story</i> divided by the allowable area of such <i>stories</i> based on the applicable provisions of Section 508.1 shall not exceed 3.</p>	<p>506.5.2 506.2.4 More than one story above grade plane. Mixed occupancy, multi-story buildings. For buildings with more than one <i>story above grade plane</i> and containing mixed occupancies, each <i>story</i> <u>Each story of a mixed occupancy building with more than one story above grade plane</u> shall individually comply with the applicable requirements of Section 508.1. For buildings with more than three stories above grade plane, the total building area shall be such that the aggregate sum of the ratios of the actual area of each story divided by the allowable area of such stories based on the applicable provisions of Section 508.1 shall not exceed 3.</p>
	<p>2015 Proposed Correlating Code Changes to Sections that refer back to Chapter 5</p>
<p>406.6.1 Heights and areas. Enclosed vehicle parking garages and portions thereof that do not meet the definition of <i>open parking garages</i> shall be limited to the allowable heights and areas specified in Table 503 as modified by Sections 504, 506 and 507. Roof parking is permitted.</p>	<p>406.6.1 Heights and areas. Enclosed vehicle parking garages and portions thereof that do not meet the definition of open parking garages shall be limited to the allowable heights, number of stories and areas specified in Table 503 <u>Sections 504 and 506</u> as modified by Sections 504, 506 and 507. Roof parking is permitted.</p>
<p>[F] 415.8.1.1 Type of construction and height exceptions. Buildings shall be constructed in compliance with the height and area limitations of Table 503 for Group H-2; except that where erected of Type I or II construction, the heights and areas of grain elevators and similar structures shall be unlimited, and where of Type IV construction, the maximum <i>building height</i> shall be 65 feet (19 812 mm) and except further that, in isolated areas, the maximum <i>building height</i> of Type IV structures shall be increased to 85 feet (25 908 mm).</p>	<p>[F] 415.8.1.1 Type of construction and height exceptions. Buildings shall be constructed in compliance with the height, <u>number of stories</u> and area limitations of Table 503 specified in Sections 504 and 506 for Group H-2 occupancies; except that where erected of Type I or II construction, the heights and areas of grain elevators and similar structures shall be unlimited, and where of Type IV construction, the maximum height shall be 65 feet (19 812 mm) and except further that, in isolated areas, the maximum height of Type IV structures shall be increased to 85 feet (25 908 mm).</p>
<p>[F] 415.8.2.1.1 Height exception. Where storage tanks are located within a building no more than one <i>story above grade plane</i>, the height limitation of Section 503 shall not apply for Group H.</p>	<p>[F] 415.8.2.1.1 Height exception. Where storage tanks are located within a building no more than one <i>story above grade plane</i>, the height limitation of Section 503-504 shall not apply for Group H.</p>
<p>507.8 Group H occupancies. Group H-2, H-3 and H-4 occupancies shall be permitted in unlimited areas buildings containing Group F and S occupancies, in accordance with Sections 507.3 and 507.4 and the provisions of Sections 507.8.1 through 507.8.4.</p>	<p>507.8 Group H-2, H-3 and H-4 occupancies. Group H-2, H-3 and H-4 occupancies shall be permitted in unlimited areas buildings containing Group F and S occupancies, in accordance with Sections 507.3 and 507.4 and the provisions of Sections 507.8.1 through 507.8.4.</p>
<p>507.8.1 Allowable area. The aggregate floor area of Group H occupancies located in an unlimited area building shall not exceed 10 percent of the area of the building nor the area limitations for the Group H occupancies as specified in Table 503 as modified by Section 506.2 based upon the perimeter of each Group H floor area that fronts on a <i>public way</i> or open space.</p>	<p>507.8.1 Allowable area. The aggregate floor area of Group H occupancies located in an unlimited area building shall not exceed 10 percent of the area of the building nor the area limitations for the Group H occupancies as specified in Table 503 as modified by Section 506.2 <u>Section 506</u> based upon the perimeter of each Group H floor area that fronts on a public way or open space.</p>
<p>507.8.1.1 Located within the building. The aggregate floor area of Group H occupancies not located at the perimeter of the building shall not exceed 25 percent of the area limitations</p>	<p>507.8.1.1 Located within the building. The aggregate floor area of Group H occupancies not located at the perimeter of the building shall not exceed 25 percent of the area limitations for the</p>

for the Group H occupancies as specified in Table 503.	Group H occupancies as specified in Table 503, <u>Section 506</u> .
507.8.4 Height limitations. For two-story unlimited area buildings, Group H occupancies shall not be located more than one story above grade plane unless permitted based on the allowable height in stories and feet as set forth in Table 503 for the type of construction of the unlimited area building.	507.8.4. Height limitations. For two-story unlimited area buildings, Group H occupancies shall not be located more than one story above grade plane unless permitted based on the allowable height in and number of stories as set forth specified in Table 503 <u>Section 504</u> for based on the type of construction of the unlimited area building.
508.2.1 Area limitations. Aggregate accessory occupancies shall not occupy more than 10 percent of the <i>building area</i> of the story in which they are located and shall not exceed the tabular values in Table 503, without <i>building area</i> increases in accordance with Section 506 for such accessory occupancies.	508.2.1 508.2.3 Area limitations. Allowable building area. The allowable floor area of the building shall be based on the applicable provisions of Section 506 for the main occupancy of the building. Aggregate accessory occupancies shall not occupy more than 10 percent of the floor area of the story in which they are located and shall not exceed the tabular values in Table 503 for nonsprinklered buildings in Table 506.2 for such accessory occupancies.
508.2.2 Occupancy classification. Accessory occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space.	508.2.2 508.2.1 Occupancy classification. Accessory occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space. (No changes to text)
508.2.3 Allowable building area and height. The allowable <i>building area and height</i> of the building shall be based on the allowable <i>building area and height</i> for the main occupancy in accordance with Section 503.1. The height of each accessory occupancy shall not exceed the tabular values in Table 503, without increases in accordance with Section 504 for such accessory occupancies. The <i>building area</i> of the accessory occupancies shall be in accordance with Section 508.2.1.	508.2.3 508.2.2 Allowable building area and height. The allowable <i>building area and height</i> <u>and number of stories</u> of the building shall be based on the allowable building area and height <u>in accordance with Section 504</u> for the main occupancy of the building in accordance with Section 503.1. The allowable height of <u>for each</u> accessory occupancy shall not exceed the tabular values in Table 503 <u>504.3 and Table 504.4</u> without increases in accordance with Section 504 for nonsprinklered buildings <u>specified for each</u> such accessory occupancy. The <i>building area</i> of the accessory occupancies shall be in accordance with Section 508.2.1.
510.2(7) The maximum <i>building height</i> in feet (mm) shall not exceed the limits set forth in Section 503 for the building having the smaller allowable height as measured from the <i>grade plane</i> .	510.2(7) The maximum <i>building height</i> in feet (mm) shall not exceed the limits set forth in Section 503 <u>504.3</u> for the building having the smaller allowable height as measured from the <i>grade plane</i> .
3102.4 Allowable floor areas. The area of a membrane structure shall not exceed the limitations set forth in Table 503, except as provided in Section 506.	3102.4 Allowable floor areas. The area of a membrane structure shall not exceed the <u>floor area</u> limitations set forth in Table 503, except as provided specified in Section 506.
3102.5 Maximum height. Membrane structures shall not exceed one story nor shall such structures exceed the height limitations in feet set forth in Table 503. Exception: Noncombustible membrane structures serving as roofs only.	3102.5 Maximum height and number of stories. Membrane structures shall not exceed one story nor shall such structures exceed the height limitations in feet set forth specified in Table 503 <u>Section 504.3</u> . Exception: Noncombustible membrane structures serving as roofs only.
3412.6.1 (IEBC 1301.6.1) Building height. The value for building height shall be the lesser value determined by the formula in Section 3412.6.1.1. Chapter 5 shall be used to determine the allowable height of the building, including allowable increases due to automatic sprinklers as provided for in Section 504.2. Subtract the actual <i>building height</i> in feet from the allowable and divide by 12 1/2 feet. Enter the height value and its sign (positive or negative) in Table 3412.7 under Safety Parameter 3412.6.1, Building Height, for fire safety, means of egress and general safety. The maximum score for a building shall be 10.	3412.6.1 Building height and number of stories. (and in the IEBC [B] 1301.6.1 Building height). The value for building height <u>and number of stories</u> shall be the lesser value determined by the formula in Section 3412.6.1.1. Chapter 5 <u>Section 504</u> shall be used to determine the allowable height <u>and number of stories</u> of the building, including allowable increases due to automatic sprinklers as provided for in Section 504.2. Subtract the actual building height in feet from the allowable and divide by 12 1/2 feet. Enter the height value and its sign (positive or negative) in Table 3412.7 under Safety Parameter 3412.6.1, Building Height, for fire safety, means of egress and general safety. The maximum score for a building shall be 10.
3412.6.1.1 (IEBC 1301.6.1.1) 3412.6.1.1 Height formula. The following formulas shall be used in computing the building height value. $\text{Height value, feet} = \frac{(AH) - (EBH)}{12.5} \times CF$ <p style="text-align: right;">(Equation 34-1)</p> $\text{Height value, feet} = (AS - EBS) \times CF$ <p style="text-align: right;">(Equation 34-2)</p>	3412.6.1.1 Height formula. (and in the IEBC [B] 1301.6.1.1 Height formula.) The following formulas shall be used in computing the building height value.

<p>where:</p> <p>AH = Allowable height in feet from Table 503. EBH = Existing <i>building height</i> in feet. AS = Allowable height in stories from Table 503. EBS = Existing building height in stories. CF = 1 if (AH) – (EBH) is positive. CF = Construction-type factor shown in Table 3412.6.6(2) if (AH) – (EBH) is negative.</p> <p>Note: Where mixed occupancies are separated and individually evaluated as indicated in Section 3412.6, the values AH, AS, EBH and EBS shall be based on the height of the occupancy being evaluated.</p>	$\text{Height value, feet} = \frac{(AH) - (EBH)}{12.5} \times CF$ <p style="text-align: right;">(Equation 34-1)</p> $\text{Height value, feet} = (AS - EBS) \times CF$ <p style="text-align: right;">(Equation 34-2)</p> <p>where:</p> <p>AH = Allowable height in feet from Table 503 <u>Section 504</u>. EBH = Existing building height in feet. AS = Allowable number of stories from Table 503 <u>Section 504</u>. EBS = Existing building number of stories. CF = 1 if (AH) – (EBH) is positive. CF = Construction-type factor shown in Table 3412.6.6(2) if (AH) – (EBH) is negative.</p> <p>Note: Where mixed occupancies are separated and individually evaluated as indicated in Section 3412.6, the values AH, AS, EBH and EBS shall be based on the height of the occupancy being evaluated.</p>
<p>3412.6.2 (IEBC 1301.6.2) Building area. The value for building area shall be determined by the formula in Section 3412.6.2.2. Section 503 and the formula in Section 3412.6.2.1 shall be used to determine the allowable area of the building. This shall include any allowable increases due to frontage and automatic sprinklers as provided for in Section 506. Subtract the actual <i>building area</i> in square feet from the allowable area and divide by 1,200 square feet. Enter the area value and its sign (positive or negative) in Table 3412.7 under Safety Parameter 3412.6.2, Building Area, for fire safety, means of egress and general safety. In determining the area value, the maximum permitted positive value for area is 50 percent of the fire safety score as <i>listed</i> in Table 3412.8, Mandatory Safety Scores.</p>	<p>3412.6.2 Building area. (and in the IEBC [B] 1301.6.2 Building area.) The value for building area shall be determined by the formula in Section 3412.6.2.2. Section 503-506 and the formula in Section 3412.6.2.1 shall be used to determine the allowable area of the building. This shall include any allowable increases due to frontage and automatic sprinklers as provided for in Section 506. Subtract the actual building area in square feet from the allowable area and divide by 1,200 square feet. Enter the area value and its sign (positive or negative) in Table 3412.7 under Safety Parameter 3412.6.2, Building Area, for fire safety, means of egress and general safety. In determining the area value, the maximum permitted positive value for area is 50 percent of the fire safety score as listed in Table 3412.8, Mandatory Safety Scores.</p>
<p>3412.6.2.1 (IEBC 1301.6.2.1) Allowable area formula. The following formula shall be used in computing allowable area: $A_a = \{At + [At \times If] + [At \times Is]\}$ (Equation 34-3) where:</p> <p>A_a = Allowable <i>building area</i> per story (square feet). A_t = Tabular <i>building area</i> per story in accordance with Table 503 (square feet). I_s = Area increase factor due to sprinkler protection as calculated in accordance with Section 506.3. I_f = Area increase factor due to for frontage as calculated in accordance with Section 506.2.</p>	<p>3412.6.2.1 Allowable area formula. (and in the IEBC [B] 1301.6.2.1 Allowable area formula.) The following formula shall be used in computing allowable area: $A_a = \{A_t + [A_t \times I_f] + [A_t \times I_s]\}$ (Equation 34-3) $A_a = A_t + (NS \times I_f)$ (Equation 34-3) where:</p> <p>A_a = Allowable-building area per story (square feet). A_t = Tabular building allowable area per story factor <u>(NS, S1, S13R, or SM value, as applicable)</u> in accordance with <u>Table 503-506.2 (square feet)</u>. NS = <u>Tabular allowable area factor in accordance with Table 506.2 for non-sprinklered building (regardless of whether or not the building is sprinklered)</u>. I_s = Area increase due to sprinkler protection as calculated in accordance with Section 506.3. I_f = Area <u>factor</u> increase factor due to for-frontage as calculated in accordance with Section 506.2-506.3.</p>

This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

Cost Impact: None

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Public Hearing: Committee: AS AM D

Assembly:

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G102 – 12

503, 503.1, Table 503.1, 506, 507, 508, 509.1, 909.2, 590.3, 509.7

Proponent: David S. Collins, The Preview Group, Inc. (dcollins@preview-group.com)

Revise as follows:

SECTION 503 GENERAL BUILDING HEIGHT AND AREA LIMITATIONS

503.1 General. The ~~building height and area~~ shall not exceed the limits specified in Table 503 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified hereafter. Each portion of a building separated by one or more *fire walls* complying with Section 706 shall be considered to be a separate building.

**TABLE 503
ALLOWABLE BUILDING HEIGHTS AND AREAS^{a, b}**

Building height limitations shown in feet above grade plane. Story limitations shown as stories above grade plane.
Building area limitations shown in square feet, as determined by the definition of "Area, building," per story

GROUP	HEIGHT (feet)	TYPE OF CONSTRUCTION								
		Type I		Type II		Type III		Type IV	Type V	
		A	B	A	B	A	B	HT	A	B
		UL	160	65	55	65	55	65	50	40
STORIES(S) AREA (A)										
A-1	S	UL	5	3	2	3	2	3	2	4
	A	UL	UL	15,500	8,500	14,000	8,500	15,000	11,500	5,500
A-2	S	UL	11	3	2	3	2	3	2	4
	A	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
A-3	S	UL	11	3	2	3	2	3	2	4
	A	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
A-4	S	UL	11	3	2	3	2	3	2	4
	A	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
A-5	S	UL	UL	UL	UL	UL	UL	UL	UL	UL
	A	UL	UL	UL	UL	UL	UL	UL	UL	UL
B	S	UL	11	5	3	5	3	5	3	2
	A	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000
E	S	UL	5	3	2	3	2	3	4	4
	A	UL	UL	26,500	14,500	23,500	14,500	25,500	18,500	9,500
F-1	S	UL	11	4	2	3	2	4	2	4
	A	UL	UL	25,000	15,500	19,000	12,000	33,500	14,000	8,500
F-2	S	UL	11	5	3	4	3	5	3	2
	A	UL	UL	37,500	23,000	28,500	18,000	50,500	21,000	13,000
H-1	S	4	4	4	4	4	4	4	4	NP
	A	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	NP
H-2	S	UL	3	2	4	2	4	2	4	4
	A	21,000	16,500	11,000	7,000	9,500	7,000	10,500	7,500	3,000
H-3	S	UL	6	4	2	4	2	4	2	4
	A	UL	60,000	26,500	14,000	17,500	13,000	25,500	10,000	5,000
H-4	S	UL	7	5	3	5	3	5	3	2
	A	UL	UL	37,500	17,500	28,500	17,500	36,000	18,000	6,500
H-5	S	4	4	3	3	3	3	3	3	2

	A	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000
I-1	S	UL	9	4	3	4	3	4	3	2
	A	UL	55,000	19,000	10,000	16,500	10,000	18,000	10,500	4,500
I-2	S	UL	4	2	1	1	NP	1	1	NP
	A	UL	UL	15,000	11,000	12,000	NP	12,000	9,500	NP
I-3	S	UL	4	2	1	2	1	2	2	1
	A	UL	UL	15,000	10,000	10,500	7,500	12,000	7,500	5,000
I-4	S	UL	5	3	2	3	2	3	1	1
	A	UL	60,500	26,500	13,000	23,500	13,000	25,500	18,500	9,000
M	S	UL	11	4	2	4	2	4	3	1
	A	UL	UL	21,500	12,500	18,500	12,500	20,500	14,000	9,000
R-1	S	UL	11	4	4	4	4	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
R-2	S	UL	11	4	4	4	4	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
R-3	S	UL	11	4	4	4	4	4	3	3
	A	UL	UL	UL	UL	UL	UL	UL	UL	UL
R-4	S	UL	11	4	4	4	4	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
S-1	S	UL	11	4	2	3	2	4	3	1
	A	UL	48,000	26,000	17,500	26,000	17,500	25,500	14,000	9,000
S-2	S	UL	11	5	3	4	3	5	4	2
	A	UL	79,000	39,000	26,000	39,000	26,000	38,500	21,000	13,500
U	S	UL	5	4	2	3	2	4	2	1
	A	UL	35,500	19,000	8,500	14,000	8,500	18,000	9,000	5,500

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

A = building area per story, S = stories above grade plane, UL = Unlimited, NP = Not permitted.

- a. See the following sections for general exceptions to Table 503:
 1. Section 504.2, Allowable building height and story increase due to automatic sprinkler system installation.
 2. Section 506.2, Allowable building area increase due to street frontage.
 3. Section 506.3, Allowable building area increase due to automatic sprinkler system installation.
 4. Section 507, Unlimited area buildings.
- b. See Chapter 4 for specific exceptions to the allowable height and areas in Chapter 5.

Delete the following sections in their entirety without substitution.

~~**SECTION 506
BUILDING AREA MODIFICATIONS**~~

~~**SECTION 507
UNLIMITED AREA BUILDINGS**~~

~~**SECTION 508
MIXED USE AND OCCUPANCY**~~

Revise as follows:

~~**SECTION 509 506
INCIDENTAL USES**~~

(Portions of text not shown remain unchanged other than re-numbering)

~~**SECTION 510 507
SPECIAL PROVISIONS**~~

510.1 507.1 General. The provisions in Sections ~~510.2~~ 507.2 through ~~510.9~~ 507.9 shall permit the use of special conditions that are exempt from, or modify, the specific requirements of this chapter regarding the allowable *building heights and areas* of buildings based on the occupancy classification and type of construction, provided the special condition complies with the provisions specified in this section for such condition and other applicable requirements of this code. The provisions of Sections ~~510.2~~ 507.2 through ~~510.8~~ 507.8 are to be considered independent and separate from each other.

510.2 Horizontal building separation allowance. A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of *fire walls*, limitation of number of *stories* and type of construction where all of the following conditions are met:

- ~~1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours.~~
- ~~2. The building below the *horizontal assembly* is not greater than one *story above grade plane*.~~
- ~~3. The building below the *horizontal assembly* is of Type IA construction.~~
- ~~4. *Shaft, stairway, ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5.~~

Exception: Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided:

- ~~1. The building above the *horizontal assembly* is not required to be of Type I construction;~~
- ~~2. The enclosure connects fewer than four *stories*; and~~
- ~~3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.~~
- ~~5. The building or buildings above the *horizontal assembly* shall be permitted to have multiple Group A occupancy uses, each with an *occupant load* of less than 300, or Group B, M, R or S occupancies.~~
- ~~6. The building below the *horizontal assembly* shall be protected throughout by an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and shall be permitted to be any of the following occupancies:
 - ~~6.1. Group S-2 parking garage used for the parking and storage of private motor vehicles;~~
 - ~~6.2. Multiple Group A, each with an *occupant load* of less than 300;~~
 - ~~6.3. Group B;~~
 - ~~6.4. Group M;~~
 - ~~6.5. Group R; and~~
 - ~~6.6. Uses incidental to the operation of the building (including entry lobbies, mechanical rooms, storage areas and similar uses).~~~~
- ~~7. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 503 for the building having the smaller allowable height as measured from the *grade plane*.~~

510.3 507.2 Group S-2 enclosed parking garage with Group S-2 open parking garage above. A Group S-2 enclosed parking garage with not more than one *story above grade plane* and located below a Group S-2 *open parking garage* shall be classified as a separate and distinct building for the purpose of determining the type of construction where all of the following conditions are met:

- ~~1. The allowable area of the building shall be such that the sum of the ratios of the actual area divided by the allowable area for each separate occupancy shall not exceed 1.~~
- ~~2-1. The Group S-2 enclosed parking garage is of Type I or II construction and is at least equal to the *fire-resistance* requirements of the Group S-2 *open parking garage*.~~
- ~~3-2. The height and the number of tiers of the Group S-2 *open parking garage* shall be limited as specified in Table 406.5.4.~~
- ~~4-3. The floor assembly separating the Group S-2 enclosed parking garage and Group S-2 *open parking garage* shall be protected as required for the floor assembly of the Group S-2 enclosed parking garage. Openings between the Group S-2 enclosed parking garage and Group S-2 *open parking garage*, except *exit* openings, shall not be required to be protected.~~

- 5-4 The Group S-2 enclosed parking garage is used exclusively for the parking or storage of private motor vehicles, but shall be permitted to contain an office, waiting room and toilet room having a total area of not more than 1,000 square feet (93 m²), and mechanical equipment rooms incidental to the operation of the building.

510.7 507.6 Open parking garage beneath Groups A, I, B, M and R. *Open parking garages* constructed under Groups A, I, B, M and R shall not exceed the height ~~and area~~ limitations permitted under Section 406.5. The height and area of the portion of the building above the *open parking garage* shall not exceed the limitations in Section 503 for the upper occupancy. The height, in both feet and *stories*, of the portion of the building above the *open parking garage* shall be measured from *grade plane* and shall include both the *open parking garage* and the portion of the building above the parking garage.

Reason: A study group of the ICC's Codes Technology Committee worked for almost four years to examine the rationale and background for the criteria within Table 503 and to determine what needed to be corrected. The study group examined the origins of the table and the procedure used to develop it. No rational basis was identified or established for any of the values within the table. Nothing exists that correlates the performance of a building by construction type and occupancy to fire performance, life safety or property damage. NFPA's latest analysis of the available data indicates that social conditions are far more predictable of likely loss.

Codes limit the arrangement of building areas by several limitations. Means of egress travel distance limits the exposure of the building occupants, the requirements of stairs to discharge to the outside, distance of standpipes and even Appendix B in the IFC, all limit the configuration of a building. Area limits in Table 503 affect little except to provide market share for materials interests.

Cost Impact: This code change proposal will not increase the cost of construction.

G102-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

503-G-COLLINS

G103 – 12

503.1, 706.1

Proponent: Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee (BCAC)

Revise as follows:

503.1 General. The *building height and area* shall not exceed the limits specified in Table 503 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified hereafter. For the purposes of determining area limitations, height limitations and type of construction, each portion of a building separated by one or more *fire walls* complying with Section 706 shall be considered to be a separate building.

Revise as follows:

706.1 General. For the purposes of determining area limitations, height limitations and type of construction, each portion of a building separated by one or more *fire walls* that comply with the provisions of this section shall be considered a separate building. The extent and location of such *fire walls* shall provide a complete separation. Where a *fire wall* also separates occupancies that are required to be separated by a *fire barrier* wall, the most restrictive requirements of each separation shall apply.

Reason: Consistency and coordination among the International Codes is one of the cornerstones of the ICC Code Development process. The ICC Board established the ICC Building Code Action Committee (BCAC) to act as a forum to deal with complex issues ahead of the Code Development Process, identify emerging issues and draft proposed code changes.

This proposed change is a result of the BCAC's work.

Clarifies the intent of the these sections of the Code that the requirement for a fire wall in Sections 503.1 and 706.1 is predicated on the determination of the maximum allowable height and area calculations under Chapter 5. Using these sections of Code to control other building features or elements such as means of egress, building systems or building utilities is not intended or implied by these sections of the Code. There are no requirements in the I Codes that mandate that the placement of fire walls create a separate building such that its building features need to be separated from other like building features in adjacent buildings.

Cost Impact: The proposed changes will not increase the cost of construction.

G103-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

503.1-G-BAJNAI-BCAC

G104 – 12

503.1

Proponent: Gene Boecker, Code Consultants, Inc., representing self

Revise as follows:

503.1 General. ~~The~~ Unless otherwise specifically modified in Chapter 4, *building height and area* shall not exceed the limits specified in Table 503 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified hereafter. Each portion of a building separated by one or more *fire walls* complying with Section 706 shall be considered to be a separate building.

Reason: Section 503.1 needs to include this provision to make it clear that Chapter 4 also contains height and area requirements which may be more or less restrictive than those in Chapter 5. The problem is that except as a footnote to Table 503, no reference is made in the code to the fact that Chapter 4 contains specific language that modifies the allowable heights and areas for various structures based on their unique conditions. This occurs in 402.4, 403.2, 405.2, 406.5.1, 406.5.5, 406.7.2, 410.3.1, 410.3.2, 410.4, 412.3.1, 412.4.2, 412.4.6, 412.6.2, 415.8.1.1, 415.8.1.6.

Numerous sections of the IBC as well as other codes in the ICC family refer back to the limiting the height and area based on the requirements in Chapter 5 of the IBC. Without this reference, these other sections in Chapter 4 are not tied in; and, the IBC itself is more complete. For example, the IEBC refers to allowing building height and area based on the Chapter 5 but makes no reference to Chapter 4. Essentially, any modification to a covered mall, high-rise building, open parking garage and various High Hazard occupancies could be literally interpreted to require compliance with Table 503, rendering the initial construction noncompliant. This proposal closes a gap in the code.

Cost Impact: The code change proposal will not increase the cost of construction.

G104-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

503.1-E-BOECKER (1).doc

G105 – 12

503.1.1

Proponent: Jerry R. Tepe, FAIA, JRT•AIA Architect, representing American Institute of Architects

Revise as follows:

503.1 General. The *building height and area* shall not exceed the limits specified in Table 503 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified hereafter. Each portion of a building separated by one or more *fire walls* complying with Section 706 shall be considered to be a separate building.

503.1.1 Special industrial occupancies. Buildings and structures designed to house special industrial processes that require large areas and unusual *building heights* to accommodate craneways or special machinery and equipment, including, among others, rolling mills; structural metal fabrication shops and foundries; or the production and distribution of electric, gas or steam power, shall be exempt from the *building height and area* limitations of Table 503 when approved by the building official.

Reason: As an alternative to my proposed change to remove the blanket exemption from area requirements, at a minimum require the approval of the building official rather than an absolute exemption.

Cost Impact: The proposed changes will not increase the cost of construction.

G105-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

503.1.1 #1-G-TEPE

G106 – 12

503.1.1, 504.1

Proponent: Jerry R. Tepe, FAIA, JRT•AIA Architect, representing American Institute of Architects

Revise as follows:

503.1 General. The *building height and area* shall not exceed the limits specified in Table 503 based on the type of construction as determined by Section 602 and the occupancies as determined by Section 302 except as modified hereafter. Each portion of a building separated by one or more *fire walls* complying with Section 706 shall be considered to be a separate building.

~~**503.1.1 Special industrial occupancies.** Buildings and structures designed to house special industrial processes that require large areas and unusual *building heights* to accommodate cranes or special machinery and equipment, including, among others, rolling mills; structural metal fabrication shops and foundries; or the production and distribution of electric, gas or steam power, shall be exempt from the *building height and area* limitations of Table 503.~~

504.1 General. The *building height* permitted by Table 503 shall be increased in accordance with Sections 504.2 and 504.3.

Exceptions:

1. The *building height* of one-story aircraft hangars, aircraft paint hangars and buildings used for the manufacturing of aircraft shall not be limited if the building is provided with an *automatic sprinkler system* or *automatic fire-extinguishing system* in accordance with Chapter 9 and is entirely surrounded by *public ways* or *yards* not less in width than one and one-half times the *building height*.
2. Buildings and structures designed to house special industrial processes that require unusual *building heights* to accommodate cranes or special machinery and equipment, including, among others, rolling mills; structural metal fabrication shops and foundries; or the production and distribution of electric, gas or steam power, shall be exempt from the *building height* limitations of Table 503 when approved by the *building official*.

Reason: Section 507 already provides for unlimited area buildings and provides the additional safety of at least the 60 foot fire separation distance, so there is no need to give a blanket exemption for area as currently provided in Section 503.1.1. Since area is no longer applicable, relocate the blanket exemption for height to Section 504.

If you examine the listing for Group F-2, it contains almost all the types of occupancies listed in this “special Industrial occupancies” (except electric generation plants, Group F-1). As all of these occupancies are considered as equal in fire safety, why should some be exempt from the additional requirements of Section 507 simply because they might have “special machinery and equipment?” All those listed as Group F-2 only need to provide the 60 foot separation to comply with Section 507.2.

Additionally, the large areas required for these buildings would require a sprinkler system for Group F-1 per Section 903.2.4. Therefore, these buildings can comply with Section 507.3

Finally, require the approval of the building official rather than an absolute exemption.

Cost Impact: The proposed changes will not increase the cost of construction.

G106-12

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

503.1.1 #2-G-TEPE

G107 – 12

Table 503

Proponent: Homer Maiel, P.E., CBO, Town of Atherton (CA), representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay)

Revise as follows:

**TABLE 503
ALLOWABLE BUILDING HEIGHTS AND AREAS^{a, b}**

Building height limitations shown in feet above grade plane. Story limitations shown as stories above grade plane.
Building area limitations shown in square feet, as determined by the definition of "Area, building," per story

Group	HEIGHT (feet)	TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
		UL	160	65	55	65	55	65	50	40
STORIES(S) AREA (A)										
R-1 ^ε	S	UL	11	4	4	4	4	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000
R-2 ^ε	S	UL	11	4	4	4	4	4	3	2
	A	UL	UL	24,000	16,000	24,000	16,000	20,500	12,000	7,000

(Portions of table not shown remain unchanged)

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

A = building area per story, S = stories above grade plane, UL = Unlimited, NP = Not permitted.

a. See the following sections for general exceptions to Table 503:

1. Section 504.2, Allowable building height and story increase due to automatic sprinkler system installation.
2. Section 506.2, Allowable building area increase due to street frontage.
3. Section 506.3, Allowable building area increase due to automatic sprinkler system installation.
4. Section 507, Unlimited area buildings.

b. See Chapter 4 for specific exceptions to the allowable height and areas in Chapter 5.

c. See Sections 510.5 and 510.6 for additional increases in height and number of stories.

Reason: Adding this footnote makes a proper link between this table and Sections 510.5 and 510.6.

Cost Impact: This code change will not increase the cost of construction.

G107-12

Public Hearing: Committee: AS AM D
 Assembly: ASF AMF DF

T503-G-MAIEL

G108 – 12

Table 503

Proponent: Dennis Richardson, P.E., CBO, City of Salinas, Tri-Chapter (Peninsula, East Bay and Monterey Chapters, ICC) (dennisrichardsonpe@yahoo.com)

Revise as follows:

**TABLE 503
ALLOWABLE BUILDING HEIGHTS AND AREAS^{a, b}**

Building height limitations shown in feet above grade plane. Story limitations shown as stories above grade plane.
Building area limitations shown in square feet, as determined by the definition of "Area, building," per story

Group	HEIGHT (feet)	TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
	UL	160	65	55	65	55	65	50	40	
		STORIES(S) AREA (A)								
R-2	S A	UL UL	11 UL	4-5 24,000	4 16,000	4 24,000	4 16,000	4 20,500	3-4 12,000	2 7,000

(Portions of table not shown remain unchanged)

Reason: This code change encourages the use of light-frame one hour rated construction for a greater portion of the construction of apartment buildings. Not only is this a sustainable practice reducing greenhouse gas emissions, but by utilizing more light-frame construction for this type of project, costs are reduced making rental housing more viable on difficult urban infill projects. The City of Seattle has utilized a similar code modification for type VA construction for years with excellent safety results. Construction over 4 stories requires the use of an NFPA 13 sprinkler system throughout instead of the NFPA 13R system permitted for projects 4 stories and under. R-2 apartment construction is highly compartmentalized and fully sprinklered one hour construction has an excellent track record. Structural systems and construction methods to allow this type of multi level light frame construction continues to evolve and improve.

Cost Impact: This code change will not increase the cost of construction.

G108-12

Public Hearing: Committee: AS AM D
 Assembly: ASF AMF DF

T503-G-RICHARDSON

G109 – 12

505.2.4 (NEW)

Proponent: Jonathan Siu, City of Seattle Dept of Planning & Development, representing Washington Association of Building Officials Technical Code Development Committee (jon.siu@seattle.gov)

Add new text as follows:

505.2.4 Construction. Mezzanines and their supporting construction shall be of not less than one-hour fire-resistance-rated construction.

Exception: Mezzanines in buildings of Types IIB, IIIB and VB construction shall be permitted to be of unprotected construction, provided the materials used are allowed for the building type of construction.

Reason: The purpose of this code change is to provide clear guidance to the code user as to what is required for mezzanine and equipment platform construction. This is a companion to a code change proposal being submitted by the WABO Technical Code Development Committee relating to construction requirements for equipment platforms (Section 505.3).

The 2012 IBC is silent on the type of construction and fire resistance rating requirements for mezzanines. This can be interpreted to mean that any materials can be used—for example, unprotected wood construction would be allowed in a Type VA or even a Type IA building. This code change proposal seeks to clarify the requirement by requiring 1-hour protected construction for mezzanines, but has an exception for non-rated construction types.

Cost Impact: The code change proposal will increase the cost of construction.

G109-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

505.2.4 (NEW)-G-SIU

G110 – 12

505.3

Proponent: Jonathan Siu, City of Seattle Department of Planning & Development, representing Washington Association of Building Officials Technical Code Development Committee (jon.siu@seattle.gov)

Revise as follows:

505.3 Equipment platforms. *Equipment platforms* in buildings shall not be considered as a portion of the floor below. Such *equipment platforms* shall not contribute to either the *building area* or the number of *stories* as regulated by Section 503.1. The area of the *equipment platform* shall not be included in determining the *fire area* in accordance with Section 903. *Equipment platforms* shall not be a part of any *mezzanine* and such platforms and the walkways, *stairs*, *alternating tread devices* and ladders providing access to an *equipment platform* shall not serve as a part of the *means of egress* from the building. Equipment platforms and their supporting construction shall be of not less than one-hour fire-resistance-rated construction

Exceptions:

1. Equipment platforms in buildings of Types IIB, IIIB and VB construction are permitted to be of unprotected construction provided the materials used are allowed for the building type of construction.
2. Equipment platforms with no occupied space below are permitted to be of unprotected construction provided the materials used are allowed for the building type of construction.

Reason: The purpose of this code change is to provide clear guidance to the code user as to what is required for equipment platform construction. This is a companion to a code change proposal being submitted by the WABO Technical Code Development Committee relating to construction requirements for mezzanines (Section 505.2).

The 2012 IBC is silent on the type of construction requirements for equipment platforms. This can be interpreted to mean that any materials can be used—for example unprotected wood construction would be allowed in a Type VA or even a Type IA building. This code change proposal seeks to clarify the requirement by requiring 1-hour protected construction for equipment platforms with an exception for non-rated construction types. Where there is no occupied space below a platform (i.e., where the platform is close to the floor), the proposal gives the option of using unprotected construction, as long as the materials used are consistent with the type of construction for the building.

Cost Impact: The code change proposal will increase the cost of construction.

G110-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

505.3-G-SIU

G111 – 12

506.1.1 (NEW)

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering (al.godwin@aon.com)

Revise as follows:

506.1.1 Buildings separated by Fire Walls. In accordance with the definition of *building area*, each building separated by a *fire wall* shall be calculated separately only using the allowable factors of tabular building area, yards and automatic sprinklers as applicable for each separated building. For the frontage increase of Section 506.2, only those yards that each such separated building is in contact with shall be counted and using a zero feet yard for the *fire wall* portion of the F/P calculation.

Each separated building shall be permitted to incorporate accessory uses, incidental uses, non-separated mixed uses and separated mixed uses within its individual considerations.

Reason: While it is clear in the definition of “Area, building” that a building is each portion that is separated by a fire wall, it is not that clear when using the term “building” in the allowable area calculations. The term “building” in all of Section 506 is each independently separated building, not the entire structure. This is explained in the commentary. Yet, individuals are still using yard calculations and mixed use ratio calculations based on the whole structure across fire walls.

The yard along the side with the Fire Wall should be 0', as though it were built on a property line, not the actual yard on the other side of the remainder of the structure.

What makes it more confusing is that within each individual building, there may be different Accessory, Incidental, non-separated mixed uses and separated mixed uses. This is intended to add clarification.

If not approved, at least the commentary should be made more explanatory.

Cost Impact: This code change proposal will not increase the cost of construction.

G111-12

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

506.1.1 (NEW)-G-GODWIN

G112 – 12

506.4, 506.5

Proponent: Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee (BCAC)

Revise as follows:

506.4 Single occupancy buildings with more than one story. The total allowable *building area* of a single occupancy building with more than one *story above grade plane* shall be determined in accordance with this section. The actual aggregate *building area* at all *stories* in the building shall not exceed the total allowable *building area*.

Exception: A ~~single basement~~ Basements need not be included in the total allowable *building area*, provided the total area of such *basement* does not exceed the area permitted for a building with no more than one *story above grade plane*.

506.5 Mixed occupancy area determination. The total allowable *building area* for buildings containing mixed occupancies shall be determined in accordance with the applicable provisions of this section. A ~~single basement~~ Basements need not be included in the total allowable *building area*, provided the total area of such *basements* does not exceed the area permitted for a building with no more than one *story above grade plane*.

Reason: Intended to be editorial to provide better understanding and clarify the existing provisions on basement area calculations.

If a building has two or more small basements on opposite sides of a building that are **not** connected, how does one review such basements under these existing provisions? The existing code says "...A **single** basement...".

The BCAC Committee believes the intent of the Code was not to prohibit multiple individual basements under a building as long as they do not exceed the area permitted for a building with no more than one story above grade plane.

This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

Cost Impact: None.

G112-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

506.4-G-BAJNAI-BCAC

G113 – 12

506.4, 506.5

Proponent: Dennis Richardson, P.E., CBO, City of Salinas, Tri-Chapter (Peninsula, East Bay and Monterey Chapters, ICC) (dennisrichardsonpe@yahoo.com)

Revise as follows:

506.4 Single occupancy buildings with more than one story. The total allowable *building area* of a single occupancy building with more than one *story above grade plane* shall be determined in accordance with this section. The actual aggregate *building area* at all *stories* in the building shall not exceed the total allowable *building area*.

Exceptions:

1. A single *basement* need not be included in the total allowable *building area*, provided such *basement* does not exceed the area permitted for a building with no more than one *story above grade plane*.
2. The first floor of a single occupancy building with more than one story above grade plane shall not exceed the area permitted for a building with no more than one story above grade plane provided the actual aggregate building area shall not exceed the total allowable building area.

506.5 Mixed occupancy area determination. The total allowable *building area* for buildings containing mixed occupancies shall be determined in accordance with the applicable provisions of this section. A single *basement* need not be included in the total allowable *building area*, provided such *basement* does not exceed the area permitted for a building with no more than one *story above grade plane*. The first floor of a multiple occupancy building with more than one story above grade plane shall not exceed the area permitted for a building with no more than one story above grade plane provided the actual aggregate building area shall not exceed the total allowable building area determined in accordance with the applicable provisions of this section.

Reason: Because of the step-function of Is by floor in equation 5-1 as described in Section 506.3, the first floor of a two story building is not allowed to be as large as the first floor of a one story building. This creates a problem when the owner wants to add a smaller second story addition to a one story building if the one story building is already at maximum area. This code provision is intended to allow for flexibility in the size of the first floor as long as it does not exceed what would be allowed for a one story building and as long as the total building area in the aggregate of all stories above grade is still compliant with the code requirements.

This code change will also allow architects more latitude to design stepped building (wedding cake) without sacrificing floor area.

This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

Cost Impact: This code change does not increase construction cost.

G113-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

506.4-G-RICHARDSON

G114 – 12

507.1, 507.1.1 (NEW), 507.1.2 (NEW), 507.2, 507.3, 507.4, 507.5, 507.6, 507.7, 507.8, 507.8.2, 507.9, 507.10, 507.11

Proponent: Sarah A. Rice, C.B.O., The Preview Group (srice@preview-group.com)

Revise as follows:

507.1 General. The area of buildings of the occupancies and configurations specified in this section. Sections 507.1 through 507.12 shall not be limited.

~~**Exception:** Other occupancies shall be permitted in unlimited area buildings in accordance with the provisions of Section 508.2.~~

~~Where Sections 507.2 through 507.12 require buildings to be surrounded and adjoined by *public ways and yards*, those open spaces shall be determined as follows:~~

507.1.1 Open space. Unlimited area buildings shall be surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width. The width of these open spaces shall be determined as follows:

1. *Yards* shall be measured from the building perimeter in all directions to the closest interior *lot lines* or to the exterior face of an opposing building located on the same *lot*, as applicable.
2. Where the building fronts on a *public way*, the entire width of the *public way* shall be used.

Exceptions:

1. Group H-2 aircraft paint hangar shall be surrounded and adjoined by *public ways* or *yards* not less in width than one and one-half times the *building height*.
2. The open space shall be permitted to be reduced to not less than 40 feet (12 192 mm) in width for building identified in Sections to 507.2, 507.3, 507.4, 507.6 and 507.11 and provided all of the following requirements are met:
 - 2.1. The reduced width shall not be allowed for more than 75 percent of the perimeter of the building.
 - 2.2. The exterior walls facing the reduced width shall have a fire-resistance rating of not less than 3 hours.
 - 2.3. Openings in the exterior walls facing the reduced width shall have opening protectives with a fire protection rating of not less than 3 hours.
3. The open space shall be permitted to be reduced for covered and open mall buildings in accordance with Section 402.1.1.

507.1.2 Accessory occupancies. Other occupancies shall be permitted in unlimited area buildings in accordance with the provisions of Section 508.2. Group H occupancies shall comply with Section 507.1.2

~~**507.8 507.2 Group H occupancies.** Group H-2, H-3 and H-4 occupancies shall be permitted in unlimited area buildings containing Group F and S occupancies in accordance with Sections 507.3 and 507.4 and the provisions of Sections 507.8.1 through 507.8.4. **507.1.3.1 through 507.1.3.4.**~~

~~**507.8.4 507.2.1 Allowable area.** (no change)~~

~~**507.8.4.1 507.2.1.1 Located within the building.** (no change)~~

~~**507.8.4.1.1 507.2.1.2 Liquid use, dispensing and mixing rooms.** (no change)~~

~~**507.8.4.1.2 507.2.1.3 Liquid storage rooms.** (no change)~~

~~507.8.1.1.3~~ 507.2.1.4 Spray paint booths. (no change)

~~507.8.2~~ 507.2.2 Located on building perimeter. Except as provided for in Section ~~507.8.1.4~~ 507.1.3.1.1, Group H occupancies shall be located on the perimeter of the building. In Group H-2 and H-3 occupancies, not less than 25 percent of the perimeter of such occupancies shall be an *exterior wall*.

~~507.8.3~~ 507.2.3 Occupancy separations. (no change)

~~507.8.4~~ 507.2.4 Height limitations. (no change)

~~507.2~~ 507.3 Nonsprinklered, one story. The area of a Group F-2 or S-2 building no more than one *story* in height shall not be limited, ~~where the building is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.~~

~~507.3~~ 507.4 Sprinklered, one story. The area of a Group B, F, M or S building no more than one *story above grade plane* of any construction type, or the area of a Group A-4 building no more than one *story above grade plane* of other than Type V construction, shall not be limited where the building is provided with an *automatic sprinkler system* throughout in accordance with Section 903.3.1.1, ~~and is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.~~

Exceptions:

1. Buildings and structures of Types I and II construction for rack storage facilities that do not have access by the public shall not be limited in height, provided that such buildings conform to the requirements of Sections 507.3 and 903.3.1.1 and Chapter 32 of the *International Fire Code*.
2. The *automatic sprinkler system* shall not be required in areas occupied for indoor participant sports, such as tennis, skating, swimming and equestrian activities in occupancies in Group A-4, provided that:
 - 2.1. *Exit* doors directly to the outside are provided for occupants of the participant sports areas; and
 - 2.2. The building is equipped with a *fire alarm system* with *manual fire alarm boxes* installed in accordance with Section 907.

~~507.3.4~~ 507.4.1 Mixed occupancy buildings with Groups A-1 and A-2. (no change)

~~507.4~~ 507.5 Two story. The area of a Group B, F, M or S building no more than two *stories above grade plane* shall not be limited where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, ~~and is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.~~

~~507.5~~ Reduced open space. ~~The public ways or yards of 60 feet (18 288 mm) in width required in Sections 507.2, 507.3, 507.4, 507.6 and 507.11 shall be permitted to be reduced to not less than 40 feet (12 192 mm) in width provided all of the following requirements are met:~~

- ~~1. The reduced width shall not be allowed for more than 75 percent of the perimeter of the building.~~
- ~~2. The exterior walls facing the reduced width shall have a fire-resistance rating of not less than 3 hours.~~
- ~~3. Openings in the exterior walls facing the reduced width shall have opening protectives with a fire protection rating of not less than 3 hours.~~

~~507.6~~ 507.6 Group A-3 buildings of Type II construction. The area of a Group A-3 building no more than one *story above grade plane*, used as a *place of religious worship*, community hall, dance hall, exhibition hall, gymnasium, lecture hall, indoor *swimming pool* or tennis court of Type II construction, shall not be limited provided all of the following criteria are met:

1. The building shall not have a *stage* other than a *platform*.

2. The building shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. ~~The building shall be surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.~~

507.7 507.7 Group A-3 buildings of Types III and IV construction. The area of a Group A-3 building of Type III or IV construction, with no more than one *story above grade plane*, and used as a *place of religious worship*, community hall, dance hall, exhibition hall, gymnasium, lecture hall, indoor *swimming pool* or tennis court, shall not be limited provided all of the following criteria are met:

1. The building shall not have a *stage* other than a *platform*.
2. The building shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. The assembly floor shall be located at or within 21 inches (533 mm) of street or grade level and all *exits* are provided with ramps complying with Section 1010.1 to the street or grade level.
4. ~~The building shall be surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.~~

507.9 507.8 Aircraft paint hangar. The area of a Group H-2 aircraft paint hangar no more than one *story above grade plane* shall not be limited where such aircraft paint hangar complies with the provisions of Section 412.6 ~~and is surrounded and adjoined by public ways or yards not less in width than one and one-half times the building height.~~

507.10 507.9 Group E buildings. The area of a Group E building no more than one *story above grade plane*, of Type II, IIIA or IV construction, shall not be limited provided all of the following criteria are met:

1. Each classroom shall have not less than two *means of egress*, with one of the *means of egress* being a direct *exit* to the outside of the building complying with Section 1020.
2. The building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. ~~The building is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.~~

507.11 507.10 Motion picture theaters. In buildings of Type II construction, the area of a motion picture theater located on the first *story above grade plane* shall not be limited provided the building is provided with an *automatic sprinkler system* throughout in accordance with Section 903.3.1.1 ~~and is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.~~

507.12 507.11 Covered and open mall buildings and anchor buildings. The area of *covered and open mall buildings* and *anchor buildings* not exceeding three *stories* in height that comply with Section 402 shall not be limited.

Reason: The primary intent of this code changes is to reorganized the text for enhance understanding. As it currently stands, provisions for the 60 foot surrounding open space is repeated in nearly each building type, but the exception to the 60 feet is in Section 507.4 and how to measure the 60 feet is in 507.1. Further, the allowance for accessory uses in unlimited area buildings is buried in an exception to the general statement on unlimited area buildings and the provisions for accessory Group H occupancies sits alone in Section 507.8. The proposal organizes the section as follows:

- 507.1 General
 - 507.1.1 – Open space requirements
 - 507.1.1.1 – Reduced open space
 - 507.1.2 – Accessory Occupancies
 - 507.1.3 – Group H occupancies
- 507.2 – single story F-2 and S-2
- 507.3 – single story B, M, S and F (and sometimes A4)
 - 507.3.1 – A-1 and A-2 in a 507.3 building
- 507.4 – two story B, M, S and F
- 507.5 – Group A-3 in Type II
- 507.6 – Group A-3 in Type III or IV
- 507.8 – Group E
- 507.9- Motion Picture

507.10 – covered malls

Please note that the text for the reduction in the surrounding open space was specifically allowed for 5 of the unlimited area building types. It didn't allow it for covered mall buildings, but Section 402 does allow a reduction. Therefore the new is added to prohibit the open space reduction for 3 building types and provide a reference to the reduction allowance for covered mall buildings. Group H is moved after accessory occupancies because the text of Section 507.8 essentially limits the height and area of H occupancies in these buildings in the same manner as accessory occupancies in general. Finally the reason that Section 507.3.1 is left where it is and not moved to be a subset of accessory occupancies is that the placement of Group A-1 or A-2 in a Section 507.3 building is an additional primary occupancy which must meet the special rules of Section 507.3.1.

Cost Impact: The proposed changes will not increase the cost of construction.

G114-12

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

507-G-RICE.doc

G115 – 12

507.1

Proponent: Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee (BCAC)

Revise as follows:

507.1 General. The area of buildings of the occupancies and configurations specified in Sections 507.1 through 507.12 shall not be limited. Basements not more than one story below grade plane shall be permitted.

Exception: Other occupancies shall be permitted in unlimited area buildings in accordance with the provisions of Section 508.2.

Where Sections 507.2 through 507.12 require buildings to be surrounded and adjoined by *public ways* and *yards*, those open spaces shall be determined as follows:

1. *Yards* shall be measured from the building perimeter in all directions to the closest interior *lot lines* or to the exterior face of an opposing building located on the same *lot*, as applicable.
2. Where the building fronts on a *public way*, the entire width of the *public way* shall be used.

Reason: Intended to clarify the existing provision that is currently silent on whether or not a basement is permitted under any of the unlimited area building provisions. However, the code is a permissive code, i.e. either the code provisions explicitly prohibit or provide specific requirements that control the construction of buildings and conditions. If the Code does not prohibit a particular building design or process, or the Code does not control the building design or process with specific requirements, then it is permitted by Code. Therefore, since the Code is silent on whether or not an unlimited area building can have a basement, the Code therefore permits a basement, or for that matter, multiple basements.

This issue had been discussed in the past at one of the legacy code development cycles back in 1985 (BOCA Code Proposal B23-85). That code proposal attempted to add to the unlimited one story sprinklered building provisions that such building "...do not contain a basement...". It should be noted that the legacy BOCA & SBCCI Codes did not have unlimited area provisions for 2 story sprinklered buildings like the legacy UBC or the present IBC do permit. BOCA Code Proposal B23-85 was denied by the BOCA Code Development Committee with the following reason: "A total prohibition of basement areas would be unnecessarily restrictive. Certain industrial processes require the use of below-floor areas by nature of the process. Some amount of basement area would be acceptable if limited in size."

Through discussion between the BCAC and FCAC Committee it was agreed that the basement conditions should be codified similar to what is now permitted for buildings designed under the general height and area requirements of the Code (See Section 506.4 Exception and Section 506.5). Any sprinkler provisions in Section 507 would also be applicable to the basement as well. In addition, the sprinkler provisions of Section 903.2.11.1 would also be applicable to unlimited area nonsprinklered buildings designed under Section 507.2 (Group F-2 or S-2).

This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

Cost Impact: The proposed changes will not increase the cost of construction..

G115-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

507.1#1-G-BAJNAI-BCAC

G116 – 12

507.1, 507.1.1 (NEW)

Proponent: Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee (BCAC)

Revise as follows:

507.1 General. The area of buildings of the occupancies and configurations specified in Sections 507.1 through 507.12 shall not be limited.

~~**Exception:** Other occupancies shall be permitted in unlimited area buildings in accordance with the provisions of Section 508.2.~~

Where Sections 507.2 through 507.12 require buildings to be surrounded and adjoined by *public ways* and *yards*, those open spaces shall be determined as follows:

1. *Yards* shall be measured from the building perimeter in all directions to the closest interior *lot lines* or to the exterior face of an opposing building located on the same *lot*, as applicable.
2. Where the building fronts on a *public way*, the entire width of the *public way* shall be used.

507.1.1 Accessory occupancies. Accessory occupancies shall be permitted in unlimited area buildings in accordance with the provisions of Section 508.2, otherwise the requirements of Sections 507.2 through 507.12 shall be applied, where applicable.

Reason: Intended to be editorial to provide better understanding and clarify the existing provision. The exception was deleted and placed as a subsection of Section 507.1. As a subsection, the requirement for accessory occupancies permitted in unlimited area buildings is clarified that if such occupancies do not meet the Section 508.2 (and its subsections) requirements, then the requirements for unlimited area buildings in Section 507.2 through 507.12 would be applied to any such occupancy.

This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

Cost Impact: The proposed changes will not increase the cost of construction..

G116-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

507.1#2-G-BAJNAI-BCAC

G117 – 12

507.1

Proponent: Ali M. Fattah City of San Diego, Development Services Department, representing San Diego Area Chapter of ICC (afattah@sandiego.gov)

Revise as follows:

507.1 General. The area of buildings of the occupancies and configurations specified in Sections 507.1 through 507.12 shall not be limited.

Exception:

1. Other occupancies shall be permitted in unlimited area buildings in accordance with the provisions of Section 508.2.
2. Accessory occupancies classified as Group A, B, E, F, M, or S shall be permitted in unlimited area buildings when they exceed the limits in Section 508.2 where the most restrictive requirements in Sections 507.2 through 507.7 are satisfied and where the occupancies are separated in accordance with Section 508.4.

Where Sections 507.2 through 507.12 require buildings to be surrounded and adjoined by *public ways* and *yards*, those open spaces shall be determined as follows:

1. *Yards* shall be measured from the building perimeter in all directions to the closest interior *lot lines* or to the exterior face of an opposing building located on the same *lot*, as applicable.
2. Where the building fronts on a *public way*, the entire width of the *public way* shall be used.

Reason: This code change is necessary to allow two unlimited area buildings to in essence be combined into one building. The permitted occupancies allowed in buildings not limited in area have been expanded since the legacy codes were combined into the IBC. Exception 1 permits accessory occupancies to be located in unlimited area buildings complying with Section 508.2 that limits the area of all accessory occupancies in the building to 10%.

The Section as published in the 2012 IBC limits the area of an accessory occupancy with a lower fire loading to that of the main occupancy for example a group E accessory to a group M. Strip shopping centers can include unlimited area buildings that house in the same building Group M, B, A-2, A-3, E occupancies.

- An existing multi-tenant unlimited area building complying with Section 507.7 can include a fitness center classified as Group A-3 however a mercantile occupancy cannot be permitted in the building since it is not accessory to the Group A. Even if the mercantile occupancy were accessory it would be limited to 10% of the floor area.
- An existing multi-tenant unlimited area building complying with Section 507.3 can include unlimited areas of Group S, F and M as well as Group B. however if a remodel changes a portion to Group A-3 such as a fitness center the group A would not be permitted even though it will include a fire load that is substantially less than group S storage or potentially more hazardous Group F.
- The reverse could be true where a large amusement facility such as a bowling alley cannot be included in a building that includes restaurants and mercantile occupancies however independently these uses can be in unlimited area buildings.

Section 507.3 includes B, F, M and S and allows limited A and E accessory uses. Section 507.3.1, 507.6, 507.7 and 507.10 allow Group A or E to be the primary occupancy and Group B, F, M and S or A or E to be accessory.

The proposed new exception 2 allows any combination of the occupancies other than Group H that area addressed in Section 507 to be located in combination with any of the other occupancies in the Section if the most restrictive requirements are satisfied.

Section 508.3 addresses non separated uses and is less restrictive than Section 508.2 in that it does not limit the aggregate area to 10% as the accessory uses occupancies and allows them to be located in a building not however unlike accessory occupancies the occupancies do not go away notwithstanding the type of construction limitation in Section 508.3.2 require

Cost Impact: None. The code change proposal will not increase the cost of construction.

G117-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

507.1-G-FATTAH

G118 – 12

507.4, 507.4.1 (NEW), 507.4.2 (NEW)

Proponent: David S. Collins, The Preview Group, Inc., The American Institute of Architects
(dcollins@preview-group.com)

Revise as follows:

507.4 ~~Two-story Group B, F, M or S.~~ The area of a Group B, F, M or S building ~~no more than two stories above grade plane~~ shall not be limited where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, and is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

507.4.1 Two Story. Unlimited area buildings of Group B, F, M or S occupancies shall be limited to two stories in height if of Type V construction.

507.4.2 Three Story. Unlimited area buildings of Group B, E, F, M or S occupancies shall be limited to three stories in height if of Type I, II, III or IV construction.

Reason: The mall criteria in Section 402 are nothing more than a detailed description of another unlimited area building that includes many of the same occupancies that are already permitted to be unlimited based on various heights and types of construction. It isn't clear that there are special provisions within the mall

This change will allow a two story unlimited area building of B, F, M or S of any type of construction (Type V), but will also allow a three story building if of Types I, II, III or IV construction as permitted for mall buildings or anchor buildings in Section 402.

Cost Impact: The increased understanding of what the code intends regarding unlimited area buildings will significantly reduce the cost of design and review.

G118-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

507.4-G-COLLINS

G119 – 12

507.4

Proponent: Joel Bringhurst, CH2M Hill Engineers, representing IM Flash Technologies (jowl.bringhurst@ch2m.com)

Revise as follows:

507.4 Two story. The area of a Group B, F, H-5 M or S building no more than two stories above grade plane shall not be limited where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, and is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

Reason: History of H-5 Occupancy

Semiconductor fabrication facilities were first constructed as B-2 occupancy prior to the 1985 Uniform Building Code (UBC). In the 1985 UBC the occupancy group of H-6 was first introduced. It was a new classification for semiconductor fabrication facilities and related support uses. The H-6 occupancy ultimately became the H-5 occupancy in the 2000 International Building Code (IBC).

The definitive guide for the introduction of the H-6 occupancy in the 1985 UBC was the book *H-6 Design Guide to the Uniform Codes for High Tech Facilities* written by Alfred Goldberg, P.E., H.A.I.A. (Consulting Engineer) and Larry Fluer (Technical Consultant – Hazardous Materials). On page 3-2 the authors state the following:

“For the new Group H, Division 6 class, the original use of most of the existing fabrication facilities was classified as Group B, Division 2. The new H-6 class has virtually the identical code provisions in Table Nos. 5-C and 5-D as does the B-2 class. The intent of the H-6 code change is to consider that there is no change in use involved where the present and prior use was as a semiconductor fabrication facility. The intent is simply to assign a new name or designation to the existing use (see Section 104(c)).”

“However, any future alterations or changes will require compliance with the applicable provisions of the new H-6 classification. As provided in Section 104(c), in no case should an existing fabrication facility be made to conform to the new H-6 provisions simply as a result of a jurisdiction adopting or utilizing the new code provisions, except for those portions where alterations or changes are undertaken.”

At the inception of the H-6 occupancy, this statement established an equivalent relative hazard level between H-6 and B-2 occupancies. In their discussion of relative hazards of occupancies Goldberg and Fluer further state on page 3-4 that “these determinations are made based on Table Nos. 5-C and 5-D allowable for each of the occupancies being compared.”

Table 5-C is “Basic Allowable Area for Buildings One Story in Height” and Table 5-D is “Maximum Height of Buildings.” The allowable areas in Table 5-C for B-2 and H-6 occupancies for all construction types are exactly the same. The maximum heights in Table 5-D for B-2 occupancy are the same except for one story more than H-6 occupancy for all but the Type I-FR and Type II-FR construction types, which are somewhat higher than for H-6 occupancy.

The basic method for comparison of relative hazard of occupancies has long been established as being relative to allowable area and maximum height. On the basis of allowable area the B-2 and H-6 occupancies have the same hazard level. On the basis of height H-6 would be more hazardous than B-2 occupancy in a taller building.

Comparison of H-5 to Groups B, F, M, and S in IBC Section 507.4.

H-5 occupancy has the same allowable areas as B occupancy per IBC Table 503 for all construction types. IBC Table 503 now contains the information previously contained in Tables 5-C and 5-D in the 1985 UBC. The relationship between B and H-5 occupancies are unchanged from the relationship established between B-2 and H-6 occupancies in the 1985 UBC. This unchanged relationship is reinforced in the *2009 IBC Handbook: Fire and Life Safety Provisions*, page 84, which states:

“**415.8 Group H-5.** The Group H-5 occupancy category was created to standardize regulations for semiconductor manufacturing facilities. This section provides the specific regulations for these occupancies. The H-5 category requires engineering and fire-safety controls that reduce the overall hazard of the occupancy to a level thought to be equivalent to a moderate hazard Group B occupancy. Accordingly, the areas permitted for Group H-5 occupancies are the same as for Group B occupancies.”

H-5 occupancy has equal or greater allowable areas than F-1, M and S-1 occupancies for all construction types per IBC Table 503. As F-1, M and S-1 occupancies are included in the existing provisions for the unlimited area building, this could even be interpreted to indicate that H-5 occupancy, with all of its code-required mitigating features, is less hazardous than F-1, M and S-1 occupancies.

The maximum height in stories for H-5 occupancy is less than or equal to the maximum height for B occupancy in IBC Table 503, however, in no case is the maximum height of H5 occupancy less than 2 stories. The relative maximum height relationship between B and H-5 occupancies are relatively unchanged from the relationship established between B-2 and H-6 occupancies in the 1985 UBC. When it comes to height in stories it is acknowledged that H5 is more hazardous than B occupancy as the number of stories in the B is higher. This proposal for unlimited area per IBC Section 507.4 is within a provision that is conditional upon a two-story limitation; therefore this proposal is limited to the hazard comparison to allowable area provisions only from IBC Table 503.

H-5 occupancy has a significant number of IBC requirements that mitigate the hazards of H-5 compared to B occupancy in general. These mitigating requirements have effectively equalized the two occupancies in terms of relative hazard, which is

demonstrated by the equal allowable areas of the two occupancies within IBC Table 503, which has remained consistent over time. Again from the 2009 IBC Handbook, p84:

"The code requires that special ventilation systems be installed in fabrication areas that will prevent explosive fuel to air mixtures from developing. The ventilation system must be connected to an emergency power system. Furthermore, buildings containing Group H-5 occupancies are required to be protected throughout by an automatic fire-sprinkler system and fire and emergency alarm systems. Fire and emergency alarm systems are intended to be separate and distinct systems, with the emergency-alarm system providing a signal for emergencies other than fire. This section also provides requirements for piping and tubing that transport hazardous materials that allow piping to be located in exit corridors and above other occupancies subject to numerous, stringent protection criteria. The provisions for Group H-5 occupancies are correlated with companion provisions in Chapter 18 of the IFC."

Any hazards introduced by the inclusion of an unlimited area H5 occupancy in an unlimited area building per IBC Section 507.4 would be mitigated by sprinklers, side yards, and limits in story height the same as Groups B, F, M and S occupancies, which as compared in previous paragraphs, have equal or more hazard based on a relative allowable area comparison to H-5 occupancy.

Group H occupancies are currently allowed in unlimited area buildings per IBC Section 507.8. The occupancies specifically addressed are H-2, H-3, and H-4. These three occupancies are restricted to an area of 10 percent of the unlimited area building or the Table 503 limits. This establishes that specific uses of H occupancies with more hazard than H-5 are permitted in an unlimited area building. However, the restrictions in these provisions to H occupancies in IBC Section 507.8 are limited to H2, H3 and H4 and do not apply to H-5 occupancy, which is relatively less hazardous.

Differences between H-5 and Groups B, F, M and S

H-5 occupancy contains Hazardous Production Materials (HPMs). The B, F, M, and S occupancies are also permitted to have hazardous materials, but the quantity cannot exceed the Maximum Allowable Quantities (MAQ) in Tables 307.1 (1) and 307.1 (2). H-5 occupancy has numerous code-required mitigating features that effectively address the hazards of H5 and will not be impacted or reduced by this requested code change. The requirements of IBC Section 415.8 and other areas of the code relating to H-5 occupancy will remain in effect in their entirety with this proposal.

If H-5 occupancy is added to IBC Section 507.4 the H-5 occupancy will still be regulated relative to construction type and building height by IBC Chapter 5.

Conclusion

H-5 occupancy has a relative hazard based on allowable area per IBC Table 503 that is equal to or better than B, F, M, and S occupancies. Adding H-5 occupancy to the occupancies that are allowed to have unlimited area per IBC Section 507.4 would be consistent with the permitted level of hazard and mitigation established by this section. The code-required mitigating features of H-5 occupancy have been demonstrated for over 25 years to be effective since the introduction of the semiconductor fabrication facility occupancy in the 1985 UBC.

Cost Impact: Cost savings from Type I Construction, which is required for unlimited H-5 in Table 503

G119-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

507.4-G-BRINGHURST

G120 – 12

507.5.1 (NEW)

Proponent: David Scott, Target (David.Scott@target.com)

Add new text as follows:

507.5.1 Property Lines. Multiple, contiguous, individual buildings may be considered as one building for the purpose of determining allowable area if the following conditions are met:

1. Permanent open space on all sides as required by Section 507.1, 507.2, 507.3, 507.4, or 507.5: and
2. Proper legal agreements recorded with the deed for each of the separate properties. These recorded agreements shall require that the buildings as divided by property lines, be in conformance with the applicable provisions of this code, as if the buildings were a single building on a single piece of property. In addition, the agreement must state that no individual building or property owner may modify any portion of the building in any way that would not be in compliance with this code.

Reason: This allows individual building owners to purchase the land under their building within an overall development. Previously, a strip center type development could have a lease line between individual tenants. Replacing a lease line with a property line does not create any further hazard.

Cost Impact: The code change proposal will not increase the cost of construction.

G120-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

507.5.1 (NEW)-SCOTT

G121 – 12

507.8

Proponent: Homer Maiel, PE, CBO, Town of Atherton (CA), representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay)

Revise as follows:

507.8 Group H occupancies. Group H-2, H-3 and H-4 occupancies shall be permitted in unlimited area buildings containing Group F ~~and~~ or S occupancies, in accordance with Sections 507.3 and 507.4 and the provisions of Sections 507.8.1 through 507.8.4.

Reason: The word “and” implies that both Groups F and S have to be present in a building in order for this section to apply. Word “or” eliminates that misunderstanding.

Cost Impact: This code change will not increase the cost of construction.

G121-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

507.8-G-MAIEL

G122 – 12

507.12

Proponent: Jerry R. Tepe, FAIA, JRT•AIA Architect, representing The American Institute of Architects (jrtaia@aol.com)

Revise as follows:

507.12 Covered and open mall buildings and anchor buildings. The area of *covered and open mall buildings* and *anchor buildings* not exceeding three stories in height ~~in height~~ above grade plane that comply with Section 402 shall not be limited.

Reason: Revises the undefined term “height” to the appropriate language of “above grade plane.” There is no technical change intended.

Cost Impact: The proposed changes will not increase the cost of construction.

G122-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

507.12-G-TEPE

G123 – 12

508.1, 508.2, 508.2.1, 508.2.3, 508.3, 508.3.1, 508.3.2, 508.4, 508.4.1, 508.4.2, 508.4.3

Proponent: Gregory R. Keith, Professional heuristic Development, representing The Boeing Company (grkeith@keith@mac.com)

Revise as follows:

508.1 General. Each portion of a building shall be individually classified in accordance with Section 302.1. Where a building contains more than one occupancy classification group, each story containing mixed occupancies shall comply with one of the design options specified in Section 508.2, 508.3 or 508.4. ~~All stories within the same building are not required to use the same mixed occupancy design option. the building or portion thereof shall comply with the applicable provisions of Section 508.2, 508.3 or 508.4, or a combination of these sections.~~

Exceptions:

1. Accessory occupancies shall be permitted in conjunction with the non-separated design option where remainder of the story complies with Section 508.3.2.
- 4 2. Occupancies separated in accordance with Section 510.
- 2 3. Where required by Table 415.3.2, areas of Group H-1, H-2 and H-3 occupancies shall be located in a detached building or structure.
- 3 4. Uses within live/work units, complying with Section 419, are not considered separate occupancies.

508.2 Accessory occupancies occupancy design option. Accessory occupancies are those occupancies that are ancillary to the main occupancy of the building or portion thereof. Accessory occupancies shall comply with the provisions of Sections 508.2.1 through 508.2.4.

508.2.1 Area limitations. ~~Aggregate accessory occupancies shall not occupy more than 10 percent of the building area of the story in which they are located and shall not exceed the tabular values in Table 503, without building area increases in accordance with Section 506 for such accessory occupancies.~~

508.2.2 508.2.1 Occupancy classification. Accessory occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space.

508.2.3 508.2.2 Allowable building area and height. In each story, the allowable building area and height of the building shall be based on the allowable building area and height for the main occupancy in accordance with Section 503.1. Aggregate accessory occupancies shall not occupy more than 10 percent of the building area of the story in which they are located and shall not exceed the tabular values in Table 503, without building area increases in accordance with Section 506 for such accessory occupancies. The height of each accessory occupancy shall not exceed the tabular values in Table 503, without increases in accordance with Section 504 for such accessory occupancies. ~~The building area of the accessory occupancies shall be in accordance with Section 508.2.1.~~

508.2.4 508.2.3 Separation of occupancies. No separation is required between accessory occupancies and the main occupancy.

Exceptions:

1. Group H-2, H-3, H-4 and H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Group I-1, R-1, R-2 and R-3 *dwelling units* and *sleeping units* shall be separated from other *dwelling* or *sleeping units* and from accessory occupancies contiguous to them in accordance with the requirements of Section 420.

508.3 Nonseparated occupancies occupancy design option. Buildings or portions of buildings that comply with the provisions of this section shall be considered as nonseparated occupancies.

508.3.1 Occupancy classification. Non-separated occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the story building based on the occupancy classification of that space. In addition, the most restrictive provisions of Chapter 9 ~~that which~~ apply to the non-separated occupancies shall apply to the total story non-separated occupancy area. Where non-separated occupancies occur in a high-rise building, the most restrictive requirements of Section 403 ~~that which~~ apply to the non-separated occupancies shall apply throughout the high-rise building.

508.3.2 Allowable building area and height. In each story, the allowable building area and height, in feet and number of stories, of the building or portion thereof shall be based on the most restrictive allowances for the occupancy classifications groups under consideration for the type of construction of the building in accordance with Section 503.1.

508.3.3 Separation. No separation is required between nonseparated occupancies.

Exceptions:

1. Group H-2, H-3, H-4 and H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Group I-1, R-1, R-2 and R-3 *dwelling units* and *sleeping units* shall be separated from other *dwelling* or *sleeping units* and from other occupancies contiguous to them in accordance with the requirements of Section 420.

508.4 Separated occupancies occupancy design option. Buildings or portions of buildings that comply with the provisions of this section shall be considered as separated occupancies.

**TABLE 508.4
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)**

(No change to table or footnotes)

508.4.1 Occupancy classification. Separated occupancies shall be individually classified in accordance with Section 302.1. ~~Each separated space shall comply with this code based on the occupancy classification of that portion of the building.~~ The requirements of this code shall apply to each portion of the story based on the occupancy classification of that space. In addition, the most restrictive provisions of Chapter 9 that apply to occupancies not required to have an occupancy separation in accordance with Table 508.4, shall apply to the total un-separated occupancy area. Where such un-separated occupancies occur in a high-rise building, the most restrictive requirements of Section 403 that apply to the un-separated occupancies shall apply throughout the high-rise building.

508.4.2 Allowable building area. In each *story*, the *building area* shall be such that the sum of the ratios of the actual *building area* of each ~~separated~~ occupancy divided by the allowable *building area* of each ~~separated~~ occupancy shall not exceed 1.

508.4.3 Allowable height. Each ~~separated~~ occupancy shall comply with the *building height and number of story* limitations based on the type of construction of the building in accordance with Section 503.1.

Exception: Special provisions permitted by Section 510 shall permit occupancies at *building heights* other than provided in Section 503.1.

508.4.4 Separation. Individual occupancies shall be separated from adjacent occupancies in accordance with Table 508.4.

508.4.4.1 Construction. Required separations shall be *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both, so as to completely separate adjacent occupancies.

Reason: Section 508, which specifies the provisions applicable to mixed occupancies, has evolved over the relatively short life of the IBC. Most of these changes resolved inconsistencies between the legacy codes in this fundamental technical area and have resulted in a rational system of viable and relative design options based on relative risk. Some organizational or formatting changes were included in the previous revisions. This proposal is intended to correct lingering technical inconsistencies and offer final improvements to the organization and intent of mixed occupancy requirements.

The most important feature of this proposal is to clarify that individual design options (accessory, non-separated and separated) apply to an entire story; however, different design options can be used for various individual stories within a building. This is necessary so as to maintain the integrity of the IBC system for allowable area determination. Each design option specifies a method for allowable area determination. The allowable area of accessory occupancies is based on the allowable building area for the main occupancy (Section 508.2.3). The allowable area of non-separated occupancies is based on the most restrictive allowances for the occupancy classifications under consideration for the type of construction of the building (Section 508.3.2). The allowable area of separated occupancies is based on a unity formula calculation (Section 508.4.2). It should be noted that a new Exception 1 to Section 508.1 permits accessory occupancies (those occupancies occupying no more than 10% of the area of the story nor more than the tabular allowable area for such occupancy) to occur in conjunction with the non-separated mixed occupancy design option. This is a traditional interpretation based on some legacy codes and does no harm. Since neither the accessory occupancy nor the non-separated design options generally require a physical occupancy separation and the allowable area is reasonably controlled based on the most restrictive allowances of the occupancies not qualifying as accessory, a combination of these two mixed occupancy design options is acceptable.

Otherwise, if different mixed occupancy design options are used within a given story, the resulting gross floor level could be much larger than intended based on Table 503 and relative risk. For instance:

GIVEN:

A sprinklered, two story building of Type IIA construction.

A building story having a floor area of 79,500 square feet and containing three individual occupancies:

- A Group A-2 occupancy having a floor area of 5,500 square feet
- A Group B occupancy having a floor area of 14,000 square feet
- A Group F-1 occupancy having a floor area of 60,000 square feet

DETERMINE:

Is the building area for the story under consideration acceptable?

SOLUTION:

Examine the occupancies under consideration to determine if the story qualifies for the non-separated mixed occupancy design option. The occupancy classification requiring the most restrictive allowable area allowance is Group A-2. The floor area of the story (79,500 sf) is greater than that permitted for the most restrictive occupancy (46,500 sf). Therefore, the story does not qualify for the non-separated occupancy design option. Determine if the story qualifies for the accessory mixed occupancy design option. The floor area of the aggregate accessory occupancies of the story (19,500 sf) is greater than 10 percent of the building area of the story in which they are located (24.5 %). Therefore, the story does not qualify for the accessory occupancy design option. Determine if the story qualifies for the separated mixed occupancy design option. The sum of the ratios of the actual building area of each occupancy divided by the allowable building area of each occupancy exceeds 1: $[(5,500 \div 46,500) + (14,000 \div 112,500) + (60,000 \div 75,000)] = 1.042$. Therefore, the story does not qualify for the separated occupancy design option. Accordingly, the building does not comply with any of the three mixed occupancy design options. Therefore, the building must be redesigned by upgrading the type of construction, reconfiguring the occupancies, including building frontage, etc.

Combining design options within a given story is not permitted. Creativity may erroneously determine that such combination is acceptable. Such logic might follow:

Consider the Group A-2 occupancy as being accessory to the Group F-1 occupancy (9.2 %). Then consider the accessory occupancy portion of the story as an individual occupancy and evaluate the resultant Group F-1 and B occupancies as separated occupancies $[(65,500 \div 75,000) + (14,000 \div 112,500)] = .997$, therefore OK. This is an unacceptable practice for two reasons. First, Section 508.3.2 states that, "The allowable *building area and height* of the building shall be based on the allowable *building area and height* for the main occupancy in accordance with Section 503.1." What is not the main occupancy (Group F-1), is regarded as the accessory occupancy(s) (Groups A-2 and B). In this case, the accessory occupancies comprise 24.5 percent of the building area of the story in which they are located (current Section 508.2.1). Secondly, Section 508.4.1 states, "Separated occupancies shall be individually classified in accordance with Section 302.1." Additionally, Section 508.4.2 states that when determining the allowable area using the separated occupancy design option, "In each story, the *building area* shall be such that the sum of the ratios of the actual *building area* of each separated occupancy divided by the allowable *building area* of each separated occupancy shall not exceed 1. The consolidation of occupancies is not recognized. When design options are combined, the technical assumptions and relationships are lost.

The concept of mixed occupancy allowable area determination is based on limiting the area based on relative risk and the degree of occupancy separation. Therefore, it is critical that the allowable area based on fuel load or occupancy related concerns be balanced so as not to exceed acceptable levels of risk.

From a logical point of view, it makes no sense to allow for a building area greater than that allowed by any of the three design methods. The concept of mixed occupancy allowable area determination is based on limiting the area based on relative risk and the

degree of occupancy separation. Each of the methods weighs the required occupancy separation with the relative size of the story under consideration. Generally speaking, occupancy separations are not required when using the accessory occupancy or non-separated occupancy design options. The accessory occupancy option assumes that the percentage or size of the ancillary occupancies is sufficiently small so as to not to create an unacceptable level of relative risk without formal occupancy separations. The non-separated option assumes that since the proportion is not regulated, using the most restrictive requirements of the occupancies under consideration mitigates the need for formal occupancy separations. The separated option requires the performance of the sum of the ratios calculation to balance the relative risk and fuel load to no more than would ordinarily be experienced in single occupancy buildings. Additionally, where the occupancies under consideration are of dissimilar risk, formal occupancy separations are required with the separated design option.

In the original example, assuming that the building qualified for the separated occupancy design option, a one-hour fire-resistance rated occupancy separation would be required between the Group A-2 and the Group F-1 occupancies. The incorrect method of combining the design options within a given story allows an area greater than that allowed by the separated mixed occupancy design option and eliminates the required occupancy separation.

This issue also impacts the determination of the total allowable area in multistory mixed occupancy buildings. Section 506.5.2 requires that, "For buildings with more than three *stories above grade plane*, the total *building area* shall be such that the aggregate sum of the ratios of the actual area of each *story* divided by the allowable area of such *stories* based on the applicable provisions of Section 508.1 shall not exceed 3." The divisor necessarily needs to comply with one of the three mixed occupancy design options so as not to skew the overall building area calculation.

It is unfortunate that this rationale could not have been incorporated into previous modifications to Section 508. The nature of the code development process does not generally embrace comprehensive code changes, especially for contentious subject areas. The recommended modifications to Section 508 clarify the intent and introduce additional balance into IBC mixed occupancy procedures.

It is proposed that the sections applicable to allowable building area determination for the accessory and non-separated design options be revised to include identical charging language, "In each story, ..." as is the case with the separated design option in Section 508.4.2. Additionally, Section 508.1 has been reworded to specify that, "...each story containing mixed occupancies shall comply with one of the design options specified in Section 508.2, 508.3 or 508.4.

Some additional housekeeping changes are also included. Section 508.2.1 has been deleted and included in current Section 508.2.3. This move is consistent with the format of each of the design option subsections and technically consistent with the section heading, "Allowable building area and height." Additional editorial corrections have been made so as to be consistent with intent.

During discussion of mixed occupancy provisions during the previous code development cycle, it was noted that the provisions of Section 508.3.1 applicable to non-separated occupancies should also be made applicable to those occupancies not requiring an occupancy separation based on Table 508.4 for the separated design option. Section 508.4.1 has been modified to reflect that technical concern.

In summary, mixed occupancy provisions have continually evolved since the publication of the inaugural 2000 Edition of the IBC. The fundamental system of three mixed occupancy design options in Section 508 and incidental uses in Section 509 is contained in the 2012 IBC. This proposal intends to provide final adjustment and clarification to this system. Approval of this proposal will enhance consistency in the application of these very fundamental provisions.

Cost Impact: This code change proposal will not increase the cost of construction.

G123-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

508.1-G-KEITH

G124 – 12

508.1

Proponent: Ali M. Fattah, City of San Diego – Development Services Department, representing San Diego Area Chapter of ICC (afattah@sandiego.gov)

Revise as follows:

508.1 General. Each portion of a building shall be individually classified in accordance with Section 302.1. Where a building contains more than one occupancy group, the building or portion thereof shall comply with the applicable provisions of Section 508.2, 508.3 or 508.4, or a combination of these sections.

Exceptions:

1. Occupancies separated in accordance with Section 510.
2. Where required by Table 415.5.2, areas of Group H-1, H-2 and H-3 occupancies shall be located in a *detached building* or structure.
3. Uses within *live/work units*, complying with Section 419, are not considered separate occupancies.
4. Closets and storage rooms each not exceeding 100 sq ft in floor area and not used for the storage of hazardous materials regulated in Section 414 when the total floor area of such rooms is not more than 10% of the floor area of the story in which they are located.
5. Mechanical and electrical rooms not regulated as incidental uses in Section 509 where each room does not exceed 100 sq ft in floor area and when the total floor area of such rooms is not more than 10% of the floor area of the story in which they are located.

Reason: This code change is necessary to allow storage rooms and closets located in any occupancy to not be considered an S occupancy. The revisions to the incidental uses Table 509 over the last two code cycles removed small storage rooms as a consequence they need to be classified as Group S and considered accessory use or a separated or non-separated occupancy.

Closets and storage rooms located in occupancies in multistory buildings permitted otherwise to be of non-rated construction will be limited to buildings constructed of Type VA, IIIA or IIA construction or better. For example storage rooms and closets located above the second floor in a Group R-1 or Group R-2 occupancy four stories in height will require one-hour construction throughout or will not be permitted above the second story. Another example is a janitor's closet in a common area or a janitor's closet located within a multi-tenant building. Proposed exception 4 seeks to address this issue.

A small electrical/mechanical room located on the 5th floor of a type IIB building would not be permitted as accessory uses since Section 508.2.3 requires that the allowable height be established without increase for the accessory use. The electrical code and mechanical code and incidental use requirements will require the appropriate separation from the remainder of the building where appropriate. Proposed exception 5 addresses this issue.

Cost Impact: None. The code change proposal will not increase the cost of construction.

G124-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

508.1-G-FATTAH

G125 – 12

508.2.1, 508.2.3

Proponent: Sarah A. Rice, C.B.O., The Preview Group (srice@preview-group.com)

Revise as follows:

508.2.1 Area limitations. ~~Aggregate accessory occupancies shall not occupy more than 10 percent of the building area of the story in which they are located and shall not exceed the tabular values in Table 503, without building area increases in accordance with Section 506 for such accessory occupancies.~~ The aggregated area of the accessory occupancies located on a story shall not occupy more than 10 percent of the building area of the story in which they are located and shall not exceed the tabular values in Table 503. The building area increases in accordance with Section 506 shall not apply to accessory occupancies. The allowable building area of each story including the area of accessory occupancies shall be based on the allowable building area for the main occupancy.

508.2.3 Allowable building area and height Height limitations. ~~The allowable building area and height of the building shall be based on the allowable building area and height for the main occupancy in accordance with Section 503.1. The height of each accessory occupancy shall not exceed the tabular values in Table 503, without The building height increases in accordance with Section 504 shall not apply to for such accessory occupancies. The building area of the accessory occupancies shall be in accordance with Section 508.2.1.~~

Reason: The provisions for accessory occupancies currently jumble the discussion of the height limit for accessory occupancies with a restatement of the area limits of the whole building. This proposal does 2 things. It puts the regulations on area only in Section 508.2.1 and the regulations on height only in 508.2.3. It rewords each to provide clarity of the provision.

The final sentence of the revised Section 508.2.1 is currently the first sentence of Section 508.2.3. The sentence as it stands seems to be a repeat of the obvious – that the building area is determined by the regulations for building area. The revised sentence in 508.2.1 makes the connection with accessory occupancies that the area of the accessory occupancy is included in the total area. This is a distinction with the separated occupancy approach where you have to factor the allowable areas of each use. Even with the revision to the sentence, it might be better to delete it completely from the code.

Cost Impact: The proposed changes will not increase the cost of construction.

G125-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

508.2.1-G-RICE

G126 – 12

508.2.3

Proponent: Sarah A. Rice, C.B.O., The Preview Group (srice@preview-group.com)

Revise as follows:

508.2.3 Allowable building area and height. The allowable *building area and height* of the building containing accessory occupancies shall be based on the allowable *building area and height* for the main occupancy in accordance with Section 503.1. ~~The height of each accessory occupancy shall not exceed the tabular values in Table 503, without increases in accordance with Section 504 for such accessory occupancies.~~ The *building area* of the accessory occupancies shall be in accordance with Section 508.2.1.

Reason: The current text of 508.2.3 literally limits the location of an accessory occupancy in a building to the tabular height in Table 503 for the occupancy of the accessory occupancy. Imposing this limit is a total contradiction to what the accessory occupancy design option was intended to allow. When literally applied, an office building of Type IIC construction that is allowed to be 4 stories in height with sprinklers, could not have closets or storage rooms above the 2nd story as they are a Group S-1 (storage) occupancy and the tabular height limit in Table 503 is 2 stories.

And I emphasize “tabular” height limit because as the code is currently written, no height increase can be taken for a fully sprinklered building used when determining the vertical location of an accessory occupancy.

Another example would be linen storage rooms (Group S-1) in hotels of Type IIB construction. Based on Table 503 the tabular building height limit (in stories) for a Group S-1 occupancy is 2 stories, where the hotel (Group R-2) is allowed to be up to 5 stories when sprinklered. Because Group S-1 occupancies are not allowed above the 2nd story, linen storage closets would not be allowed above the 2nd story – a hotel cannot literally function without those storage spaces.

Without this code change many building designs as we know them today would continue to literally not be allowed.

Cost Impact: The proposed changes will not increase the cost of construction.

G126-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

508.2.3-G-RICE sar comments.doc

G127 – 12

Table 508.4

Proponent: Tony Crimi, A.C. Consulting Solutions Inc., (tcrimi@sympatico.ca), representing North American Insulation Manufacturers Association (NAIMA)

Revise as follows:

**TABLE 508.4
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)**

OCCUPANCY	A, E		I-1 ^a , I-3, I-4		I-2		R ^a		F-2, S-2 ^b , U		B, F-1, M, S-1		B		H-1		H-2		H-3, H-4		H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	<u>S</u>	<u>NS</u>	S	NS	S	NS	S	NS	S	NS
A, E	N	N	1	2	2	NP	1	2	N	1	1	2	<u>1</u>	<u>2</u>	NP	NP	3	4	2	3	2	NP
I-1 ^a , I-3, I-4	—	—	N	N	2	NP	1	NP	1	2	1	2	<u>1</u>	<u>2</u>	NP	NP	3	NP	2	NP	2	NP
I-2	—	—	—	—	N	N	2	NP	2	NP	2	NP	<u>2</u>	<u>NP</u>	NP	NP	3	NP	2	NP	2	NP
R ^a	—	—	—	—	—	—	N	N	1 ^c	2 ^c	1	2	<u>1</u>	<u>2</u>	NP	NP	3	NP	2	NP	2	NP
F-2, S-2 ^b , U	—	—	—	—	—	—	—	—	N	N	1	2	<u>1</u>	<u>2</u>	NP	NP	3	4	2	3	2	NP
B, F-1, M, S-1	—	—	—	—	—	—	—	—	—	—	N	N	<u>1</u>	<u>2</u>	NP	NP	2	3	1	2	1	NP
B	—	—	—	—	—	—	—	—	—	—	—	—	<u>N</u>	<u>N</u>	<u>NP</u>	<u>NP</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>NP</u>
H-1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	NP	NP	NP	NP	NP	NP
H-2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	1	NP	1	NP
H-3, H-4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1 ^d	NP	1	NP
H-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	NP	NP

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

N = No separation requirement.

NP = Not permitted.

a. See Section 420.

b. The required separation from areas used only for private or pleasure vehicles shall be reduced by 1 hour but to not less than 1 hour.

c. See Section 406.3.4.

d. Separation is not required between occupancies of the same classification.

Reasons: The purpose of this Code change is to break out the Group B Occupancies from Groups F-1, M, and S-1 since the current grouping in Table 508.4 does not represent similar hazards, and results in no fire separations being required between these.

This proposal aims to restore a portion of the level of protection afforded in the 2003 IBC and many of the Legacy Codes. While the current Table 508.4 was first revised for the 2006 IBC, few jurisdictions had any history with the lack of fire resistance rated separations between occupancies which the 2006 IBC would now permit.

As the table is currently formatted for required separation of occupancies under the separated occupancies option of Section 508.4, there is no occupancy separation required between any of the occupancies in the B, F-1, M, and S-1 Grouping, as indicated by the letter "N" contained in the table for those occupancy groups. However, a Group B occupancy generally has a significantly lower fire load than the Group F-1, M, and S-1 occupancies, and the occupancy hazard is different as well.

If Table 508.4 truly implements the separated occupancies option which mandates occupancy separations as compared to the nonseparated occupancies option in Section 508.3 which does not, it follows that there should be occupancy separations required between occupancies with different hazard characteristics. Group B occupancies generally have combustible fire loads less than 10 pounds per sq ft, as compared to the Group F-1, M, and S-1 occupancies which could have fire loads as much as 20 to 30 pounds per sq ft or more. Therefore, we have proposed a minimum 2-hour occupancy separation between the Group B occupancies and the Group F-1, M, and S-1 occupancies in nonsprinklered buildings and a minimum 1-hour fire-resistance rating in sprinklered buildings. This is consistent with the other occupancy classifications requiring occupancy separations between them and the Group F-1, M, and S-1 occupancies.

It should also be noted that this is consistent with the required occupancy separation for Group B/M mixed occupancies in former Table 302.3.2 of the 2003 IBC which Table 508.4 replaced in the 2006 IBC. And it is actually less restrictive than former Table 302.3.2 for the Group B/F-1 and Group B/S-1 mixed occupancies separations.

The concept of separation of major occupancies exists in Building regulations throughout the world. Certainly, those occupancy separations requirements used in the separated occupancies option have stood the test of time. There continues to be a critical need to separate adjacent major occupancies of dissimilar use, with fire-resistance rated construction. The previous Table 302.3.2 had been in use for the three plus years it existed in the 2000 and 2003 editions of the IBC. Furthermore, the occupancy separation fire resistance ratings from this predecessor table were taken directly from the BOCA National Building Code, along with the entire concept of the non-separated and separated occupancies in mixed occupancy buildings.

As currently published, the 2009 Code provisions in Section 508 blur the distinction between separated uses and the non-separated use options previously prescribed in Section 302.3.1. The full impact of this change has not yet been felt.

Bibliography & References:

¹ 2003 IBC, International Codes Council, Table 302.3.2

² 1996 BOCA National Building Code, BOCA

³ 1997 Standard Building Code, SBCCI

⁴ 1997 Uniform Building Code, ICBO

Cost Impact: The proposal will increase the cost of construction.

G127-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T508.4-G-CRIMI

G128 – 12

Table 508.4

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care

Revise as follows:

**TABLE 508.4
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)**

OCCUPANCY	A, E		I-1 ^a , I-3, I-4		I-2		R ^a		F-2, S-2 ^b , U		B ^e , F-1, M, S-1		H-1		H-2		H-3, H-4		H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
B ^e , F-1, M, S-1	—	—	—	—	—	—	—	—	—	—	N	N	NP	NP	2	3	1	2	1	NP

(Portions of table not shown remain unchanged)

- S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.
- NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.
- N = No separation requirement.
- NP = Not permitted.
- a. See Section 420.
- b. The required separation from areas used only for private or pleasure vehicles shall be reduced by 1 hour but to not less than 1 hour.
- c. See Section 406.3.4.
- d. Separation is not required between occupancies of the same classification.
- e. See Section 422.2 for ambulatory care facilities.

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

This footnote reminds the reader that although there is no separation required for many B occupancy to other occupancies that Section 422.2 would still require a 1 hour fire partition between other group B occupancies and F-1, M and S-1 occupancies.

Cost Impact: None

G128-12

Public Hearing: Committee: AS AM D
 Assembly: ASF AMF DF

T508.4-G-WILLIAMS-ADHOC

G129 – 12

509, 509.1

Proponent: Sarah A. Rice, C.B.O, The Preview Group (srice@preview-group.com)

Revise as follows:

SECTION ~~509~~ 425 INCIDENTAL USES

~~509.1~~ 425.1 General Incidental uses located within ~~single occupancy or mixed occupancy~~ buildings shall comply with the provisions of this section. Incidental uses are ancillary functions associated with a given occupancy that generally pose a greater level of risk to that occupancy and are limited to those uses listed in Table ~~509~~ 425.

Exception: Incidental uses within and serving a *dwelling unit* are not required to comply with this section.

~~509.2~~ 425.2 Occupancy classification. Incidental uses shall not be individually classified in accordance with Section 302.1. Incidental uses shall be included in the building occupancies within which they are located.

~~509.3~~ 425.3 Area limitations. Incidental uses shall not occupy more than 10 percent of the *building area* of the *story* in which they are located.

~~509.4~~ 425.4 Separation and protection. The incidental uses listed in Table ~~509~~ 425 shall be separated from the remainder of the building or equipped with an *automatic sprinkler system*, or both, in accordance with the provisions of that table.

~~509.4.1~~ 425.4.1 Separation. Where Table ~~509~~ 425 specifies a fire resistance- rated separation, the incidental uses shall be separated from the remainder of the *building* by a *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 711, or both. Construction supporting 1-hour *fire barriers* or *horizontal assemblies* used for incidental use separations in buildings of Type IIB, IIIB and VB construction is not required to be fire-resistance rated unless required by other sections of this code.

~~509.4.2~~ 425.4.2 Protection. Where Table ~~509~~ 425 permits an *automatic sprinkler system* without a *fire barrier*, the incidental uses shall be separated from the remainder of the building by construction capable of resisting the passage of smoke. The walls shall extend from the top of the foundation or floor assembly below to the underside of the ceiling that is a component of a fire-resistance-rated floor assembly or roof assembly above or to the underside of the floor or roof sheathing, deck or slab above. Doors shall be self- or automatic-closing upon detection of smoke in accordance with Section 716.5.9.3. Doors shall not have air transfer openings and shall not be undercut in excess of the clearance permitted in accordance with NFPA 80. Walls surrounding the incidental use shall not have air transfer openings unless provided with smoke dampers in accordance with Section 710.7.

~~509.4.2.1~~ 425.4.2.1 Protection limitation. Except as specified in Table ~~509~~ 425 for certain incidental uses, where an *automatic sprinkler system* is provided in accordance with Table ~~509~~ 425, only the space occupied by the incidental use need be equipped with such a system.

TABLE ~~509~~ 425 INCIDENTAL USES

(Portions of table not shown remain unchanged)

Reason: The proposal moves the regulations for Incidental Uses from Chapter 5 to Chapter 4. It makes no other changes. In the 2012 IBC, spaces identified as incidental uses by Table 509.1 are recognized as having unique characteristics that require unique protection methods. They are no longer part of the “mixed occupancy” philosophy of the code. The protection requirements for the incidental uses in Section 509 have no impact on the allowable height or area of the building and therefore no longer belong in Chapter 5; *General Building Heights and Areas*, but rather in Chapter 4; *Special Detailed Requirements Based on Use and Occupancy*. The intent of Chapter 5 is to establish the maximum allowable height and area of buildings where Chapter 4 is set up as the location where requirements specific and unique to a use or occupancy are located. Chapter 4 is already the location of special uses that aren’t necessarily distinct occupancies, but require special design and protection. Examples include – Section 416 Application of Flammable Finishes; Section 417 Drying Rooms; Section 418 Organic Coatings and Section 421 Hydrogen Cutoff Rooms. The historic location of the incidental uses regulations in Chapter 5 was based on previous attempts to call them out as distinct uses or treat them as a subset of accessory occupancies.

The only change in text is found in new Section 425.1 where the phrase “single occupancy or mixed occupancy” has been deleted. When incidental uses was a subsection to the Mixed occupancy provisions the phrase was necessary. Now that incidental uses are addressed in a separate and unique section, the language is unnecessary.

Cost Impact: The proposed changes will not increase the cost of construction.

G129-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

509-G-RICE.doc

G130 – 12

Table 509

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care

Revise as follows:

**TABLE 509
INCIDENTAL USES**

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input.	1 hour or provide automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen cutoff rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Incinerator rooms	2 hours and provide automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system
In Group E occupancies, laboratories and vocational shops, not classified as Group H, located in Group E or I-2 occupancy	1 hour or provide automatic sprinkler system
In Group I-2 occupancies, laboratories not classified as Group H	1 hour and provide automatic sprinkler system
In ambulatory care facilities, laboratories not classified as Group H	1 hour or provide automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system
<u>In Group I-2, laundry rooms over 100 square feet</u>	<u>1 hour</u>
<u>Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces</u>	<u>1 hour</u>
<u>In Group I-2, physical plant maintenance shops.</u>	<u>1 hour</u>
<u>In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms located in either Group I-2 occupancies or ambulatory care facilities with containers that have an aggregate volume of 10 cubic feet or greater</u>	<u>1 hour</u>
<u>In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet</u>	<u>1 hour or provide automatic sprinkler system</u>
<u>In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet</u>	<u>1 hour</u>
Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.

For SI: 1 square foot = 0.0929 m², 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L.

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx> This proposal is being co-sponsored by the ICC Code Technology Committee.

Currently, more detail is needed in the Incidental Use table to add spaces currently being maintained in healthcare and ambulatory care occupancies. The above chart makes the noted tables consistent with current operational and programmatic standards in the Group I-2 occupancy.

The current version of the table does not address the occasion when materials in a laboratory increases, most notably in the aggregate of larger histology / cytology laboratories. Materials such as xylene, hydrochloric acid, ethanol and fixatives (among others) are present in these areas. Although they are stored in gallon and liter quantities, and not bulk storage, the quantities add up over the larger lab control areas when they are in use at the benches.

The distinction between smaller stat labs, largely found in ambulatory care facilities, and larger clinical labs, found in hospitals, is being proposed. Ambulatory care facilities has been added to the current laboratory category to address those support spaces such as stat labs that are set up for a specific time-sensitive purpose, such as blood draw and chemotherapy, to save time in the Group B occupancy setting. Larger scale or non-critical lab operations are typically sent out to proprietary labs from ambulatory facilities. When addressing labs crossing the threshold into one hour rated construction, these labs are typically constructed as stand-alone operations and commonly appear in Group B occupancies, and are subject to the current occupancy separation requirements.

Volume thresholds are being considered in waste and linen collection rooms because basic exam spaces contain some level of waste containers and linen hampers without rising to the level of storage. The 10 cubic foot threshold represents essentially two medium sized linen hampers and/or trash receptacles. Larger linen and waste receptacle containers, and not the smaller containers typically found in an exam room or patient sleeping room, are subject to volume rather than square footage of the room because a relatively small space, with the 10 cubic foot threshold crossed in a space well below, for example, 100 square feet.

Group I-2 is also being added to the requirement for one hour rating with rooms equipped with padded surfaces. The instance of these rooms existing in a hospital is rare. It is prudent, however, to add the requirement where there is the occasion that such rooms are used in areas such as emergency departments, inpatient psychiatric units, or similar areas.

Physical plant and maintenance shops are a very specific function in a hospital building, and are being added to the table to ensure protection due to the stored materials related to the physical plant operation.

Addition of storage rooms as an area requiring 1 hour rated protection is a key functional aspect of a Group I-2 healthcare building. Areas that become unused become storage areas very quickly. Specifically calling out storage areas helps define and control the storage of combustibles, and avoid creating random storage in otherwise unmonitored or unprotected areas.

Areas addressed in the past, but are no longer included in the table, are addressed in the International Fire Code (IFC). For example, storage of combustible gases is addressed in IFC Section 5306.2 and has specific references to the Group I-2 occupancy. Gift shops, formerly listed as an incidental area requiring protection, have largely been eliminated from these requirements in the I-Codes and other model codes, and are addressed in the context of being open to the corridor.

In consideration of ambulatory care facilities, where not otherwise specifically called out, categories that are required for both Group B and I occupancies are assumed to cover Group I-2 and ambulatory care facilities. Examples of this interpretation are hydrogen cut-off rooms and stationary battery storage.

Cost Impact: The code change proposal will increase the cost of construction in facilities where the incidental uses occur.

G130-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T509-G-WILLIAMS-ADHOCHEALTHCARE.doc

G131 – 12

509.3

Proponent: Steve Thomas, Colorado Code Consulting, LLC, representing Colorado Chapter ICC (stthomas@coloradocode.net)

Delete without substitution:

~~**509.3 Area limitations.** Incidental uses shall not occupy more than 10 percent of the *building area* of the *story* in which they are located.~~

Reason: Incidental uses have been revised in every edition of the code. The original incidental uses did not have any area limitation and there were no reported issues through the 2006 edition of the IBC. When the uses were incorporated into accessory occupancies in the 2009 IBC, the 10 percent limitation was introduced. As the incidental uses were removed from the accessory occupancies, the 10 percent limitation was carried over. History has shown that the 10 percent limitation is not needed for incidental uses. This requirement is problematic in buildings where most if not all of the building is dedicated to uses listed in Table 509. For example a high school may have several classrooms that are classified as laboratories or vocational classrooms. These classrooms and labs typically exceed 10 percent of the story that they are located in. There is no guidance in the IBC to direct the user on how to address these situations. By eliminating the 10 percent limitation, the classrooms would still be required to be separated or protected with automatic sprinklers. However, they would not be limited. This would also address the condition where a large campus style project has a building that serves as a central heating plant as well.

Cost Impact: The proposed changes will not increase the cost of construction.

G131-12

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

509.3-G-THOMAS.doc

G132 – 12

509.3

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering (al.godwin@aon.com)

Revise as follows:

509.3 Area limitations. Incidental uses shall not occupy more than 10 percent of the *building area* ~~of the story~~ in which they are located.

Reason: In the last code cycle, this provision was added at the Final Action to code change G107-09/10. While it mirrors the requirement for Accessory occupancies, Section 508.2.1, and may have made since at the time, when actually put into practice it creates a problem.

It is not uncommon for high rise buildings to dedicate a full floor, either basement or 5th floor, to mechanical equipment. To expect them to allocate 10% per floor to such incidental uses is impractical.

In such designs, those floors can no longer be considered incidental and require the assignment of an occupancy classification. What is the occupancy classification of a boiler? Is it an F for making hot water or an S for storing hot water? What is the occupancy of refrigeration equipment?

What is the classification of a Group I-3 padded cells when the number of padded cells exceeds the limitation of Incidental Uses? Isn't it still an I-3? Is the 1-hour separation of Table 509 still required between I-3 padded cells exceeding 10% in area and the other I-3 cells on the floor? It would appear that they could use the non-separated mixed use provisions and avoid any separation. In that case, adding more padding eliminates the 1-hour separation.

And once a floor is classified as a Group S-1 or F-1, the building can no longer take the high-rise reduction from IB to IIA of Section 403.2.1.1(2).

Another example of a problem is "Laboratory and vocational shops, not classified as Group H, located in a Group E or I-2 occupancy." If such labs and/or vocational shops cannot be less than 10% of the floor, or with this proposal, 10% of the building, they are no longer an incidental use. They must be classified as something else.

No justification has been presented to show that full floor incidental uses are a problem. It may not be appropriate to limit the area at all, and the entire section should be deleted. However, deleting the "per floor" limitation may solve the problem and still meet the committees concerns of limiting the square footage.

Cost Impact: This code change proposal will not increase the cost of construction.

G132-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

509.3-G-GODWIN

G133 – 12

510.2

Proponent: Marshall Klein, P.E., Marshall A. Klein & Associates, Inc., representing (NMHC) (makleinfp@comcast.net) and Jason Thompson, P.E., National Concrete Masonry Association, representing Masonry Alliance for Codes and Standards

Revise as follows:

510.2 Horizontal building separation allowance. A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of *fire walls*, limitation of number of *stories* and type of construction where all of the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours.
- ~~2. The building below the *horizontal assembly* is not greater than one story above grade plane.~~

(Portions of text not shown remain unchanged)

Reason: (Klein) Item #2 of Section 510.2 is an antiquated section of the Code that was a carryover from the legacy 1997 UBC Section 311.2.2.1, “**Group S, Division 3 with Group A, Division 3; Group B, Group M or R, Division 1 Occupancy above**”. Under this section of the UBC the occupancies permitted below the 3 hour fire rated horizontal separation (i.e. parking garage, B, M and A-3 occupancies) were **not** required to be sprinklered. In the 2009 IBC, we revised the requirements under this Section of Code to **require** the building below the 3 hour fire rated horizontal separation to be sprinklered per Section 903.3.1.1 (NFPA 13) (See 2012 IBC Section 510.2(6)). Therefore, to limit the building under Section 510.2 that is of Type 1A Construction Type and sprinklered makes no sense anymore, and limits the use of this section of Code in major urban renewal areas of the US.

From a life safety/fire protection standpoint, permitting the Type 1A portion under the 3 hour horizontal separation to go to any number of stories, is an equal or better type of construction that is permitted by this section of code under Section 510.2(7). Section 510.2(7) permits the building(s) above the Type IA portion to be a maximum height in feet not to exceed the height limits set forth in Section 503 for the “...building having the smaller allowable height as measured from the grade plane...”. Therefore, a project built under Section 510.2 can presently have above the Type IA portion an R-2 occupancy, sprinklered per NFPA 13R, 4 story, Type 5A, maximum of 60' above grade plane (or an R-2 occupancy, sprinklered per NFPA 13, 4 story, Type 5A, maximum of 70' above grade plane). However, if Item #2 is deleted, then as the Type IA portion is increased in its number of stories above grade plane, the portion above is still limited by Item #7's height limitation and its “height footprint” is being reduced. The net effect is that because this section of the Code will not permit more stories for the Type IA Construction Type, sprinklered portion of the project, the net effect is the reduction of the height of the portion of the project that is of a lesser construction type that is above the Type IA portion. Therefore, from a life safety/fire protection standpoint, we have an equal or better code requirement that is more flexible to provide for the needs of our urban needs to bring people back into our major cities to live and work.

(Thompson) Section 510.2 of the IBC has requirements to allow buildings with certain occupancies to be constructed with mixed construction types by using what is commonly referred to as pedestal construction where a building of a lesser type of construction is permitted to be built on top of a building of Type IA construction and the different types of construction are allowed to be considered separate buildings. This method of construction is allowed provided specific criteria are met including the installation of a 3 hour horizontal assembly that acts as a de facto “fire wall” separating the two buildings from vertical fire exposure (Item 1) and by limiting the total building height to the maximum height permitted in Table 503 for the lesser construction type (Item 7). However, the present code limits the height of the Type IA portion of the building below the 3 hour horizontal assembly to a single story above grade plane (Item 2).

Type IA is the most stringent construction type in the IBC from a fire resistance and noncombustibility point of view. According to Table 503, except for Group H-1 and H-2 occupancies, all other occupancies in buildings of Type IA construction are permitted to be of unlimited height and area due to the inherent fire safety provided by the most fire resistive construction type. However, Item 2 in Section 510.2 limits the Type IA building serving as the base of the pedestal construction to one story in height. This code change proposes to delete the one story limitation for the Type IA building portion of the pedestal construction. This will allow the Type IA building serving as the base of the pedestal construction to be multiple stories while still maintaining the total building height limit in Item 7 of Section 510.2 which is based on the construction type of the lesser type of construction built on top of the Type IA pedestal. This makes good sense since the more stories of Type IA construction allowed above the grade plane, the less potential stories of combustible construction with less fire resistance there will be in the building above.

Cost Impact: (Klein) The construction will cost more because of the additional cost of Type IA construction, but without the additional story or stories of Type IA podium for commercial development the project would not be cost effective to build to promote urban development.

(Thompson) This will not increase the cost of construction.

G133-12

Public Hearing: Committee:
Assembly:

AS
ASF

AM
AMF

D
DF

510.2-G-KLEIN-COMBINED.doc

G134 – 12

510.2

Proponent: C. Ray Allshouse AIA, CBO, City of Shoreline, WA, representing the Washington Association of Building Officials Technical Code Development Committee (rallshouse@shorelinewa.gov)

Revise as follows:

510.2 Horizontal building separation allowance. A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of *fire walls*, limitation of number of *stories* and type of construction where all of the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours.
2. The building below the *horizontal assembly* is not greater than one *story above grade plane*.
3. The building below the *horizontal assembly* is of Type IA construction.
4. *Shaft, stairway, ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5.

Exception: Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided:

1. The building above the *horizontal assembly* is not required to be of Type I construction;
 2. The enclosure connects fewer than four *stories*; and
 3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.
5. The building or buildings above the *horizontal assembly* shall be permitted to have multiple Group A occupancy uses, each with an *occupant load* of less than 300, or Group B, M, R or S occupancies.
 6. The building below the *horizontal assembly* shall be protected throughout by an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and shall be permitted to be any of the following occupancies: occupancy allowed by this code except Group H.
 - 6.1. ~~Group S-2 parking garage used for the parking and storage of private motor vehicles;~~
 - 6.2. ~~Multiple Group A, each with an occupant load of less than 300;~~
 - 6.3. ~~Group B;~~
 - 6.4. ~~Group M;~~
 - 6.5. ~~Group R; and~~
 - 6.6. ~~Uses incidental to the operation of the building (including entry lobbies, mechanical rooms, storage areas and similar uses).~~
 7. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 503 for the building having the smaller allowable height as measured from the *grade plane*.

Reason: Current code language unnecessarily limits occupancy types under the building separation allowances in the case of horizontal separation assemblies when compared with vertical assemblies. Since a building is considered separate and distinct provided that all seven conditions listed in Section 510.2 are met, noting that these conditions specifically include Type IA construction below the 3-hour fire resistance rated horizontal assembly and the maximum building height shall not exceed Section 503 limits above the grade plane, why does the code also restrict Group E, I and F occupancies from consideration? Such occupancies could exist immediately next to these buildings limited by precisely the same height limitations with a less restrictive fire separation rating.

Cost Impact: The code change proposal will not increase the cost of construction.

G134-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

510.2-G-ALLSHOUSE

G135 – 12

510.2

Proponent: Stephen A. McGlocklin representing the City of Shoreline, WA
(smcglocklin@shorelinewa.gov)

Revise as follows:

510.2 Horizontal building separation allowance. A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of *fire walls*, limitation of number of *stories* and type of construction where all of the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 3 hours.
2. The building below the *horizontal assembly* is not greater than one *story above grade plane*.
3. The building below the *horizontal assembly* is of Type IA construction.
4. *Shaft, stairway, ramp* and escalator enclosures through the *horizontal assembly* shall have not less than a 2-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5.

Exception: Where the enclosure walls below the *horizontal assembly* have not less than a 3-hour *fire-resistance rating* with opening protectives in accordance with Section 716.5, the enclosure walls extending above the *horizontal assembly* shall be permitted to have a 1-hour *fire-resistance rating*, provided:

1. The building above the *horizontal assembly* is not required to be of Type I construction;
2. The enclosure connects fewer than four *stories*; and
3. The enclosure opening protectives above the *horizontal assembly* have a *fire protection rating* of not less than 1 hour.

5. The building or buildings above the *horizontal assembly* shall be permitted to have ~~multiple Group A occupancy uses, each with an occupant load of less than 300, or Group~~ B, M, R or S occupancies.
6. The building below the *horizontal assembly* shall be protected throughout by an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, and shall be permitted to be any of the following occupancies:
 - 6.1. Group S-2 parking garage used for the parking and storage of private motor vehicles;
 - 6.2. ~~Multiple Group A, each with an occupant load of less than 300;~~
 - 6.3. Group B;
 - 6.4. Group M;
 - 6.5. Group R; and
 - 6.6. Uses incidental to the operation of the building (including entry lobbies, mechanical rooms, storage areas and similar uses).
7. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 503 for the building having the smaller allowable height as measured from the *grade plane*.

Reason: Current code language unnecessarily limits Group A occupancies under the building separation allowances involving horizontal assemblies. If there is a legitimate reason to limit the assembly occupant load above or below the horizontal assembly, one could argue that the current code language is flawed as it allows for multiple Group A occupancies with individual occupant loads of less than 300. However, given that it appears the intent of the code is to not restrict this total occupant load, the individual limitation for each Group A occupancy is not a logical restriction and should therefore be removed.

Cost Impact: The code change proposal will not increase the cost of construction.

G135-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

510.2-G-MCGLOCKLIN

G136 – 12

510.2

Proponent: Joe Nebbia and Mark Nowak, Steel Framing Alliance

Revise as follows:

510.2 Horizontal building separation allowance. A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of *fire walls*, limitation of number of *stories* and type of construction where all of the following conditions are met:

1. through 6. (*no change*)
7. The maximum *building height* in feet (mm) shall not exceed the limits set forth in Section 503 for the building having the smaller allowable height as measured from the *grade plane*. Additionally, when Type V buildings are constructed above the horizontal separation, the combined maximum number of stories measured from the grade plane shall not exceed the limits set forth in Section 503 for the building having the smaller number of stories.

Reason: Condition 7 as it currently reads is intended to limit heights of buildings consistent with fire safety concerns. It is particularly important for unprotected (Type V) combustible construction to not exceed building heights from a fire fighting capability perspective but also to limit the occupants at risk in this type of construction. This proposal limits the total number of stories from grade plane (and thus occupants) when Type V construction is used above a horizontal separation to the same limits originally intended in Table 503 for Type V construction. It will prevent a frequent misapplication of the code that results in combustible materials being used at heights that have not been shown or viewed to be safe from a fire protection perspective.

The horizontal separation height increase allowance is being misapplied to allow combustible construction with buildings as high as 5 stories (e.g., 4 wood framed stories on top of a concrete, steel, or masonry story), beyond the height traditionally viewed as safe. This proposal will eliminate this loophole in the code.

Increasing the height or allowing more stories when using combustible materials increases the risk, independent of the presence of a horizontal building assembly. This proposal is consistent with the defend-in-place approach of protecting occupants. According to the NFPA 2008 Fire Protection Handbook (Section 20), there are multiple components to the defend-in-place approach including but not limited to compartmentalization, sprinklers, and use of fire-resistive materials. The principle cannot depend on any one safeguard. The Handbook frequently references the need for noncombustible materials through multiple sections discussing the defend-in-place principles.

This proposal is also consistent with the fire safety approach that strives to limit the reliance on vertical evacuation. Introducing additional sets of stairs into the emergency egress equation is particularly risky for occupancies where occupants are not familiar with the building or require assistance with evacuation.

Although important for all buildings, it particularly important to correct this deficiency in the code for buildings that are occupied as living quarters or for medical or other care facilities either on a permanent or temporary basis. Yet, designers of residential buildings are most often the ones that take advantage of the horizontal separation to build higher with combustible materials. In fact, there are websites and industry-sponsored seminars that offer assistance to designers showing how to build taller with combustible materials specifically citing this section of the code as the rationale.

Cost Impact: This code change proposal will increase the cost of construction. Cost impacts will be limited to a small number of Type V buildings.

G136-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

510.2 #1-G-NEBBIA-NOWAK.doc

G137 – 12

510.2

Proponent: Joe Nebbia and Mark Nowak, Steel Framing Alliance

Revise as follows:

510.2 Horizontal building separation allowance. A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of *fire walls*, limitation of number of *stories* and type of construction where all of the following conditions are met:

1. through 7. (*no change*)
8. For Type V buildings with combustible framing members above the horizontal separation, all automatic fire sprinklers required by this code shall be in place and operable prior to continuing construction on any part of the building exceeding three stories above grade plane. Combustible framing members shall be protected by exterior and interior finishes or coverings permitted by this code before the total height of the building can exceed 3 stories above grade plane and before a certificate of occupancy is issued for any part of the building.

Reason: This proposal is designed to reduce the fire risk in Type V buildings to adjacent buildings and property, and reduce the risk of high intensity fires that require significant firefighting resources, leaving other areas in the community without adequate protection. Further, it will reduce the fire risk to occupants in buildings by prohibiting occupancy before all fire resistance and suppression systems are in place and operational in the building. It specifically addresses Type V buildings constructed with combustible materials that are exposed prior to and after construction, when such buildings exceed three stories in height.

Prompted by a series of serious fires in residential buildings, the London (UK) Assembly in 2010 called for an inquiry to examine fire safety issues. Among the findings by the examining commission was the determination that wood framing carries a high fire risk throughout most of the construction process. The risk extends beyond the building to include adjacent and neighboring buildings.

According to the report titled **Fire safety in London, Fire risks in London's tall and timber framed buildings**, "The effects of fire on large timber frame construction sites are significantly greater due to the large amount of exposed wood, the rapid spread and the radiated heat that can impact on surrounding buildings. All this can affect the ability of fire fighters to tackle the blaze."

The report further states "Fire risks in timber framed buildings are greatest during the construction phase when the fire resistant elements such as internal fire separating walls, protective linings and claddings and fire stopping in cavities are incomplete."

Insurance issues are also raised in the report, citing a quote by Zurich Insurance that timber framed buildings under construction "offer limited resistance until virtually the final stages of construction... This contrasts significantly to that provided in a more traditionally constructed or fire resisting construction system where the applied protection measures offer an immediate benefit in being applied to a noncombustible and generally more stable building elements"

Regarding the not uncommon practice of buildings being partially occupied, the report states that "timber frame buildings are not safe for occupation where there is still construction ongoing on site. Incomplete fire compartmentalization would make this extremely dangerous as fires can spread quickly to the occupied parts of the building and more so than "conventional" buildings." A significant recommendation in the report is that local authorities "do not permit the partial or full occupation of timber framed developments until the whole development is complete and signed off as complying with the approved building regulations."

The London report also cites several examples of the fires that initiated their study including the following that demonstrates the risk to adjacent properties and occupants:

In the afternoon of Wednesday 12 July 2006 there was a serious fire at a timber framed development situated between Aerodrome Road and Grahame Park Way in Colindale, London NW9. In response to the fire about 100 fire fighters spent five hours at the scene, during which time a number of neighboring premises, including Colindale Police Station and Hendon police college on opposite sides of the site, were evacuated and a stretch of the nearby A41 through Hendon was closed until 21:30 hours. Some 2000 local residents were evacuated from their homes. An adjoining building occupied by Middlesex University as halls of residence, was severely damage as a result of the fire spreading. Radiated heat also severely damaged 30 cars parked in the roads nearby.

A copy of the London Assembly report is available at <http://www.london.gov.uk/who-runs-london/the-london-assembly/publications/housing-planning/fire-safety-in-london>

The risk of exposed lumber in taller buildings is not limited to London. In fact, the first wood mid-rise building in British Columbia burned to the ground before it was finished in the spring of 2011. Because it was under construction, the building had no systems in place and the wood framing was exposed directly to the flames. When rebuilt, the project will follow fire department recommendations to include earlier installation and activation of sprinklers and fire doors, among other recommendations. This incident like the similar fires in London, stresses the importance of limiting the heights at which unprotected combustible construction should be permitted. Because the intensity of the fire is so much greater than other fires due to the exposed wood, these fires require substantial firefighting capabilities and often leave little to no protection for other parts of the city during the fire. The NFPA Fire Protection Handbook (2008 version, Page 11-52) also cites the vulnerability of buildings under construction and their threat to adjacent buildings. The Handbook presents a case study of a fire in a five story, wood framed building. Following is an excerpt:

The fire completely destroyed the building under construction and spread fire to many other buildings in the neighborhood. A total of over 20 buildings and 20 vehicles were damaged by the fire. Windows in a brick building across the street and at least 100 feet away were broken from the fire.

Further, the same case study states: *It (the fire) also emphasizes the importance of expediting the installation of sprinklers and the vulnerability of combustible construction materials before they are sheathed.*

Currently, Table 503 limits Type V construction to at most 3 stories except for low hazard storage (S-2), before any modifications to the allowable height are applied. This proposal, if approved, will require the building to be fully protected as required for a finished building before applying sprinkler or horizontal separations provisions of the code to increase building height. It will also remove an important oversight in the code by requiring combustible materials to be covered before occupancy of any part of the building.

Cost Impact: This code change proposal will increase the cost of construction. Cost impacts will be limited to a small number of Type V buildings.

G137-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

510.2 #2-G-NEBBIA-NOWAK.doc

G138 – 12

510.8

Proponent: Jason Thompson, P.E., National Concrete Masonry Association, representing Masonry Alliance for Codes and Standards

Revise as follows:

510.8 Group B or and M buildings with Group S-2 open parking garage above. Group B or and M occupancies located ~~not higher than the first story above grade plane~~ below a Group S-2 open parking garage of a lesser type of construction shall be considered as a separate and distinct building from the Group S-2 open parking garage for the purpose of determining the type of construction where all of the following conditions are met:

1. The buildings are separated with a *horizontal assembly* having a *fire-resistance rating* of not less than 2 hours.
2. The occupancies in the building below the *horizontal assembly* are limited to Groups B and M.
3. The occupancy above the *horizontal assembly* is limited to a Group S-2 open parking garage.
4. The building below the horizontal assembly is of Type IA construction.

Exception: The building below the horizontal assembly is shall be permitted to be of Type IB or II construction, but not less than the type of construction required for the Group S-2 open parking garage above, where the building below is not greater than one story in height above grade plane.

5. through 7. (no change)

Reason: Section 510.8 of the IBC has requirements that allow buildings with certain occupancies to be constructed with mixed construction types by using what is commonly referred to as pedestal construction where a building of a lesser type of construction is permitted to be built on top of a building of Type I or II construction and the different types of construction are allowed to be considered separate buildings. This method of construction is allowed provided specific criteria are met including the installation of a 2 hour horizontal assembly that acts as a de facto "fire wall" separating the two buildings from vertical fire exposure (Item 1) and by limiting the total building height to the maximum height permitted in Table 503 for the lesser construction type (Item 6). However, the present code limits the height of the Type I or II portion of the building below the 2 hour horizontal assembly to a single story above grade plane.

This code change proposes to delete the one story limitation where the lower building portion of the pedestal construction is of Type IA construction. This will allow the Type IA building serving as the base of the pedestal construction to be multiple stories in height while still maintaining the total building height limit in Item 6 of Section 510.8 which is based on the construction type of the lesser type of construction built on top of the Type IA pedestal. Type IA is the most stringent construction type in the IBC from a fire resistance and noncombustibility point of view. According to Table 503, except for Group H-1 and H-2 occupancies, all other occupancies in buildings of Type IA construction are permitted to be of unlimited height and area due to the inherent fire safety provided by the most fire resistive construction type. This makes good sense since the more stories of Type IA construction allowed above the grade plane, the less stories of potentially combustible construction and less fire resistance there will be in the building above.

This code change to Section 510.8 is very similar to another code change we have proposed to Section 510.2 Horizontal Building Separation Allowance for pedestal buildings with high fire resistive construction for the lower building of the pedestal.

Cost Impact: The code change will not increase the cost of construction.

G138-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

510.8-G-THOMPSON.doc

G139 – 12

Table 601

Proponent: Tony Crimi, A.C. Consulting Solutions Inc., (tcrimi@sympatico.ca), representing North American Insulation Manufacturers Association (NAIMA)

Revise as follows:

TABLE 601 FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

For SI: 1 foot = 304.8 mm.

- a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
- b. Except in Group F-1, H, M and S-1 occupancies, fire protection of ~~structural~~ secondary members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members. Fire protection is still required for structural members forming part of the primary structural frame.

(Portions of Table and footnotes not shown remain unchanged)

Reason: Table 601 Fire Resistance Rating Requirements for Building Elements specifies the hourly fire resistive requirements for building elements such as structural framing, floor and roof construction, and walls and partitions. Note b of Table 601 applies to the construction of the roof and related secondary members in all types of construction. It allows these secondary elements to be exempted from being protected construction when all parts of the roof construction are more than 20 feet (6096 mm) above any floor below. Previous editions of the IBC more clearly differentiated between structural members and the structural frame. The 2003 and 2006 IBC specified that the structural frame is considered to be the columns and the girders, beams, trusses, and spandrels having direct connections to the columns and bracing members designed to carry gravity loads. The members of floor or roof panels which have no connection to the columns were intended to be considered secondary members and not part of the structural frame.

The proposed addition clarifies that this exception applies to the structural members, but does not apply to all parts of the structural frame. This distinction is frequently misinterpreted in the field and many times the structural frame is also allowed to be eliminated. The 2009 IBC Commentary clearly confirms that this only applies to the secondary members of the structure and not to primary structural frame located within the roof or at this roof level, as shown in Figure 601(1) of the 2009 International Building Code, Code and Commentary, Volume 1, page 6-3. This alternative is applicable for all occupancy classifications except Groups F-1, H, M and S-1.

Figure 601(2) of the 2009 International Building Code, Code and Commentary, Volume 1, page 6-4 shows an example where a mezzanine reduces the clearance to the roof to less than 20 feet (6096 mm) for a portion of the total roof. The Code Commentary clearly illustrates that designs similar to Figure 601(2) do not comply with note b, and elimination of fire-resistance is not allowed for any of the roof in these cases.

According to the 2012 IBC, by definition, the primary structural frame includes the columns; structural members having direct connections to the columns, including girders, beams, trusses and spandrels; members of the floor construction and roof construction having direct connections to the columns; and bracing members that are essential to the vertical stability of the primary structural frame under gravity loading shall be considered part of the primary structural frame whether or not the bracing member carries gravity loads.

Cost Impact: This proposal does not increase the cost of construction.

G139-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

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G140 – 12

Table 601

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, (al.godwin@aon.com)

Revise as follows:

**TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)**

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A ^d	B	A ^d	B	HT	A ^d	B
Primary structural frame ^g (see Section 202)	3 ^a	2 ^a	1	0	1	0	HT	1	0
Bearing walls Exterior ^{f, g} Interior	3 3 ^a	2 2 ^a	1 1	0 0	2 1	2 0	2 1/HT	1 1	0 0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior ^e	0	0	0	0	0	0	See Section 602.4.6	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1½ ^b	1 ^{b,c}	1 ^{b,c}	0 ^c	1 ^{b,c}	0	HT	1 ^{b,c}	0

For SI: 1 foot = 304.8 mm.

d. — An approved automatic sprinkler system in accordance with Section 903.3.1.1 shall be allowed to be substituted for 1-hour fire-resistance-rated construction, provided such system is not otherwise required by other provisions of the code or used for an allowable area increase in accordance with Section 506.3 or an allowable height increase in accordance with Section 504.2. The 1-hour substitution for the fire resistance of exterior walls shall not be permitted.

(Portions of text not shown remain unchanged)

Reason: In order to take advantage of this footnote, the sprinkler system must be “not otherwise required.” The question is “required by what section?”

Obviously, it is known that if you take extra square footage or extra height and stories, the 1-hour tradeoff is not permitted.

And, it can be assumed that if the sprinkler system is installed to comply with the Fire Area provisions of Section 903, the system is required.

However, take note of Section 901.2 which states “Any fire protection system for which an exception or reduction to the provisions of this code has been granted shall be considered to be a required system.” Thus, if any of the following items are applied, the system is a required system:

- Flame spread reduction
- Extra travel distance
- Extra common path of egress travel
- Corridor fire rating reduction
- Dead end corridor extensions
- Open stairs in sprinklered two story buildings
- Etc.

The IBC commentary, Section 901.2, states:

“For example, a typical small office building may not require an automatic sprinkler system solely due to its Group B occupancy classification; however, if an exit access corridor fire-resistance-rating reduction is taken in accordance with Table 1018.1 for buildings equipped throughout with an NFPA 13 sprinkler system, that sprinkler system would be considered a required system.”

When looking at Table 503, how many buildings that are large enough to be a Type VA, IIIA or IIA and are not already required to be sprinklered by another provision of the code. Group B occupancies are the most obvious exempted occupancy.

And, if there is a building that is a VA, IIIA or IIA without being sprinklered, who is going to sprinkler a building and not take a sprinkler reduction as listed above.

Allowing this footnote to continue to exist opens the door to misuse. Sprinkler exceptions and reductions are going to be taken along with the 1-hour reduction, in violation of the provision. If not now, perhaps 5 years from now when the jurisdiction forgets that

a 1-hour reduction was granted.

There is no need to allow this footnote to continue to exist.

Cost Impact: This code change proposal will not increase the cost of construction since those projects that are taking one-hour reduction along with non-allowed trade-offs are non-compliant anyway.

G140-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

T601-G-GODWIN.doc

G141 – 12
602.4, Table 602.4

Proponent: Sam Francis, American Wood Council (sfrancis@awc.org)

Revise as follows:

602.4 Type IV. Type IV construction (Heavy Timber, HT) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid or laminated wood without concealed spaces. The details of Type IV construction shall comply with the provisions of this section. *Fire-retardant-treated wood* framing complying with Section 2303.2 shall be permitted within exterior wall assemblies with a 2-hour rating or less. Minimum solid sawn nominal dimensions are required for structures built using Type IV construction (HT). For glued laminated members and Structural Composite Lumber (SCL) members, the equivalent net finished width and depths corresponding to the minimum nominal width and depths of solid sawn lumber are required as specified in Table 602.4.

TABLE 602.4
WOOD MEMBER SIZE EQUIVALENCIES

MINIMUM NOMINAL SOLID SAWN SIZE		MINIMUM GLUED-LAMINATED NET SIZE		MINIMUM STRUCTURAL COMPOSITE LUMBER NET SIZE	
Width, inch	Depth, inch	Width, inch	Depth, inch	Width, inch	Depth, inch
8	8	6¾	8¼	7	7½
6	10	5	10½	5¼	9½
6	8	5	8¼	5¼	7½
6	6	5	6	5¼	5½
4	6	3	6⅞	3½	5½

Reason: Along with large solid-sawn and glued-laminated timbers, Structural Composite Lumber (SCL) can be produced in sizes necessary to qualify for Heavy Timber construction. Net dimensions of typical SCL members are similar to the net dimensions of nominal solid sawn timbers; however, the minimum width dimensions are slightly less than solid sawn timber widths and slightly greater than the glued-laminated timber net widths. In order to estimate equivalent cross-sectional dimensions, the initial section properties of the solid-sawn and glued-laminated timbers were compared with initial section properties of SCL. Starting with common SCL net widths between solid-sawn and glued-laminated timber net widths, minimum net depths were estimated for each nominal heavy timber size to provide similar net section properties. The resulting net dimensions were then incorporated into Table 602.4.

Cost Impact: The code change proposal will not increase the cost of construction.

G141-12

Public Hearing: Committee: AS AM D
 Assembly: ASF AMF DF

602.4 #1-G-FRANCIS

G142 – 12

PART 1 – IBC GENERAL

602.4, 602.4.1 (NEW), 602.4.2 (NEW), 602.4.4, 602.4.6.2 (NEW), 602.4.5, 602.4.6, 602.4.8.1, 602.4.8.2 (NEW),

PART 2 – IBC STRUCTURAL

202, 2303.1.4 (NEW), Chapter 35

Proponent: Sam Francis, American Wood Council (sfrancis@awc.org)

THIS IS A 2 PART CODE CHANGE. THE FIRST PART WILL BE HEARD BY THE IBC GENERAL COMMITTEE AND THE SECOND BY THE IBC STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

PART I – IBC GENERAL

Revise as follows:

602.4 Type IV. Type IV construction (Heavy Timber, HT) is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of solid or laminated wood without concealed spaces. The details of Type IV construction shall comply with the provisions of this section. ~~Fire retardant treated wood framing complying with Section 2303.2 shall be permitted within exterior wall assemblies with a 2-hour rating or less.~~ Exterior walls complying with Section 602.4.1 or 602.4.2 shall also be permitted. Minimum solid sawn nominal dimensions are required for structures built using Type IV construction (HT). For glued-laminated members the equivalent net finished width and depths corresponding to the minimum nominal width and depths of solid sawn lumber are required as specified in Table 602.4. Cross laminated timber (CLT) dimensions used in this section are actual dimensions.

602.4.1 Fire-retardant-treated wood framing complying with Section 2303.2 shall be permitted within exterior wall assemblies with a 2-hour rating or less.

602.4.2 Cross-laminated timber complying with Section 2303.1.4 shall be permitted within exterior wall assemblies with a 2-hour rating or less, provided the exterior surface of the cross-laminated timber is protected by (1) fire retardant treated wood sheathing complying with 2303.2 and not less than 15/32 inch thick; or (2) gypsum board not less than ½ inch thick; or (3) a noncombustible material.

602.4.4 602.4.3 Columns. Wood columns shall be sawn or glued laminated and shall be not less than 8 inches (203 mm), nominal, in any dimension where supporting floor loads and not less than 6 inches (152 mm) nominal in width and not less than 8 inches (203 mm) nominal in depth where supporting roof and ceiling loads only. Columns shall be continuous or superimposed and connected in an approved manner.

602.4.2 602.4.4 Floor framing. Wood beams and girders shall be of sawn, or glued-laminated *timber* and shall be not less than 6 inches (152 mm) nominal in width and not less than 10 inches (254 mm) nominal in depth. Framed sawn, glued-laminated *timber* arches, which spring from the floor line and support floor loads, shall be not less than 8 inches (203 mm) nominal in any dimension. Framed timber trusses supporting floor loads shall have members of not less than 8 inches (203 mm) nominal in any dimension.

602.4.3 602.4.5 Roof framing. Wood-frame or glued-laminated arches for roof construction, which spring from the floor line or from grade and do not support floor loads, shall have members not less than 6 inches (152 mm) nominal in width and have not less than 8 inches (203 mm) nominal in depth for the lower half of the height and not less than 6 inches (152 mm) nominal in depth for the upper half. Framed or glued-laminated arches for roof construction that spring from the top of walls or wall abutments, framed timber trusses and other roof framing, which do not support floor loads, shall have members not less than 4 inches (102 mm) nominal in width and not less than 6 inches (152 mm) nominal in depth. Spaced

members shall be permitted to be composed of two or more pieces not less than 3 inches (76 mm) nominal in thickness where blocked solidly throughout their intervening spaces or where spaces are tightly closed by a continuous wood cover plate of not less than 2 inches (51 mm) nominal in thickness secured to the underside of the members. Splice plates shall be not less than 3 inches (76 mm) nominal in thickness. Where protected by approved automatic sprinklers under the roof deck, framing members shall be not less than 3 inches (76 mm) nominal in width.

602.4.4 602.4.6 Floors. Floors shall be without concealed spaces. Wood floors shall be constructed in accordance with 602.4.6.1 or 602.4.6.2.

602.4.6.1 Sawn or glued-laminated planks. ~~of~~ Sawn or glued-laminated planks, splined or tongue-and-groove, of not less than 3 inches (76 mm) nominal in thickness covered with 1-inch (25 mm) nominal dimension tongue-and-groove flooring, laid crosswise or diagonally, or 0.5-inch (12.7 mm) particleboard or planks not less than 4 inches (102 mm) nominal in width set on edge close together and well spiked and covered with 1-inch (25 mm) nominal dimension flooring or 15/32-inch (12 mm) wood structural panel or 0.5-inch (12.7 mm) particleboard. The lumber shall be laid so that no continuous line of joints will occur except at points of support. Floors shall not extend closer than 0.5 inch (12.7 mm) to walls. Such 0.5-inch (12.7 mm) space shall be covered by a molding fastened to the wall and so arranged that it will not obstruct the swelling or shrinkage movements of the floor. Corbelling of masonry walls under the floor shall be permitted to be used in place of molding.

602.4.6.2 CLT. *Cross laminated timber* shall be not less than 4 inches (102 mm) in thickness. It shall be continuous from support to support and mechanically fastened to one another. *Cross laminated timber* shall be permitted to be connected to walls without a shrinkage gap providing swelling or shrinking is considered in the design. Corbelling of masonry walls under the floor shall be permitted to be used.

602.4.5 602.4.7 Roofs. Roofs shall be without concealed spaces and wood roof decks shall be sawn or glued laminated, splined or tongue-and-groove plank, not less than 2 inches (51 mm) nominal in thickness; ~~1 1/8-inch-thick (32 mm) wood structural panel (exterior glue); or of~~ planks not less than 3 inches (76 mm) nominal in width, set on edge close together and laid as required for floors; ~~or of cross laminated timber.~~ Other types of decking shall be permitted to be used if providing equivalent fire resistance and structural properties

Cross laminated timber roofs shall be not less than 3 inch nominal in thickness and shall be continuous from support to support and mechanically fastened to one another.

602.4.6 602.4.8 Partitions and Walls. Partitions and walls shall comply with 602.4.8.1 or 602.4.8.2.

602.4.8.1 Interior Walls and Partitions. Interior walls and partitions shall be of solid wood construction formed by not less than two layers of 1-inch (25 mm) matched boards or laminated construction 4 inches (102 mm) thick, or of 1-hour fire-resistance-rated construction.

602.4.8.2 Exterior walls. All exterior walls shall be of one of the following:

1. Noncombustible materials; or
2. Not less than 6 inches in thickness and constructed of one of the following:
 - 2.1 Fire retardant treated wood in accordance with 2303.2 and complying with 602.4.1 or
 - 2.2. Cross laminated timber complying with 602.4.2.

602.4.7 602.4.9 Exterior Structural Members. Where a horizontal separation of 20 feet (6096 mm) or more is provided, wood columns and arches conforming to heavy timber sizes shall be permitted to be used externally.

PART II- IBC STRUCTURAL

Add new text as follows:

2303.1.4 Structural glued cross laminated timber. Cross-laminated timbers shall be manufactured and identified as required in ANSI/APA PRG 320-2011.

Add new standard to Chapter 35 as follows:

ANSI or APA

ANSI/APA PRG 320-2011

Standard for Performance-Rated Cross-Laminated Timber

Add new definition as follows:

CROSS-LAMINATED TIMBER. A prefabricated engineered wood product consisting of at least three layers of solid-sawn lumber or *structural composite lumber* where the adjacent layers are cross-oriented and bonded with structural adhesive to form a solid wood element.

Reason: Cross-laminated timber (CLT) is a new technology developed in Europe. It is generally analogous to large section members currently associated with heavy timber in the current code. Its fire performance is most like that of glued-laminated beams, or glu-lams, in traditional Type IV (heavy timber) construction. Therefore it is proposed that the CLT be included in Type IV. To properly accomplish this, this proposal adds a definition of CLT, adds a consensus-developed product standard and then modifies the text of Type IV to accommodate CLT.

In Item #1, the existing language is maintained but FRTW, currently allowed in walls of Type IV, is pulled out into a subset of nontraditional material permitted to be used in Type IV. CLT is then added as the second subset. This makes it clear that this mode of construction performs like Heavy Timber but is constructed with different techniques. Walls are more like "tilt-up slabs" than HT beams but their fire performance is very similar to HT. Floors are more like slabs but again, their fire performance is similar to HT.

No changes are needed to the sections on columns, floor framing or roof framing because CLT is neither used as a "column" nor a "framing material". Cross-laminated timber is a large, thick panel composed of crosswise layers of dimension lumber bound with a structural adhesive.

In Section 602.4.4-Floors, the existing language is pulled down into a subparagraph and is unchanged. CLT floors are slightly different than HT so it is put into a second subparagraph with its own requirements. Among the differences is thickness (CLT=4 inches; HT=3 inches topped with a sheathing). Finally, the section is renumbered to accommodate the inserted subsections on general requirements.

In Section 602.4.5-Roofs, the existing language is pulled down, unchanged, into a subparagraph. CLT is again included as a subparagraph. Again the numbering is changed.

In Section 602.4.6-floors, CLT is added as an explicitly permitted form of floor decking. Traditional HT floor decks are 3" or 4" thick planks with various sheathings. Unlike the traditional plank decking, the CLT alternate has no joints to protect. Therefore no sheathing is required on top of the CLT. The structure of the section does not, however, prohibit the use of sheathing on top of a CLT floor deck.

In Section 602.4.7-roofs, CLT is added as an explicitly permitted form of roof decking.

In Section 602.4.8-walls, CLT is added as an acceptable wall system. For interior walls, it is already compliant as an element of solid wood construction meeting the traditional minimum dimensions. This section was modified to break out exterior walls separately so as to correlate with the base paragraph, 602.4 and its CLT subsection, 602.4.2. This eliminates any confusion which might arise between the two sections. By separating the interior and exterior walls, the new minimum wall thickness requirement associated with CLT may be interpreted to apply to all exterior wall construction, including traditional construction. However, it is observed that all common forms of exterior wall construction of Type IV would easily comply with this requirement.

The remaining items are necessary to include the product standard for CLT and a definition for the product. These items form the basis for the inclusion in Chapter 6 and give clarity to this new type of wood construction.

More information on the cross-laminated timber product can be found at our website, www.AWC.org.

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, ANSI/APA PRG 320-2011 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2012.

G142-12

PART I - IBC GENERAL

Public Hearing: Committee:
Assembly:

AS
ASF

AM
AMF

D
DF

PART II - IBC STRUCTURAL

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

602.4 #2-G-FRANCIS

G143 – 12

602.4.4

Proponent: Sam Francis, American Wood Council (sfrancis@awc.org)

Revise as follows:

602.4.4 Floors. Floors shall be without concealed spaces. Wood floors shall be of:

1. Sawn or glued-laminated planks, splined or tongue-and-groove, of not less than 3 inches (76 mm) nominal in thickness covered with 1-inch (25 mm) nominal dimension tongue-and-groove flooring, laid crosswise or diagonally, 15/32-inch (12 mm) wood structural panel, or 0.5-inch (12.7 mm) particleboard; or
2. Planks not less than 4 inches (102 mm) nominal in width set on edge close together and well spiked and covered with 1-inch (25 mm) nominal dimension flooring, ~~or~~ 15/32-inch (12 mm) wood structural panel, or 0.5-inch (12.7 mm) particleboard.

The lumber shall be laid so that no continuous line of joints will occur except at points of support. Floors shall not extend closer than 0.5 inch (12.7 mm) to walls. Such 0.5-inch (12.7 mm) space shall be covered by a molding fastened to the wall and so arranged that it will not obstruct the swelling or shrinkage movements of the floor. Corbelling of masonry walls under the floor shall be permitted to be used in place of molding.

Reason: This section is awkwardly worded with multiple requirements buried in a single paragraph. The revised formatting is user friendly and improves the structure of the provisions.

The technical change inserting 15/32-inch wood structural panel into the first option actually is how this requirement appeared in the 1996 BOCA National Building Code, the 1994 ICBO Uniform Building Code and the 1994 SBCCI Standard Building Code. Given that all three legacy codes had this provision, it seems likely that it was inadvertently omitted in the 2000 IBC.

This does nothing to change the long standing practice of Heavy Timber construction but it cleans up the text so that newer users can make sense of the options afforded herein.

Cost Impact: The code change proposal will not increase the cost of construction.

G143-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

602.4.4-G-FRANCIS

G144 – 12

602.4.4

Proponent: Edward I. Keith, APA - The Engineered Wood Association (ed.keith@apawood.org)

Delete and substitute as follows:

602.4.4 Floors. Wood floors shall be without concealed spaces, except that building service equipment may be enclosed, provided the enclosed space is fire blocked or protected by other acceptable means. The subfloor shall be either:

1. ~~Wood floors shall be of Sawn or glued-laminated planks, splined or tongue-and-groove, of not less than 3 inches (76 mm) nominal in thickness covered with 1-inch (25 mm) nominal dimension tongue-and-groove flooring, laid crosswise or diagonally, or 0.5-inch (12.7 mm) particleboard, or~~
2. ~~Sawn planks not less than 4 inches (102 mm) nominal in width set on edge close together and well spiked and covered with 1-inch (25 mm) nominal dimension flooring or 15/32-inch (12 mm) wood structural panel or 0.5-inch (12.7 mm) particleboard.~~

The subfloor ~~lumber~~ shall be laid so that no continuous line of joints will occur except at points of support. The subfloor shall be covered with 1-inch (25 mm) nominal dimension tongue-and-groove flooring laid crosswise or diagonally, 15/32-inch (12 mm) wood structural panel, or 1/2-inch (12.7 mm) particleboard. Floors shall not extend closer than 0.5 inch (12.7 mm) to walls.-Such 0.5-inch (12.7 mm) space shall be covered by a molding fastened to the wall and so arranged that it will not obstruct the swelling or shrinkage movements of the floor.-Corbeling of masonry walls under the floor shall be permitted to be used in place of molding.

Reason: The original section is very difficult to understand as it was written. Two separate assemblies were discussed together in the same paragraph with some descriptions applying to one and some to the other. The proposal does two things. The first is to identify the two systems separately and place the other descriptive elements common to both in a separate paragraph. The proposal also adds the language, "except that building service equipment may be enclosed, provided the enclosed space is fire blocked or protected by other acceptable means". This language was first added to the description of heavy timber construction in 2004 in AWC's Wood Construction Data: Heavy Timber Construction (WCD 5), available on AWC's website www.awc.org. This provides guidance for the handling of building service equipment that is inevitably there, but not covered currently in the code.

Cost Impact: The code change proposal will not increase the cost of construction.

G144-12

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

602.4.4-G-KEITH.doc

G145 – 12

603.1

Proponent: David Scott, Target (David.Scott@target.com)

Revise as follows:

603.1 Allowable materials. Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

1. through 25. *(no change)*

26. Wall construction of freezers and coolers of less than 1000 sq. ft. in size, lined on both sides with non combustible materials and the building is protected throughout with an automatic sprinkler system in accordance with Section 903.3.1.1

Reason: Item 6 allows for combustible materials such as doors, door frames, window sashes and frames. Item 11 allows partitions of wood panels or similar light construction up to 6 feet in height. In addition, freezer and cooler walls would need to meet finish requirements of section 803 and 2603.

Cost Impact: The code change proposal will not increase the cost of construction.

G145-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

603.1-G-SCOTT.doc

G146 – 12

1203.2

Proponent: Michael D. Fischer, Kellen Company, representing Asphalt Roofing Manufacturers Association

Revise as follows:

1203.2 Attic spaces. Enclosed *attics* and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof framing members shall have cross ventilation for each separate space by ventilation openings protected against the entrance of rain and snow. Blocking and bridging shall be arranged so as not to interfere with the movement of air. An airspace of not less than 1 inch (25 mm) shall be provided between the insulation and the roof sheathing. The net free ventilating area shall not be less than 1/150th of the area of the space ventilated.

Exceptions:

1. The net free cross-ventilation area shall be permitted to be reduced to 1/300 provided ~~that not less than 50 percent and not more than 80 percent of the required ventilating area provided by ventilators located in the upper portion of the space to be ventilated at least 3 feet (914 mm) above eave or cornice vents with the balance of the required ventilation provided by eave or cornice vents.~~ Both of the following conditions are met:
 - 1.1. In Climate Zones 6, 7 and 8, a Class I or II vapor retarder is installed on the warm-in-winter side of the ceiling.
 - 1.2. At least 40 percent and not more than 50 percent of the required venting area is provided by ventilators located in the upper portion of the attic or rafter space. Upper ventilators shall be located not more than 3 feet (914 mm) below the ridge or highest point of the space, measured vertically, with the balance of the ventilation provided by eave or cornice vents. Where the location of wall or roof framing members conflicts with the installation of upper ventilators, installation more than 3 feet (914 mm) below the ridge or highest point of the space shall be permitted.
2. ~~The net free cross-ventilation area shall be permitted to be reduced to 1/300 where a Class I or II vapor barrier is installed on the warm-in-winter side of the ceiling.~~
3. Attic Ventilation of attic spaces under low slope roof assemblies shall not be required when determined not necessary by the *building official* due to atmospheric or climatic conditions.

Reason: There have been numerous changes to the attic ventilation requirements of the IBC and IRC during the past few code cycles. This proposal is offered to provide consistency with the ventilation requirements between the IBC and IRC and provide clarity regarding the placement of attic ventilators. Additionally, the added exception for local conditions was submitted to manage low-slope design issues; this proposal limits the use of that exception to such roof assemblies.

Cost Impact: This proposal will not raise the cost of construction.

G146-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1203.2-G-LSTIBUREK.doc

G147 – 12

1203.2

Proponent: Joseph Lstiburek, Building Science Corporation, representing self

Revise as follows:

1203.2 Attic spaces. Enclosed *attics* and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof framing members shall have cross ventilation for each separate space by ventilation openings protected against the entrance of rain and snow. Blocking and bridging shall be arranged so as not to interfere with the movement of air. An airspace of not less than 1 inch (25 mm) shall be provided between the insulation and the roof sheathing. The net free ventilating area shall not be less than 1/150th of the area of the space ventilated.

Exceptions:

1. The net free cross-ventilation area shall be permitted to be reduced to 1/300 provided ~~that not less than 50 percent and not more than 80 percent of the required ventilating area provided by ventilators located in the upper portion of the space to be ventilated at least 3 feet (914 mm) above eave or cornice vents with the balance of the required ventilation provided by eave or cornice vents.~~ Both of the following conditions are met:
 - 1.1. In Climate Zones 6, 7 and 8, a Class I or II vapor retarder is installed on the warm-in-winter side of the ceiling.
 - 1.2. At least 40 percent and not more than 50 percent of the required venting area is provided by ventilators located in the upper portion of the attic or rafter space. Upper ventilators shall be located not more than 3 feet (914 mm) below the ridge or highest point of the space, measured vertically, with the balance of the ventilation provided by eave or cornice vents. Where the location of wall or roof framing members conflicts with the installation of upper ventilators, installation more than 3 feet (914 mm) below the ridge or highest point of the space shall be permitted.
2. ~~The net free cross-ventilation area shall be permitted to be reduced to 1/300 where a Class I or II vapor barrier is installed on the warm-in-winter side of the ceiling.~~
3. Attic ventilation shall not be required when determined not necessary by the building official due to atmospheric or climatic conditions.

Reason: This proposed language aligns the IBC with IRC R806.2. The current IBC vapor retarder language is incorrect as it violates the applicable physics in hot climates and needs to be changed. Finally, the current language regarding a 50 percent and 80 percent split between upper and lower vents violates the applicable physics and can lead to attic ventilation make up air being drawn from the building rather than from the eave or cornice vents.

Cost Impact: This proposal will not raise the cost of construction.

G147-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1203.2-G-LSTIBUREK.doc

G148 – 12

1203.2.1

Proponent: Steven R. Winkel, The Preview Group, Inc., representing The American Institute of Architects (swinkel@preview-group.com)

Revise as follows:

1203.2 Attic Spaces. Attic spaces shall comply with this section.

1203.2.1 Openings into attic. Exterior openings into the *attic* space of any building intended for human occupancy shall be protected to prevent the entry of birds, squirrels, rodents, snakes and other similar creatures. Openings for ventilation having a least dimension of not less than 1/16 inch (1.6 mm) and not more than 1/4 inch (6.4 mm) shall be permitted. Openings for ventilation having a least dimension larger than 1/4 inch (6.4 mm) shall be provided with corrosion-resistant wire cloth screening, hardware cloth, perforated vinyl or similar material with openings having a least dimension of not less than 1/16 inch (1.6 mm) and not more than 1/4 inch (6.4 mm). Where combustion air is obtained from an *attic* area, it shall be in accordance with Chapter 7 of the *International Mechanical Code*.

1203.2 1203.2.2 Vented attic spaces. Enclosed *attics* and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof framing members shall have cross ventilation for each separate space by ventilation openings protected against the entrance of rain and snow. Blocking and bridging shall be arranged so as not to interfere with the movement of air. An airspace of not less than 1 inch (25 mm) shall be provided between the insulation and the roof sheathing. The net free ventilating area shall not be less than 1/150th of the area of the space ventilated.

Exceptions:

1. The net free cross-ventilation area shall be permitted to be reduced to 1/300 provided that not less than 50 percent and not more than 80 percent of the required ventilating area provided by ventilators located in the upper portion of the space to be ventilated at least 3 feet (914 mm) above eave or cornice vents with the balance of the required *ventilation* provided by eave or cornice vents.
2. The net free cross-ventilation area shall be permitted to be reduced to 1/300 where a Class I or II vapor barrier is installed on the warm-in-winter side of the ceiling.
3. *Attic* ventilation shall not be required when determined not necessary by the *building*

1203.2.3 Unvented attic and unvented enclosed rafter assemblies. Unvented *attic* assemblies where spaces between the ceiling joists of the top *story* and the roof rafters, and unvented enclosed rafter assemblies where spaces between ceilings that are applied directly to the underside of roof framing members/rafters and the structural roof sheathing at the top of the roof framing members/rafters, shall be permitted where all the following conditions are met:

1. The unvented *attic* space is completely contained within the *building thermal envelope*.
2. No interior Class I vapor retarders are installed on the ceiling side (*attic* floor) of the unvented *attic* assembly or on the ceiling side of the unvented enclosed rafter assembly.
3. Where wood shingles or shakes are used, a minimum 1/4- inch (6 mm) vented air space separates the shingles or shakes and the roofing underlayment above the structural sheathing.
4. In Climate Zones 5, 6, 7 and 8, any *air-impermeable insulation* shall be a Class II vapor retarder, or shall have a Class III vapor retarder coating or covering in direct contact with the underside of the insulation.
5. Either Items 5.1, 5.2 or 5.3 shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing.
 - 5.1. *Air-impermeable insulation* only. Insulation shall be applied in direct contact with the underside of the structural roof sheathing.

- 5.2. Air-permeable insulation only. In addition to the air-permeable insulation installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing as specified in Table 1203.2.1 for condensation control.
- 5.3. Air-impermeable and air-permeable insulation. The *air-impermeable insulation* shall be applied in direct contact with the underside of the structural roof sheathing as specified in Table 1203.2.1 for condensation control. The air-permeable insulation shall be installed directly under the *air-impermeable insulation*.
- 5.4. Where preformed insulation board is used as the air-impermeable insulation layer, it shall be sealed at the perimeter of each individual sheet interior surface to form a continuous layer.

**TABLE 1203.2.3
INSULATION FOR CONDENSATION CONTROL**

<u>CLIMATE ZONE^a</u>	<u>MINIMUM RIGID BOARD ON AIR-IMPERMEABLE INSULATION R-VALUE</u>
<u>2A and 3B tile roof only</u>	<u>0 (none required)</u>
<u>1, 2A, 2B, 3A, 3B, 3C</u>	<u>R-5</u>
<u>4C</u>	<u>R-10</u>
<u>4A, 4B</u>	<u>R-15</u>
<u>5</u>	<u>R-20</u>
<u>6</u>	<u>R-25</u>
<u>7</u>	<u>R-30</u>
<u>8</u>	<u>R-35</u>

a. Climate zones per the *International Energy Conservation Code*

Reason: There is often confusion in dealing with ventilation of flat roofs that cannot readily meet the ventilation contained in the current attic ventilation provisions of 1203.2. This code change inserts language from the 2012 IRC regarding unvented attics into the IBC. The types of buildings where these requirements are applied under the IBC are very similar to residential light frame construction so this is not a stretch to apply IRC provisions in the IBC. The new provisions are taken directly from the IRC. They allow for unvented attic and rafter details to be used when a specific set of vapor retarder and insulation conditions are met. There are no technical revisions to the existing language in 1203.2.2 other than re-titling it as "Vented Attic Spaces and renumbering it.

The relocation of the attic opening protection provisions from 1203.2.1 to the front of the section is done to further harmonize the IBC provisions with those in the IRC. There are no changes in the text of 1203.2.1, it is merely relocated.

Cost Impact: The code change proposal will slightly increase the cost of construction where insulation is added for unvented attic construction.

G148-12

Public Hearing: Committee: AS AM D
 Assembly: ASF AMF DF

1203.2.1-G-WINKEL.doc

G149 – 12

202, 1203.2, 1203.3 (NEW), Table 1203.2 (NEW)

Proponent: Joseph Lstiburek, Building Science Corporation, representing self
(joe@buildingsscience.com)

Revise as follows:

1203.2 Attic spaces. Ventilation required. (No change to body of text)

1203.3 Unvented attic and unvented enclosed rafter assemblies. Unvented attic assemblies (spaces between the ceiling joists of the top story and the roof rafters) and unvented enclosed rafter assemblies (spaces between ceilings that are applied directly to the underside of roof framing members/rafters and the structural roof sheathing at the top of the roof framing members/rafters) shall be permitted where all the following conditions are met:

1. The unvented attic space is completely within the building thermal envelope.
2. No interior Class I vapor retarders are installed on the ceiling side (attic floor) of the unvented attic assembly or on the ceiling side of the unvented enclosed rafter assembly.
3. Where wood shingles or shakes are used, a minimum 1/4 inch (6 mm) vented air space separates the shingles or shakes and the roofing underlayment above the structural sheathing.
4. In climate zones 5, 6, 7 and 8, any air-impermeable insulation shall be a Class II vapor retarder, or shall have a Class III vapor retarder coating or covering in direct contact with the underside of the insulation.
5. Either items 5.1 5.2 or 5.3 shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing.
 - 5.1. Air-impermeable insulation only. Insulation shall be applied in direct contact with the underside of the structural roof sheathing.
 - 5.2. Air-permeable insulation only. In addition to the air-permeable insulation installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing as specified in Table 1203.3 for condensation control.
 - 5.3. Air-impermeable and air-permeable insulation. The air-impermeable insulation shall be applied in direct contact with the underside of the structural roof sheathing as specified in Table 1203.3 for condensation control. The air-permeable insulation shall be installed directly under the air-impermeable insulation.
 - 5.4. Where preformed insulation board is used as the air-impermeable insulation layer, it shall be sealed at the perimeter of each individual sheet interior surface to form a continuous layer.
6. This section does not apply to special use structures or enclosures such as swimming pool enclosures, data processing centers, hospitals, art galleries, or enclosures in climate zones 5 or higher that are humidified beyond 35 percent during the three coldest months.

**TABLE 1203.3
INSULATION FOR CONDENSATION CONTROL**

CLIMATE ZONE	MINIMUM RIGID BOARD ON AIR-IMPERMEABLE INSULATION R-VALUE^{a,b}
2B and 3B tile roof only	0 (none required)
1, 2A, 2B, 3A, 3B, 3C	R-5
4C	R-10
4A, 4B	R-15
5	R-20
6	R-25
7	R-30
8	R-35

a. Contributes to, but does not supersede thermal resistance requirements for attic and roof assemblies in Section C402.2.1 of

the International Energy Conservation Code.

b. Alternatively, sufficient rigid board or sheet insulation shall be installed directly above the structural roof sheathing to maintain the monthly average temperature of the underside of the structural roof sheathing above 45 degrees F (7 degrees C). For calculation purposes, an interior air temperature of 68 degrees F (20 degrees C) is assumed and the exterior air temperature is assumed to be the monthly average outside air temperature of the three coldest months.

Add new definition as follows:

AIR-IMPERMEABLE INSULATION. An insulation having an air permeance equal to or less than 0.02 l/s-m² at 75 pa pressure differential tested according to ASTM E 2178 or E 283.

Reason: Unvented roof assemblies - both attic and cathedral ceiling - are a proven technology. They give the designer significant flexibility in locating mechanical equipment and ductwork inside of conditioned spaces thereby saving energy. They significantly improve the airtightness of the building enclosure thereby saving energy. They reduce wind uplift forces and reduce the risk of wildfire damage. They eliminate the problems associated with wind driven rain entering roof vents during hurricanes. The language in this proposed section is modeled on the existing language in the IRC Section 806.5. The "air-impermeable insulation" definition is the same as in the IRC.

Cost Impact: This proposal will not raise the cost of construction.

G149-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1203.3 (NEW)-G-LSTIBUREK.doc

G150 – 12

1203.4, Chapter 35

Proponent: Stephanie Reiniche, ASHRAE (sreiniche@ashrae.org)

Revise as follows:

1203.4 Natural ventilation. Natural *ventilation* of an occupied space shall be through windows, doors, louvers or other openings to the outdoors. The operating mechanism for such openings shall be provided with ready access so that the openings are readily controllable by the building occupants. provided in accordance with Section 6.4 of ASHRAE Standard 62.1 or Section 4.1 of ASHRAE Standard 62.2, based on the occupancy of the space.

1203.4.1 Ventilation area required. The openable area of the openings to the outdoors shall be not less than 4 percent of the floor area being ventilated.

1203.4.1.1 Adjoining spaces. Where rooms and spaces without openings to the outdoors are ventilated through an adjoining room, the opening to the adjoining room shall be unobstructed and shall have an area of not less than 8 percent of the floor area of the interior room or space, but not less than 25 square feet (2.3 m²). The openable area of the openings to the outdoors shall be based on the total floor area being ventilated.

Exception: Exterior openings required for *ventilation* shall be permitted to open into a sunroom with *thermal isolation* or a patio cover provided that the openable area between the sunroom addition or patio cover and the interior room shall have an area of not less than 8 percent of the floor area of the interior room or space, but not less than 20 square feet (1.86 m²). The openable area of the openings to the outdoors shall be based on the total floor area being ventilated.

1203.4.1.2 1202.4.1 Openings below grade. (no change)

Add new standards to Chapter 35 as follows:

ASHRAE

American Society of Heating Refrigerating and Air-Conditioning Engineers
1791 Tullie Circle, Atlanta, GA 30319
(404) 636-8400

ASHRAE

62.1-2010 Ventilation for Acceptable Indoor Air Quality

62.2-2010 Ventilation for Acceptable Indoor Air Quality in Low-Rise Residential Buildings

Reason: The natural ventilation requirements currently in the IBC are based on ANSI/ASHRAE Standard 62-1989. Standard 62 has gone through many revisions since that time, and based on new information and research, the requirements today are quite different. The IMC requires mechanical ventilation that is consistent with the methodology in ASHRAE Standards 62.1-2007 and 62.2-2007. By referencing Standard 62.1 and 62.2, we will ensure that the natural ventilation requirements in the IBC are consistent with those required by both Standards 62.1 and 62.2, which are the ANSI standards for ventilation in buildings

As an alternative to this approach the provisions of the IBC can be updated to be consistent with ASHRAE 62.1 and 62.2 as follows:

Revise as follows:

1203.1 General. Buildings shall be provided with natural ventilation in accordance with Section 1203.4, or mechanical ventilation in accordance with the *International Mechanical Code*.

Where the air infiltration rate in a *dwelling unit* is less than 5 air changes per hour when tested with a blower door at a pressure 0.2 inch w.c. (50 Pa) in accordance with Section 402.4.1.2 of the *International Energy Conservation Code*, the *dwelling unit* shall be ventilated by mechanical means in accordance with Section 403 of the *International Mechanical Code*.

1203.4 Natural ventilation. Natural *ventilation* of an occupied space shall be through windows, doors, louvers or other openings to the outdoors. The operating mechanism for such openings shall be provided with ready access so that the openings are readily controllable by the building occupants. Natural ventilation systems shall be designed and constructed in accordance with this section and shall include mechanical ventilation systems designed in accordance with the *International Mechanical Code*.

Exceptions:

1. An engineered natural *ventilation* system, when approved by the authority having jurisdiction
2. Mechanical *ventilation* systems are not required when:
 - 2.1. Natural ventilation openings are permanently open or have controls that prevent the openings from being closed during periods of expected occupancy, or
 - 2.2. The zone is not served by heating or cooling equipment.

1203.4.1 Ventilation area required. The openable area of the openings to the outdoors shall be not less than 4 percent of the floor area being ventilated. Spaces, or portions of spaces, to be naturally ventilated shall be located within a distance based on the ceiling height, as determined by Sections 1203.4.1.1, 1203.4.1.2, or 1203.4.1.3, from operable wall openings. For spaces with ceilings which are not parallel to the floor, the ceiling height shall be determined in accordance with Section 1203.4.1.4.

1203.4.1.1 Single Side Opening. For spaces with operable openings on one side of the space, the maximum distance from the operable openings shall be $2H$, where H is the ceiling height.

1203.4.1.2 Double Side Opening. For spaces with operable openings on two opposite sides of the space, the maximum distance from the operable openings shall be $5H$, where H is the ceiling height.

1203.4.1.3 Corner Openings. For spaces with operable openings on two adjacent sides of a space the maximum distance from the operable openings shall be $5H$ along a line drawn between the two openings which are farthest apart. The floor area outside that line is considered to be not naturally ventilated and shall comply with Section 1203.4.1.

1203.4.1.4 Ceiling Height. The ceiling height, H , to be used in Sections 1203.4.1 through 1203.4.3 shall be the minimum ceiling height in the space.

Exception: For ceilings that are increasing in height as distance from the openings is increased, the ceiling height shall be determined as the average height of the ceiling within 6 m (20 ft.) from the operable openings.

1203.4.2 Location and Size of Openings. Spaces, or portions of spaces, to be naturally ventilated shall be permanently open to operable wall openings directly to the outdoors, the openable area of which is a minimum of 4% of the net occupiable floor area. Where openings are covered with louvers or otherwise obstructed, openable area shall be based on the net free unobstructed area through the opening.

1203.4.1.4 1203.4.2.1 Adjoining spaces. Where rooms and spaces without openings to the outdoors are ventilated through an adjoining room, the opening to the adjoining room shall be unobstructed and shall have an area of not less than 8 percent of the floor area of the interior room or space, but not less than 25 square feet (2.3 m²). The openable area of the openings to the outdoors shall be based on the total floor area being ventilated.

Exception: Exterior openings required for *ventilation* shall be permitted to open into a sunroom with *thermal isolation* or a patio cover provided that the openable area between the sunroom addition or patio cover and the interior room shall have an area of not less than 8 percent of the floor area of the interior room or space, but not less than 20 square feet (1.86 m²). The openable area of the openings to the outdoors shall be based on the total floor area being ventilated.

1203.4.1.2 1203.4.2.2 Openings below grade. *(no change to text)*

1203.4.3 Control and Access. Building occupants shall have ready access to the means to open required operable openings. Controls shall be designed to properly coordinate operation of the natural and mechanical ventilation systems.

Cost Impact: This will not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, ASHRAE 62.2-2010 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2012. Note that ASHRAE 62.1 is currently referenced by the IMC.

G150-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1203.4 #1-G-FERGUSON.doc

G151 – 12

1203.4, 1203.4.1

Proponent: Steve Ferguson, ASHRAE (sferguson@ashrae.org)

Revise as follows:

1203.1 General. Buildings shall be provided with natural ventilation in accordance with Section 1203.4, or mechanical ventilation in accordance with the *International Mechanical Code*.

Where the air infiltration rate in a *dwelling unit* is less than 5 air changes per hour when tested with a blower door at a pressure 0.2 inch w.c. (50 Pa) in accordance with Section 402.4.1.2 of the *International Energy Conservation Code*, the *dwelling unit* shall be ventilated by mechanical means in accordance with Section 403 of the *International Mechanical Code*.

1203.4 Natural ventilation. ~~Natural ventilation of an occupied space shall be through windows, doors, louvers or other openings to the outdoors. The operating mechanism for such openings shall be provided with ready access so that the openings are readily controllable by the building occupants. Natural ventilation systems shall be designed and constructed in accordance with this section and shall include mechanical ventilation systems designed in accordance with the *International Mechanical Code*.~~

Exceptions:

1. An engineered natural ventilation system, when approved by the authority having jurisdiction
2. Mechanical ventilation systems are not required where:
 - 2.1. Natural ventilation openings are permanently open or have controls that prevent the openings from being closed during periods of expected occupancy, or
 - 2.2. The zone is not served by heating or cooling equipment.

1203.4.1 Ventilation area required. ~~The openable area of the openings to the outdoors shall be not less than 4 percent of the floor area being ventilated. Spaces, or portions of spaces, to be naturally ventilated shall be located within a distance based on the ceiling height, as determined by Sections 1203.4.1.1, 1203.4.1.2, or 1203.4.1.3, from operable wall openings. For spaces with ceilings which are not parallel to the floor, the ceiling height shall be determined in accordance with Section 1203.4.1.4.~~

1203.4.1.1 Single Side Opening. For spaces with operable openings on one side of the space, the maximum distance from the operable openings shall be $2H$, where H is the ceiling height.

1203.4.1.2 Double Side Opening. For spaces with operable openings on two opposite sides of the space, the maximum distance from the operable openings shall be $5H$, where H is the ceiling height.

1203.4.1.3 Corner Openings. For spaces with operable openings on two adjacent sides of a space, the maximum distance from the operable openings shall be $5H$ along a line drawn between the two openings which are farthest apart. The floor area outside that line is considered to be not naturally ventilated and shall comply with Section 1203.4.1.

1203.4.1.4 Ceiling Height. The ceiling height, H , to be used in Sections 1203.4.1 through 1203.4.3 shall be the minimum ceiling height in the space.

Exception: For ceilings that are increasing in height as distance from the openings is increased, the ceiling height shall be determined as the average height of the ceiling within 6 m (20 ft.) from the operable openings.

1203.4.2 Location and Size of Openings. Spaces, or portions of spaces, to be naturally ventilated shall be permanently open to operable wall openings directly to the outdoors, the openable area of which is a

minimum of 4% of the net occupiable floor area. Where openings are covered with louvers or otherwise obstructed, openable area shall be based on the net free unobstructed area through the opening.

1203.4.1.1 1203.4.2.1 Adjoining spaces. Where rooms and spaces without openings to the outdoors are ventilated through an adjoining room, the opening to the adjoining room shall be unobstructed and shall have an area of not less than 8 percent of the floor area of the interior room or space, but not less than 25 square feet (2.3 m²). The openable area of the openings to the outdoors shall be based on the total floor area being ventilated.

Exception: Exterior openings required for *ventilation* shall be permitted to open into a sunroom with *thermal isolation* or a patio cover provided that the openable area between the sunroom addition or patio cover and the interior room shall have an area of not less than 8 percent of the floor area of the interior room or space, but not less than 20 square feet (1.86 m²). The openable area of the openings to the outdoors shall be based on the total floor area being ventilated.

1203.4.1.2 1203.4.2.2 Openings below grade. *(no change to text)*

1203.4.3 Control and Access. Building occupants shall have ready access to the means to open required operable openings. Controls shall be designed to properly coordinate operation of the natural and mechanical ventilation systems.

Reason: The natural ventilation requirements currently in the IBC are based on ANSI/ASHRAE Standard 62-1989. Standard 62 has gone through many revisions since that time, and based on new information and research, the requirements today are quite different. The IMC requires mechanical ventilation that is consistent with the methodology in ASHRAE Standard 62.1. This proposal will make the requirements for natural ventilation consistent with ASHRAE Standard 62.1-2010

Cost Impact: This will not increase the cost of construction.

G151-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1203.4 #2-G-FERGUSON.doc

G152 – 12

1204.1

Proponent: David S. Collins, The Preview Group, Inc. (dcollins@preview-group.com)

Delete and substitute as follows:

~~**1204.1 Equipment and systems.** Interior spaces intended for human occupancy shall be provided with active or passive space heating systems capable of maintaining an indoor temperature of not less than 68°F (20°C) at a point 3 feet (914 mm) above the floor on the design heating day.~~

~~**Exception:** Space heating systems are not required for interior spaces where the primary purpose of the space is not associated with human comfort.~~

1204.1 Equipment and systems. Fully enclosed interior spaces of Group A, B, E, I and R occupancies intended for human occupancy shall be provided with active or passive space-heating systems capable of maintaining a minimum indoor temperature of 68 degree F (20 degrees C) at a point 3 feet (914 mm) above the floor on the design heating day.

Reason: Section 1204.1 provides arbitrary requirements for heat in all buildings and structures whether fully enclosed or fully open such as a pavilion. The existing exception is arbitrary as well in stating that where the primary purpose of the building is not for human comfort that heat is not required.

Nowhere in the code is human comfort defined. Research of the legacy codes reveals that this provision may have come from only one of the legacy codes that required heat for Group R occupancies only. It can be argued that the only occupancies that are intended for human comfort are Group R occupancies and that human comfort is secondary. If the code is really trying to regulate human comfort, then it can also be argued that air conditioning should be provided. People work in many different environments including inside and outside of structures. In all of these environments people must dress accordingly to provide warmth or minimal clothing so that the clothing does not capture body heat.

This code change eliminates the exception for human comfort and lists those occupancies where it can be reasonably assumed that providing heat should be a secondary purpose of the building. Group F, H, S and U occupancies are left to the discretion of the building owner as to the need for heat or for that matter cooling.

Cost Impact: The increased understanding of what the code intends regarding provisions for heating will significantly reduce the cost of design and review.

G152-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1204.1-G-COLLINS.doc

G153 – 12

1204.1

Proponent: Paul Armstrong, City of El Monte, representing Orange Empire Code Committee
(paul@jaspacific.com)

Revise as follows:

1204.1 Equipment and systems. Interior spaces intended for human occupancy shall be provided with active or passive space-heating systems capable of maintaining an indoor temperature of not less than 68°F (20°C) at a point 3 feet (914 mm) above the floor on the design heating day.

Exceptions:

1. Space heating systems are not required for interior spaces where the primary purpose of the space is not associated with human comfort.
2. Group F, H, S or U occupancies.

Reason: The addition of the exception will exempt Groups F, H, S or U occupancies from the heating requirement in the IBC. The current text is vague and as a result, unenforceable. There are many opinions as to what is or is not associated with human comfort. However, the requirement for heating in these uses is governed by OSHA regulations (Groups F, H and S) or is not needed (Group U) or, in some cases, not desired (Group H). As an example, industrial bakeries have been told that a heating system is needed in rooms that contain ovens. Warm air supply ducts were then installed to comply with this interpretation. The IBC should allow the exemption of heating in these uses.

Since it was felt that some other uses may take advantage of exception 1, it is not proposed for deletion.

Cost Impact: The code change proposal will not increase the cost of construction.

G153-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1204.1-G-ARMSTRONG.doc

G154 – 12

1205.3

Proponent: Jack Bailey, One Lux Studio, representing International Association of Lighting Designers (jbailey@oneluxstudio.com)

Revise as follows:

1205.3 Artificial light. Artificial light shall be provided that is adequate to provide an average illumination of ~~10 footcandles (107 lux)~~ not less than 3 footcandles (32 lux) over the area of the room at a height of 30 inches (762 mm) above the floor level.

Reason: To conserve energy. 10 footcandles is excessive for many space types, and providing excessive lighting wastes energy. The IES Handbook, 10th Edition, recommends that an average of 3 footcandles of illumination be provided in the following space types:

- o Residential Circulation
- o Restaurant Dining Areas, fine dining

The IES Handbook, 10th Edition, recommends that an average of 5 footcandles of illumination be provided in the following space types:

- o Independent Passageways, public and back-of-house corridors (not adjacent to brighter spaces)
- o Service stairways, corridors
- o Elevators, Escalators
- o Lounges
- o Residential general lighting
- o Restrooms
- o Storage, inactive
- o Food Storage (refrigerated and non-refrigerated)
- o Locker Rooms

The IBC should not require that excessive lighting be provided in these types of spaces.

Cost Impact: The code change proposal will not increase the cost of construction.

G154-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1205.3-G-BAILEY.doc

G155 – 12

1205.3, Chapter 35

Proponent: Bob Eugene, Underwriters Laboratories (Robert.Eugene@ul.com)

Revise as follows:

1205.3 Artificial light. Artificial light shall be provided that is adequate to provide an average illumination of 10 footcandles (107 lux) over the area of the room at a height of 30 inches (762 mm) above the floor level. Electrical luminaires permanently installed in non-hazardous locations shall be listed and labeled in accordance with UL 1598 and installed in accordance with the listing and the manufacturer's instructions.

Add new standard to Chapter 35 as follows:

UL

1598-2008 Luminaires, with revisions through January 11, 2010

Reason: UL 1598 is an ANSI approved standard for luminaires. Although NFPA 70 Section 410.6 requires listing, it does not specify the applicable standard within the mandatory provisions of the code.

Cost Impact: The proposed changes will not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, UL 1598-2008 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2012.

G155-12

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

C:\CYCLE 2012-2013\GROUP A\PROPOSED CODE CHANGES FOR PUBLICATION\IBC - GENERAL\1205.3-G-EUGENE.doc

G156 – 12

1207, 1207.1, 1207.2 (NEW), 1207.2.1 (NEW), 1207.2.2 (NEW), Table 1207.2.2 (NEW)

Proponent: Amy Costello, Armstrong World Industries, Inc. (aacostello@armstrong.com)

Revise as follows:

SECTION 1207 SOUND TRANSMISSION AND QUALITY

1207.1 ~~Scope~~. Sound Transmission. This section shall apply to common interior walls, partitions and floor/ceiling assemblies between adjacent dwelling units or between dwelling units and adjacent public area such as halls, corridors, stairs or service areas.

1207.2 1207.1.1 Air-borne sound. Walls, partitions and flooring /ceiling assemblies separating dwellings units from public or service areas shall have a sound transmission class (STC) of not less than 50 (45 if field tested) for air-borne noise when tested in accordance with ASTM E 90. Penetrations or opens in construction assemblies for piping; electrical devices; recessed cabinets; bathtubs; soffits; or heating, ventilating or exhaust ducts shall be sealed, lined, insulated or otherwise treated to maintain the required ratings. This requirement shall not apply to dwelling unit entrance doors; however, such doors shall be tight fitting to the frame and sill.

1207.2.1 1207.1.1.1 Masonry. The sound transmission class of concrete masonry and clay masonry assemblies shall be calculated in accordance with TMS 0302 or determined through testing in accordance with ASTM 90.

1207.3 1207.1.2 Structure-borne sound. Floor/ceiling assemblies between dwelling units and a public service area within the structure shall have an impact insulation class (IIC) rating of not less than 50 (45 if field tested) when tested in accordance with ASTM E 492.

1207.2 Sound quality. Sound quality shall be provided for Group E occupancy classrooms in accordance with Sections 1207.2.1 and 1207.2.2.

1207.2.1 Background noise. The noise from heating, ventilating and air conditioning (HVAC) systems occurring in classrooms within Group E occupancies shall be not exceed 45 dBA. Compliance shall be demonstrated by one of the following:

1. Calculations submitted with the construction documents; or
2. Field testing of the completed building prior to issuance of a certificate of occupancy. Field testing shall be conducted by an approved registered design professional and a report of the testing shall be provided to the building official.

1207.2.2 Interior sound reverberation. The reverberation time of the interior space within classrooms shall comply with Table 1207.2.2. Compliance shall be demonstrated by one of the following:

1. Calculations provided with the submitted construction documents; or
2. Field testing of the completed building prior to issuance of a certificate of occupancy. Field testing shall be conducted by an approved registered design professional and a report of the testing shall be provided to the building official.

**TABLE 1207.2.2
REVERBERATION TIME REQUIREMENTS FOR OCCUPANCY CLASSIFICATION**

<u>Occupancy Classification</u>	<u>Room Types / Applications</u>	<u>T₆₀ (sec)</u>
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<u>Occupancy Classification</u>	<u>Room Types / Applications</u>	<u>T₆₀ (sec)</u>
Group E	Normal Classrooms (< 283 m ³ (10,000ft ³))	< 0.6
	Large Classrooms (between 283m ³ and 566 m ³ (20,000ft ³))	< 0.7

Reason: The mission of the IBC is to provide the highest quality codes, standards, products and services for all concerned with the safety and performance of the built environment. Schools are places of learning where speaking and listening are the primary communication modes. Until recently neither school planners nor were the general public aware of the significant negative effect of noise and excessive reverberation on the learning process. The large body of research describing this problem is making everyone more aware of the importance of good acoustics. Convincing evidence existing which shows that children do not fully understand speech in reverberant rooms. Classroom noise results in significant teaching/ learning problems, including teacher vocal fatigue and students' off-task behavior. In one survey (Smith et al., 1998), 32% of teachers reported having occasional voice fatigue, and 20% reported they had missed work due to voice problems. These consequences, along with the learning deficits experienced by students in noisy rooms, are the costs of the current situation. Teachers should have classrooms where they can use a natural teaching voice free from vocal stress. The additional of this performance requirement will provide a better learning environment for students and healthier environmental for teachers and the voices. This requirement is also consistent with the American National Standard Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools (.ANSI S12.60-2010).

A prescriptive alternative approach to what has been proposed is as follows:

1207.2 Sound quality. Sound quality shall be provided for in Group E occupancy classrooms in accordance with one of the following:

1. All ceiling area material finishes excluding the area of lights, diffusers and grilles shall have a noise reduction coefficient (NRC) of not less than 0.70.
2. The total area of exposed sound-absorbing finishes on the floors, ceiling and/or walls shall equal or exceed the total ceiling area and shall have a noise reduction coefficient (NRC) of not less than 0.70.

Noise reduction coefficient shall be verified through data furnished by the manufacturer.

It was unclear whether this should be addressed within existing text or if there may be a preference for an entirely new section within Chapter 12 dedicated only to sound quality.

Cost Impact: Neither the background noise nor the reverberation time calculations are cost prohibitive.

G156-12

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

1207-G-COSTELLO

G157 – 12

1207.1, 1207.2, 1207.3

Proponent: Jerry R. Tepe, FAIA, JRT•AIA Architect, representing The American Institute of Architects (jrtaia@aol.com)

Revise as follows:

1207.1 Scope. This section shall apply to common interior walls, partitions and floor/ceiling assemblies between adjacent *dwelling units and sleeping units* or between *dwelling units and sleeping units* and adjacent public areas such as halls, *corridors, stairs* or service areas.

1207.2 Air-borne sound. Walls, partitions and floor/ceiling assemblies separating *dwelling units and sleeping units* from each other or from public or service areas shall have a sound transmission class (STC) of not less than 50 (45 if field tested) for air-borne noise when tested in accordance with ASTM E 90. Penetrations or openings in construction assemblies for piping; electrical devices; recessed cabinets; bathtubs; soffits; or heating, ventilating or exhaust ducts shall be sealed, lined, insulated or otherwise treated to maintain the required ratings. This requirement shall not apply to *dwelling unit* entrance doors; however, such doors shall be tight fitting to the frame and sill.

1207.2.1 Masonry. The sound transmission class of concrete masonry and clay masonry assemblies shall be calculated in accordance with TMS 0302 or determined through testing in accordance with ASTM E 90.

1207.3 Structure-borne sound. Floor/ceiling assemblies between *dwelling units and sleeping units* or between a *dwelling unit or sleeping unit* and a public or service area within the structure shall have an impact insulation class (IIC) rating of not less than 50 (45 if field tested) when tested in accordance with ASTM E 492.

Reason: The code currently regulates sound transmission between dwelling units (apartments) but not for sleeping units (hotel/motel rooms, dormitories). It seems obvious that sleeping units should be similarly protected. While many higher-end establishments already provide a degree of sound control, many of us have experienced the disturbing noise of a loud TV while trying to sleep in a hotel room.

This will increase the cost of construction by possibly requiring the addition of insulation in the separating construction. However, other provisions of the code require this construction to have a fire-resistance rating, many of which assemblies already have insulation included.

Cost Impact: This code change proposal will increase cost of construction.

G157-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1207.1-G-TEPE

G158 – 12

1208.2

Proponent: Dennis Richardson, P.E., CBO, City of Salinas, Tri-Chapter (Peninsula, East Bay and Monterey Chapters, ICC) (dennisrichardsonpe@yahoo.com)

Revise as follows:

1208.2 Minimum ceiling heights. Occupiable spaces, *habitable spaces* and *corridors* shall have a ceiling height of not less than 7 feet 6 inches (2286 mm). Bathrooms, toilet rooms, kitchens, storage rooms and laundry rooms shall be permitted to have a ceiling height of not less than 7 feet (2134 mm).

Exceptions:

1. In one- and two-family *dwelling*s, beams or girders spaced not less than 4 feet (1219 mm) on center shall be permitted to project not more than 6 inches (152 mm) below the required ceiling height.
2. If any room in a building has a sloped ceiling, the prescribed ceiling height for the room is required in one-half the area thereof. Any portion of the room measuring less than 5 feet (1524 mm) from the finished floor to the ceiling shall not be included in any computation of the minimum area thereof.
3. The height of *mezzanines* and spaces below *mezzanines* shall be in accordance with Section 505.1.
4. Corridors contained within a dwelling or sleeping unit in a Group R occupancy shall have a ceiling height of not less than 7 feet (2134 mm).

Reason: To provide consistency with IRC Section R305.1. It appears the allowance for 7' ceiling height inside dwelling units was omitted from the IBC.

Cost Impact: The code change will not increase the cost of construction.

G158-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1208.2 #1-G-RICHARDSON.doc

G159 – 12

1208.2

Proponent: Joseph DeSante, City of Salinas, representing Tri-Chapter (Peninsula, East Bay, and Monterey Chapters ICC) (joesphd@ci.salinas.ca.us)

Revise as follows:

1208.2 Minimum ceiling heights. Occupiable spaces, *habitable spaces* and *corridors* shall have a ceiling height of not less than 7 feet 6 inches (2286 mm). Bathrooms, toilet rooms, kitchens, storage rooms and laundry rooms shall be permitted to have a ceiling height of not less than 7 feet (2134 mm).

Exceptions:

1. In one- and two-family *dwelling*s, beams or girders spaced not less than 4 feet (1219 mm) on center shall be permitted to project not more than 6 inches (152 mm) below the required ceiling height.
2. If any room in a building has a sloped ceiling, the prescribed ceiling height for the room is required in one-half the area thereof. Any portion of the room measuring less than 5 feet (1524 mm) from the finished floor to the ceiling shall not be included in any computation of the minimum area thereof.
3. The height of *mezzanines* and spaces below *mezzanines* shall be in accordance with Section 505.1.
4. Within R-2 and R-3 occupancies, habitable space, hallways, bathrooms, toilet rooms, laundry rooms and portions of basements containing these spaces shall have a ceiling height of not less than 7 feet (2134 mm).

Reason: To provide consistency with IRC Section R305.1. It appears the allowance for 7' ceiling height inside dwelling units was omitted from the IBC.

Cost Impact: The code change will not increase the cost of construction.

G159-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1208.2-G-DESANTE.doc

G160 – 12

1210.2.3

Proponent: Homer Maiel, PE, CBO, Town of Atherton (CA), representing ICC Tri-Chapter (Peninsula, East Bay, Monterey Bay)

Revise as follows:

1210.2.3 Showers. Shower compartments and walls above bathtubs with installed shower heads shall be finished with a smooth, nonabsorbent surface to a height not less than ~~70~~ 72 inches (~~1778~~ 1829 mm) above the drain inlet.

Reason: There is currently inconsistency between IBC and IRC. This will bring IBC in line with IRC.

Cost Impact: This code change may increase the cost of construction.

G160-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1210.2.3-G-MAIEL

G161 – 12

1210.4

Proponent: Tim Pate, City and County of Broomfield, Colorado, representing Colorado Chapter Code Change Committee

Revise as follows:

1210.4 2902.3.6 Toilet room location. Toilet rooms shall not open directly into a room used for the preparation of food for service to the public.

Reason: It has never made sense why there was a section dealing with location of a toilet room in relation to rooms used for preparation of food located in Chapter 12 – which is titled Interior Environment.

The requirements for finish materials for both walls and floors of bathrooms and for privacy have been relocated to Chapter 12 which makes sense but requirements for locations should not be in this chapter. This requirement should still be located within Chapter 29 which deals with Plumbing systems and specifically bathrooms. This chapter has numerous requirements for routes and locations already.

Cost Impact: This proposal will not increase the cost of construction.

G161-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1210.4-G-PATE.doc

G162 – 12

PART I – IBC GENERAL

1211.1 (NEW), TABLE 1211.1(1) (NEW), TABLE 1211.1(2) (NEW), CHAPTER 35

PART II– IBC GENERAL

12.11.2 (NEW), TABLE 1211.2(1) (NEW), TABLE 1211.2(2) (NEW), CHAPTER 35

PART III– IBC GENERAL

1211.3 (NEW), TABLE 1211.3(1) (NEW), TABLE 1211.3(2) (NEW), CHAPTER 35

PART IV– IBC GENERAL

1211.4 (NEW), TABLE 1211.4(1) (NEW), TABLE 1211.4(2) (NEW), CHAPTER 35

PART V – IBC GENERAL

1211.5 (NEW), TABLE 1211.5 (NEW), CHAPTER 35

PART VI– IBC GENERAL

1201.1

PART VII– IBC GENERAL

202

Proponent: Bob Eugene, Underwriters Laboratories (Robert.Eugene@ul.com)

THIS IS A 7 PART CODE CHANGE. ALL PARTS WILL BE HEARD BY THE IBC GENERAL COMMITTEE.

PART I- IBC GENERAL

Add new text as follows:

SECTION 1211 **MATERIAL EMISSIONS**

1211.1 Adhesives and sealants. A minimum of 85 percent by weight or volume, of site-applied adhesives and sealants shall comply with the VOC content limits in Table 1211.1(1) or VOC emissions limits in Table 1211.1 (2). The VOC content shall be determined in accordance with the appropriate standard being either U.S. EPA Method 24, SCAQMD Method 304, 316A or 316B. The exempt compound content shall be determined by either SCAQMD Methods 302 and 303 or ASTM D 3960. Table 1211.1 (1) adhesives and sealants regulatory category and VOC content compliance determination shall conform to the SCQMD Rule 1168. The provisions of this section shall not apply to adhesives and sealants subject to state or federal consumer product VOC regulations. HVAC duct sealants shall be classified as “Other” category within the SCAQMD Rule 1168 sealants table.

Exception: HVAC air duct sealants are not required to meet the emissions or the VOC content requirements when the air temperature in which they are applied is less than 40°F (4.5°C). Single-ply roof membrane adhesives shall be exempt from the requirements of Table 806.2(1) in climate zones 6, 7 and 8 as identified in the International Energy Conservation Code.

Table 1211.2(2) adhesive alternative emissions standards compliance shall be determined utilizing test methodology incorporated by reference in the CDPH/EHLB/Standard Method V1.1. The alternative emissions testing shall be performed by a laboratory that has the CDPH/EHLB/Standard Method V1.1 test methodology in the scope of its ISO 17025 Accreditation.

TABLE 1211.1 (1)
SITE APPLIED ADHESIVE AND SEALANTS VOC LIMITS^{a,b}

<u>ADHESIVE</u>	<u>VOC LIMIT</u>
Indoor carpet adhesives	50
Carpet pad adhesives	50
Outdoor carpet adhesives	150
Wood flooring adhesive	100
Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65
VCT and asphalt tile adhesives	50
Dry wall and panel adhesives	50
Cove base adhesives	50
Multipurpose construction adhesives	70
Structural glazing adhesives	100
Single ply roof membrane adhesives	250
Architectural Sealants	250
Architectural Sealant Primer	
Non Porous	250
Porous	775
Modified Bituminous Sealant Primer	500
Other Sealant Primers	750
CPVC solvent cement	490
PVC solvent cement	510
ABS solvent cement	325
Plastic Cement Welding	250
Adhesive Primer for Plastic	550
Contact Adhesive	80
Special Purpose Contact Adhesive	250
Structural Wood Member Adhesive	140

a. VOC limit less water and less exempt compounds in grams/liter

b. For low-solid adhesives and sealants, the VOC limit is expressed in grams/liter of material as specified in Rule 1168. For all other adhesives and sealants, the VOC limits are expressed as grams of VOC per liter of adhesive or sealant less water and less exempt compounds as specified in SCAQMD Rule 1168.

TABLE 1211.2 (2)
VOC EMISSION LIMITS

<u>VOC</u>	<u>LIMIT</u>
Individual VOCs	$\leq \frac{1}{2}$ CA chronic REL ^a
Formaldehyde	$\leq 9 \mu\text{g}/\text{m}^3$ or ≤ 7 ppb

a. CDPH/EHLB/Standard Method V1.1 Chronic Reference Exposure Level (CREL)

Add new standards to Chapter 35 as follows:

U. S. Environmental Protection Agency
Stationary Source Compliance Division
Washington, D.C.

US EPA Method 24 (issued 8/6/1993) Determination of Volatile Matter Content, Water Content, Density, Volume Solids and Weight Solids of Surface Coatings

South Coast Air Quality Management District
21865 Copley Dr
Diamond Bar, CA 91765

METHOD 302-91 Distillation of Solvents From Paints, Coatings and Inks, Revised February 1993
METHOD 303-91 Determination of Exempt Compounds, Revised February 1993
METHOD 304-91 Determination of Volatile Organic Compounds (Voc) in Various Materials, Revised February, 1996
METHOD 316A-92 Determination of Volatile Organic Compounds (Voc) in Materials Used For Pipes and Fittings, Revised October, 1996
METHOD 316B-97 Determination of Volatile Organic Compounds (Voc) in Adhesives Containing Cyanoacrylates
Rule 1168-1989 Adhesive and Sealant Applications, with amendments through January 7, 2005

ASTM

ASTM D3960—05 Standard Practice of Determining Volatile Organic Compound (VOC) Content of Paints & Related Coatings

California Department of Public Health
850 Marina Bay Parkway
Richmond, CA 94804

CDPH/EHLB/Standard Method V1.1 “Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.1” dated February 2010, California Department of Public Health

ISO

ISO/IEC 17025-2005 General Requirements for the Competence of Testing and Calibration Laboratories

PART II – IBC GENERAL

Add new text as follows:

1211.2 Architectural paints and coatings. A minimum of 85 percent by weight or volume, of site-applied interior architectural coatings shall comply with VOC content limits in Table 1211.2(1) or the alternate emissions limits in Table 1211.2 (2). The exempt compound content shall be determined by ASTM D3960.

Table 1211.2 (2) architectural coating alternate emissions standards compliance shall be determined utilizing test methodology incorporated by reference in the CDPH/EHLB/STANDARD METHOD V.1.1 The alternative emissions testing shall be performed by a laboratory that has the CDPH/EHLB/STANDARD METHOD V 1.1 test methodology in the scope of its ISO 17025 Accreditation.

TABLE 1211.2 (1)
VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS^{c,d}

<u>Coating Category</u>	<u>LIMIT^a</u> <u>g/l</u>
<u>Flat Coatings</u>	<u>50</u>
<u>Non-flat Coatings</u>	<u>100</u>
<u>Non-flat - High Gloss Coatings</u>	<u>150</u>
<u>Aluminum Roof Coatings</u>	<u>400</u>
<u>Basement Specialty Coatings</u>	<u>400</u>
<u>Bituminous Roof Coatings</u>	<u>50</u>
<u>Bituminous Roof Primers</u>	<u>350</u>
<u>Bond Breakers</u>	<u>350</u>

<u>Coating Category</u>	<u>LIMIT^a</u> <u>g/l</u>
<u>Concrete Curing Compounds</u>	<u>350</u>
<u>Concrete/Masonry Sealers</u>	<u>100</u>
<u>Driveway Sealers</u>	<u>50</u>
<u>Dry Fog Coatings</u>	<u>150</u>
<u>Faux Finishing Coatings</u>	<u>350</u>
<u>Fire Resistive Coatings</u>	<u>350</u>
<u>Floor Coatings</u>	<u>100</u>
<u>Form-Release Compounds</u>	<u>250</u>
<u>Graphic Arts Coatings (Sign Paints)</u>	<u>500</u>
<u>High Temperature Coatings</u>	<u>420</u>
<u>Industrial Maintenance Coatings</u>	<u>250</u>
<u>Low Solids Coatings</u>	<u>120^b</u>
<u>Magnesite Cement Coatings</u>	<u>450</u>
<u>Mastic Texture Coatings</u>	<u>100</u>
<u>Metallic Pigmented Coatings</u>	<u>500</u>
<u>Multi-Color Coatings</u>	<u>250</u>
<u>Pre-Treatment Wash Primers</u>	<u>420</u>
<u>Primers, Sealers, and Undercoaters</u>	<u>100</u>
<u>Reactive Penetrating Sealers</u>	<u>350</u>
<u>Recycled Coatings</u>	<u>250</u>
<u>Roof Coatings</u>	<u>50</u>
<u>Rust Preventative Coatings</u>	<u>250</u>
<u>Shellacs, Clear</u>	<u>730</u>
<u>Shellacs, <input type="checkbox"/> Opaque</u>	<u>550</u>
<u>Specialty Primers, Sealers, and</u>	<u>100</u>
<u>Stains</u>	<u>250</u>
<u>Stone Consolidants</u>	<u>450</u>
<u>Swimming Pool Coatings</u>	<u>340</u>
<u>Traffic Marking Coatings</u>	<u>100</u>
<u>Tub and Tile Refinish Coatings</u>	<u>420</u>
<u>Waterproofing Membranes</u>	<u>250</u>
<u>Wood Coatings</u>	<u>275</u>
<u>Wood Preservatives</u>	<u>350</u>
<u>Zinc-Rich Primers</u>	<u>340</u>

a. Limits are expressed as VOC Regulatory (except as noted), thinned to the manufacturer's maximum thinning recommendation, excluding any colorant added to tint bases.

b. Limit is expressed as VOC actual.

c. The specified limits remain in effect unless revised limits are listed in subsequent columns in the table.

d. Table 1211.2(1) architectural coating regulatory category and VOC content compliance determination shall conform to the California Air Resources Board *Suggested Control Measure for Architectural Coatings*.

Table 1211.2 (2)
ARCHITECTURAL COATINGS VOC EMISSION LIMITS

<u>VOC</u>	<u>LIMIT</u>
Individual	$\leq \frac{1}{2}$ CA chronic REL ^a
Formaldehyde	$\leq 9 \mu\text{g}/\text{m}^3$ or ≤ 7 ppb

a. CA Chronic Reference Exposure Level (CREL)

Add new standards to Chapter 35 as follows:

California Environmental Protection Agency
Air Resources Board
1001 I Street
Sacramento, CA 95814

California Air Resources Board Suggested Control Measure for Architectural Coatings, February 1, 2008
ASTM D3960—05 Standard Practice of Determining Volatile Organic Compound (VOC) Content of
Paints & Related Coatings

California Department of Public Health
850 Marina Bay Parkway
Richmond, CA 94804

CDPH/EHLB/Standard Method V1.1-2010 Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.1

ISO
ISO/IEC 17025-2005 General Requirements for the Competence of Testing and Calibration Laboratories

PART III – IBC GENERAL

Add new text as follows:

1211.3 Flooring. A minimum of 85 percent of the total area of flooring installed within the interior of the building shall comply with the requirements of Table 1211.3 (2). Where flooring with more than one distinct product layer is installed, the emissions from each layer shall comply with these requirements. The test methodology used to determine compliance shall be from CDPH/EHLB/STANDARD METHOD V.1.1. The emissions testing shall be performed by a laboratory that has the CDPH/EHLB/STANDARD METHOD V 1.1 test methodology in the scope of its ISO 17025 Accreditation.

Where post manufacture coatings or surface applications have not been applied, the flooring listed in Table 1211.3 (1) shall be deemed to comply with the requirements of Table 1211.3 (2).

TABLE 1211.3 (1)
FLOORING DEEMED TO COMPLY WITH VOC EMISSION LIMITS

Ceramic and concrete tile
Organic-free, mineral-based
Clay pavers
Concrete pavers
Concrete
Metal

**TABLE 1211.3 (2)
FLOORING VOC EMISSION LIMITS**

<u>VOC</u>	<u>LIMIT</u>
Individual VOCs	$\leq \frac{1}{2}$ CA chronic REL ^a
Formaldehyde	$\leq 9 \mu\text{g}/\text{m}^3$ or $\leq 7 \text{ ppb}$

a. CA Chronic Reference Exposure Level (CREL)

Add new standards to Chapter 35 as follows:

California Department of Public Health
850 Marina Bay Parkway
Richmond, CA 94804

CDPH/EHLB/Standard Method V1.1-2010 Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.1

ISO

ISO/IEC 17025-2005 General Requirements for the Competence of Testing and Calibration Laboratories

PART IV – IBC GENERAL

Add new text as follows:

1211.4 Acoustical ceiling tiles and wall systems. A minimum of 85 percent of acoustical ceiling tiles and wall systems, by square feet, shall comply with the requirements of Table 1211.4 (2). Where ceiling and wall systems with more than one distinct product layer are installed, the emissions from each layer shall comply with these requirements. The test methodology used to determine compliance shall be from CDPH/EHLB/STANDARD METHOD V.1.1. The emissions testing shall be performed by a laboratory that has the CDPH/EHLB/STANDARD METHOD V 1.1 test methodology in the scope of its ISO 17025 Accreditation.

Where post manufacture coatings or surface applications have not been applied, the ceiling or wall systems listed in Table 1211.4 (1) shall be deemed to comply with the requirements of Table 1211.4 (2).

**TABLE 1211.4 (1)
CEILING AND WALL SYSTEMS DEEMED TO COMPLY
WITH VOC EMISSION LIMITS**

<u>Ceramic tile</u>
<u>Organic-free, mineral-based</u>
<u>Clay masonry</u>
<u>Concrete masonry</u>
<u>Concrete</u>
<u>Gypsum Plaster</u>
<u>Metal</u>

TABLE 1211.4 (2)
ACOUSTICAL CEILING TILES AND WALL SYSTEMS
VOC EMISSION LIMITS

<u>VOC</u>	<u>LIMIT</u>
<u>Individual</u>	$\leq \frac{1}{2}$ CA chronic REL ^a
<u>Formaldehyde</u>	$\leq 9 \mu\text{g}/\text{m}^3$ or ≤ 7 ppb

a. CA Chronic Reference Exposure Level (CREL)

Add new standards to Chapter 35 as follows:

California Department of Public Health
850 Marina Bay Parkway
Richmond, CA 94804

CDPH/EHLB/Standard Method V1.1-2010 Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.1

ISO

ISO/IEC 17025-2005 General Requirements for the Competence of Testing and Calibration Laboratories

PART V – IBC GENERAL

1211.5 Insulation. A minimum of 85 percent of insulation shall comply with the requirements of Table 1211.5. The test methodology used to determine compliance shall be from CDPH/EHLB/STANDARD METHOD V.1.1. The emissions testing shall be performed by a laboratory that has the CDPH/EHLB/STANDARD METHOD V 1.1 test methodology in the scope of its ISO 17025 Accreditation.

TABLE 1211.5
INSULATION
VOC EMISSION LIMITS

<u>VOC</u>	<u>LIMIT</u>
<u>Individual VOCs</u>	$\leq \frac{1}{2}$ CA chronic REL ^a
<u>Formaldehyde</u>	$\leq 9 \mu\text{g}/\text{m}^3$ or ≤ 7 ppb

a. CA Chronic Reference Exposure Level (CREL)

Add new standards to Chapter 35 as follows:

California Department of Public Health
850 Marina Bay Parkway
Richmond, CA 94804

CDPH/EHLB/Standard Method V1.1-2010 Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.1

ISO/IEC 17025-2005 General Requirements for the Competence of Testing and Calibration Laboratories

PART VI– IBC GENERAL

Revise as follows:

1201.1 Scope. The provisions of this chapter shall govern ventilation, temperature control, lighting, *yards* and *courts*, sound transmission, room dimensions, surrounding materials, material emissions and rodent proofing associated with the interior spaces of buildings.

PART VII - IBC GENERAL

Add new definition to Chapter 2 as follows:

VOLATILE ORGANIC COMPOUND (VOC). A chemical compound based on carbon chains or rings that typically contain hydrogen and sometimes contain oxygen, nitrogen and other elements, and that has a boiling point in the range from (50 °C to 100 °C) to (240 °C to 260 °C).

Reason: (Part I) This proposal is part of a series of proposals to add material emissions to Chapter 12 of the IBC. With all buildings looking to save energy, and therefore money, by sealing up the indoor environment, protection from what we put in the building ourselves has never been more necessary. Including material emission restrictions in the IBC will ensure that all building occupants, not just those fortunate enough to be in a 'sustainable' building will be protected from harmful chemicals and pollutants. The threshold of 85% was chosen as to recognize that there may be some products that are not recognized as complying with these criteria get used on a construction site, but they are minimized to help provide a reasonable level of protection for individuals without being overly onerous.

These requirements are already in use in numerous municipalities, state, and government codes and programs and there are thousands of products from many manufacturers around the world that have proven to satisfy the proposed criteria in this section, at competitive prices, which ensures there is enough supply to satisfy the demand. With these thousands of products available the cost of development and purchase has steadily come down to levels that are on par with other products. Code officials, designers, installers, and building owners have many free resources to find compliant products and manufacturers even have ways to prove compliance to these requirements on their own.

The documents added to Chapter 35 are previously referenced in the International Green Construction Code and they have been proven to be appropriate and acceptable for making the evaluations of VOC content and emissions that are detailed in the proposal.

Bibliography:

CDPH/EHLB/Standard Method V1.1 <http://www.cal-iaq.org/download-voc-publications/voc-publications/standard-method-for-the-testing-and-evaluation-of-volatile-organic-chemical-emissions-from-indoor-sources-using-environmental-chambers-version-1-1-2010>

U.S. EPA Method 24: <http://www.epa.gov/ttn/emc/promgate/m-24.pdf>

SCAQMD

Method 302: <http://www.aqmd.gov/tao/methods/lab/302-91.pdf>

Method 303: www.aqmd.gov/tao/methods/lab/303-91.pdf

Method 304 <http://www.aqmd.gov/tao/methods/lab/304-91.pdf>

Method 316A www.aqmd.gov/tao/methods/lab/316A-92.pdf

Method 316B: www.aqmd.gov/tao/methods/lab/316B-92.pdf

Rule 1168: <http://www.aqmd.gov/rules/reg11/r1168.pdf>

Reason: (Part II) This proposal is part of a series of proposals to add material emissions to Chapter 12 of the IBC. With all buildings looking to save energy, and therefore money, by sealing up the indoor environment, protection from what we put in the building ourselves has never been more necessary. Including material emission restrictions in the IBC will ensure that all building occupants, not just those fortunate enough to be in a 'sustainable' building will be protected from harmful chemicals and pollutants.

The threshold of 85% was chosen as to recognize that there may be some products that are not recognized as complying with these criteria get used on a construction site, but they are minimized to help provide a reasonable level of protection for individuals without being overly onerous.

These requirements are already in use in numerous municipalities, state, and government codes and programs and there are thousands of products from many manufacturers around the world that have proven to satisfy the proposed criteria in this section, at competitive prices, which ensures there is enough supply to satisfy the demand. With these thousands of products available the cost of development and purchase has steadily come down to levels that are on par with other products. Code official's designers, installers, and building owners have many free resources to find compliant products and manufacturers even have ways to prove compliance to these requirements on their own. More and more of these products are coming in to our marketplace every day as many states and municipalities are already adopting these types of measures as what must be purchased in their jurisdictions.

The documents added to Chapter 35 are previously referenced in the International Green Construction Code and they have been proven to be appropriate and acceptable for making the evaluations of VOC content and emissions that are detailed in the proposal.

Bibliography:

CDPH/EHLB/Standard Method V1.1 <http://www.cal-iaq.org/download-voc-publications/voc-publications/standard-method-for-the-testing-and-evaluation-of-volatile-organic-chemical-emissions-from-indoor-sources-using-environmental-chambers-version-1-1-2010>

California Air Resources Board *Suggested Control Measure for Architectural Coatings*, February 1, 2008
http://www.arb.ca.gov/coatings/arch/Approved_2007_SCM.pdf

Reason: (Part III) This proposal is part of a series of proposals to add material emissions to Chapter 12 of the IBC. With all buildings looking to save energy, and therefore money, by sealing up the indoor environment, protection from what we put in the building ourselves has never been more necessary. Including material emission restrictions in the IBC will ensure that all building occupants, not just those fortunate enough to be in a 'sustainable' building will be protected from harmful chemicals and pollutants.

These requirements are already in use in numerous municipalities, state, and government codes and programs and there are thousands of products from many manufacturers around the world that have proven to satisfy the proposed criteria in this section, at competitive prices, which ensures there is enough supply to satisfy the demand. With these thousands of products available the cost of development and purchase has steadily come down to levels that are on par with other products. Code officials, designers, installers, and building owners have many free resources to find compliant products and manufacturers even have ways to prove compliance to these requirements on their own. Many newly compliant products in all types of flooring are finding their way in to the marketplace every day as even multiple flooring manufacturer associations have their own programs which already show compliance to these criteria.

The documents added to Chapter 35 are previously referenced in the International Green Construction Code and they have been proven to be appropriate and acceptable for making the evaluations of VOC content and emissions that are detailed in the proposal.

Bibliography:

CDPH/EHLB/Standard Method V1.1 <http://www.cal-iaq.org/download-voc-publications/voc-publications/standard-method-for-the-testing-and-evaluation-of-volatile-organic-chemical-emissions-from-indoor-sources-using-environmental-chambers-version-1-1-2010>

Reason: (Part IV) This proposal is part of a series of proposals to add material emissions to Chapter 12 of the IBC. With all buildings looking to save energy, and therefore money, by sealing up the indoor environment, protection from what we put in the building ourselves has never been more necessary. Including material emission restrictions in the IBC will ensure that all building occupants, not just those fortunate enough to be in a 'sustainable' building will be protected from harmful chemicals and pollutants.

These requirements are already in use in numerous municipalities, state, and government codes and programs and there are thousands of products from many manufacturers around the world that have proven to satisfy the proposed criteria in this section, at competitive prices, which ensures there is enough supply to satisfy the demand. With these thousands of products available the cost of development and purchase has steadily come down to levels that are on par with other products. Code officials, designers, installers, and building owners have many free resources to find compliant products and manufacturers even have ways to prove compliance to these requirements on their own. More and more of these products are coming in to our marketplace every day as many states and municipalities are already adopting these types of measures as what must be purchased in their jurisdictions.

The documents added to Chapter 35 are previously referenced in the International Green Construction Code and they have been proven to be appropriate and acceptable for making the evaluations of VOC content and emissions that are detailed in the proposal.

Bibliography:

CDPH/EHLB/Standard Method V1.1 <http://www.cal-iaq.org/download-voc-publications/voc-publications/standard-method-for-the-testing-and-evaluation-of-volatile-organic-chemical-emissions-from-indoor-sources-using-environmental-chambers-version-1-1-2010>

Reason: (Part V) This proposal is part of a series of proposals to add material emissions to Chapter 12 of the IBC. With all buildings looking to save energy, and therefore money, by sealing up the indoor environment, protection from what we put in the building ourselves has never been more necessary. Including material emission restrictions in the IBC will ensure that all building occupants, not just those fortunate enough to be in a 'sustainable' building will be protected from harmful chemicals and pollutants.

These requirements are already in use in numerous municipalities, state, and government codes and programs and there are thousands of products from many manufacturers around the world that have proven to satisfy the proposed criteria in this section, at competitive prices, which ensures there is enough supply to satisfy the demand. With these thousands of products available the cost of development and purchase has steadily come down to levels that are on par with other products. Code officials, designers, installers, and building owners have many free resources to find compliant products and manufacturers even have ways to prove compliance to these requirements on their own. More and more of these products are coming in to our marketplace every day as many states and municipalities are already adopting these types of measures as what must be purchased in their jurisdictions.

The documents added to Chapter 35 are previously referenced in the International Green Construction Code and they have been proven to be appropriate and acceptable for making the evaluations of VOC content and emissions that are detailed in the proposal.

Bibliography:

CDPH/EHLB/Standard Method V1.1 <http://www.cal-iaq.org/download-voc-publications/voc-publications/standard-method-for-the-testing-and-evaluation-of-volatile-organic-chemical-emissions-from-indoor-sources-using-environmental-chambers-version-1-1-2010>

Reason: (Part VI) This proposal is part of a series of proposals to add material emissions to Chapter 12 of the IBC. Including requirements to limit occupant exposure from harmful chemicals is necessary in order to meet the IBC's scope to safeguard public health. Studies from around the globe (see below for links to some of these) continue to show that exposure to high levels of harmful chemicals in our indoor environment can cause not only severe discomfort, but headaches, nose bleeds, increased asthma attacks, the onset of asthma, and potential long-term health effects. High levels of chemical exposure have even led to an increase in C-reactive protein levels in human subjects, which is the body's response to inflammation. The human body does not always react well to some of the chemicals that are being released by man-made products.

Including these minimum material emission restrictions in the IBC will ensure that all building occupants, not just those fortunate enough to be in a 'sustainable' building will be protected from harmful chemicals and pollutants.

Bibliography:

Studies:

<http://www.environment.gov.au/atmosphere/airquality/publications/sok/chapter10.html>

www.iaqscience.lbl.gov/pdfs/voc-1.pdf

http://oem.bmj.com/content/52/6/388.abstract?ijkey=a259a5df5523262ebc77dbf9c265a51aa6d71686&keytype2=tf_ipsecsha

<http://www.springerlink.com/content/6y4q8y2yv4akrqc9/>

http://erj.ersjournals.com/content/20/2/403.abstract?ijkey=0fa737bd14c56216d6cda0c24409c8f3b4686dc7&keytype2=tf_ipsecsha

http://erj.ersjournals.com/content/20/2/403.abstract?ijkey=0fa737bd14c56216d6cda0c24409c8f3b4686dc7&keytype2=tf_ipsecsha

<http://www.bioportfolio.com/resources/pmarticle/76147/Volatile-Organic-Compounds-Exposure-And-Cardiovascular-Effects-In-Hair-Salons.html>

<http://onlinelibrary.wiley.com/doi/10.1111/j.1600-0668.2010.00673.x/abstract>

Reason: (Part VII) Need to provide the definition for a new term used in a proposed new Section 1211.

Cost Impact: The proposed changes will not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, as listed below, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2012.

- US EPA Method 24 (issued 8/6/1993)
- South Coast Air Quality Management District
 - METHOD 302-91
 - METHOD 303-91
 - METHOD 304-91
 - METHOD 316A-92
 - METHOD 316B-97
 - Rule 1168-1989
- ASTM D3960—05
- CDPH/EHLB/Standard Method V1.1
- ISO/IEC 17025-2005

G162-12

PART I – IBC GENERAL

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – IBC GENERAL

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART III – IBC GENERAL

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART IV – IBC GENERAL

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART V – IBC GENERAL

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART VI – IBC GENERAL

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART VII – IBC GENERAL

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1211 (NEW)-G-EUGENE.doc

G163 – 12

3001.2, Chapter 35

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc. (bdbblack@neii.org)

Revise as follows:

3001.2 Referenced standards. Except as otherwise provided for in this code, the design, construction, installation, alteration, repair and maintenance of elevators and conveying systems and their components shall conform to ASME A17.1/CSA B44, ASME A17.7/CSA B44.7, ASME A90.1, ASME B20.1, ALI ALCTV, and ASCE 24 for construction in flood hazard areas established in Section 1612.3.

Add new standard to Chapter 35 as follows:

ASME

ASME A17.7-2007/CSA B44-07 Performance-Based Safety Code for Elevators and Escalators

Editorially change references to “ASME A17.1/CSA B44 or ASME A17.7/CSA B44.7” elsewhere in the code:

<u>Sections</u>	
907.3.3	911.1.5(17)
1007.4	1607.9.1
3001.4	3002.5
3003.2	3007.1
3007.2	3008.2.1
3008.7.6	3008.8.1
3411.8.2	

Reason: The *ASME A17.7/CSA B44-07 Performance-Based Safety Code for Elevators and Escalators* is already recognized and permitted by the 2009 *International Building Code* by virtue of the latter’s reference to ASME A17.1/CSA B44, which states:

1.2.1 Purpose

The purpose of this Code is to provide for the safety of life and limb, and to promote the public welfare. Compliance with this Code shall be achieved by

(a) conformance with the requirements in ASME A17.1/CSA B44; or

(b) conformance with some of the requirements in ASME A17.1/CSA B44 and for systems, subsystems, components, or functions that do not conform with certain requirements in ASME A17.1/CSA B44, conform with the applicable requirements in ASME A17.7/CSA B44.7; or

(c) conformance with the requirements in ASME A17.7/CSA B44.7.

This code change will merely make explicit the legal adoption of the ASME Performance-Based Code in those jurisdictions that have adopted the 2009 IBC or 2015 IBC without amendment to Section 3001.2.

Unlike other performance codes that provide little direction on how they should be enforced, the *ASME A17.7/CSA B44-07 Performance-Based Safety Code for Elevators and Escalators* provides a structured methodology for establishing, documenting, and demonstrating that necessary and appropriate protective measures are taken to eliminate hazards or sufficiently mitigate risks (see attached flow chart). This process is particularly useful for establishing safety of elevator systems, sub-systems, components, or functions involving innovative design and new technologies. Based on meeting Global Essential Safety Requirements (GESRs), this methodology is most often performed by independent Accredited Elevator/Escalator Certifying Organization (AECO), and the AECO certifies to the code enforcing authorities that the elevator meets the requirements in the PBC (see attached flow chart).

The *Performance-Based Safety Code for Elevators and Escalators* has already been adopted by numerous US jurisdictions through separate elevator codes, laws and regulations. These include:

Chicago
Colorado
Florida
Illinois
Iowa

Kentucky
Nevada
New Hampshire
North Carolina
South Carolina
Utah

Additionally, most US jurisdictions have already permitted the installation of elevator products that conform with *ASME A17.7/CSA B44-07* but not the 2009 or earlier edition of *ASME A17.1* referenced in their IBC-based building codes. Examples of this type of technology include elevators installed in wind turbine towers and elevators utilizing coated steel belt suspension means instead of traditional elevator ropes (cables).

Cost Impact: This code change proposal will not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, *ASME A17.7-2007/CSA B44-07* with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2012.

G163-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3001.2-G-BLACK

G164 – 12

3001.2, Chapter 35

Proponent: Victor D. Azzi, PhD, PE, Consulting Engineer, representing the Lift Manufacturers Product Section (LMPS), a division of the Material Handling Industry of America (MHIA) (victorazzi@comcast.net)

Revise as follows:

3001.2 Referenced standards. Except as otherwise provided for in this code, the design, construction, installation, *alteration*, repair and maintenance of elevators and conveying systems and their components shall conform to ASME A17.1/ CSA B44, ASME A90.1, ASME B20.1, ANSI MH29.1, ALI ALCTV, and ASCE 24 for construction in *flood hazard areas* established in Section 1612.3.

Add new standard to Chapter 35 as follows:

ANSI

MH29.1-2008 The Safety Requirements for Industrial Scissor Lifts

Reason: The proposed addition to Section 3001.2 is intended to add industrial scissors lifts, a common and industry-wide accepted vertical conveyance used in buildings since the early 1950's. This addition will help avoid the possibility of confusion by using the appropriate standard to define these types of vertical lifting devices.

As one example of the confusion that existed when, in Minneapolis, the Minnesota State Building Code was following the 2006 IBC. A City of Minneapolis building inspector in March 2008 was inspecting a new installation of an industrial scissors lift used as a loading dock. The only referenced standard in IBC Chapter 30 (Elevators and Conveying Systems) that seemed to be applicable was ASME B20.1, so he applied that standard. The other referenced standards in IBC 3001.2 were elevators (A17.1), belt manlifts (A90.1), and automotive lifts (ALI ALCTV). The inspector rationalized that, because the Minnesota State Building Code does not specifically recognize industrial scissor lifts, they are prohibited unless the manufacturer could show that they meet the intended safety requirements of the code he chose for the conveyance. The IBC is the minimum requirement for safety in that state. In order to gain approval, the manufacturer's scissors lift was required, in that case, to meet or exceed the level of safety that was intended for a completely different device – a conveyor as defined and regulated by ASME B20.1.

ANSI MH29.1 is a stand-alone, nationally accepted ANSI standard, and has been for some eighteen years. It is the only standard that applies to industrial scissor lifts in exactly the same way that ASME B20.1 applies to conveyors, A17.1 applies to elevators, A90.1 applies to belt manlifts, or ALI ALCTV applies to automotive service lifts.

Abstract of ANSI MH29.1

Mobile and stationary industrial scissors lifts raise, lower and position materials and personnel in various applications but are different from other conveyances such as aerial work platforms (AWP) and elevators. In an effort to be referenced in the International Building Code (IBC) along with conveying systems and elevators, MH29.1 has been revised to better illustrate that personnel operate and may themselves be raised or lowered by industrial scissor lifts. This standard now defines dock lifts, work access lifts and lift tables as the three categories of industrial scissors lifts and identifies their differences and similarities. The responsibilities of manufacturers, users, owners and operators have been reordered, consolidated and enhanced. Lastly, the requirements within the standard have been revised, where needed, to ensure they are stated using mandatory language. This revision of MH29.1 is stronger and less ambiguous than previous versions of this standard.

This revision also contains a new section on operator responsibilities and modifies values related to the indicator bars in the section on platform protection.

See attached images of typical installations of scissor lifts in buildings.

- Scissors lift in 3-sided pit at loading dock # 1
- Scissors lift in 3-sided pit at loading dock # 2
- Scissors lift in front of loading dock
- Two scissors lifts at a loading dock

Referenced Standards

ANSI MH29.1 – The Safety Requirements for Industrial Scissor Lifts
ASME B20.1 – The safety Standard for Conveyors and Related Equipment

Cost Impact: This addition to the code will not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, ANSI MH29.1-2008 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2012.

G164-12

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

3001.2-G-AZZI.doc

G165 – 12

3002.4

Proponent: Steve Willis, County of Lancaster, South Carolina, representing Lancaster County Emergency Medical Services (swillis@lanastercountysc.net)

Revise as follows:

3002.4 Elevator car to accommodate ambulance stretcher. Where elevators are provided in buildings ~~four~~ two or more stories above grade plane or four ~~two~~ or more stories below grade plane, at least one elevator shall be provided for fire department emergency access to all floors. The elevator car shall be of such a size and arrangement to accommodate a 24-inch by 84-inch (610 mm by 1930 mm) ambulance stretcher in the horizontal, open position and shall be identified by the international symbol for emergency medical services (star of life). The symbol shall not be less than 3 inches (76 mm) high and shall be placed inside on both sides of the hoistway door frame.

Reason: Motorized/ mechanized gurneys are the norm these days. Along with medical gear, oxygen cylinders, etc. the use of stairs greatly extends the time it takes to reach/ remove a patient and can easily lead to injury of the paramedic. A suitable elevator allows the gurney and patient to be transported safely and quickly.

If additional information is needed from EMS for committee consideration, we will be happy to provide such.

Cost Impact: I would presume there would be some slight cost increase in construction for buildings of three stories or less; however, if planning on the proper size elevator from the beginning, this might not be the case.

G165-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3002.4-G-WILLIS

G166 – 12

3004

Proponent: Jonathan Siu, City of Seattle Department of Planning & Development, Richard Bukowski, The RJA Group, Inc., Dave Frable, U.S. General Services Administration

Revise as follows:

SECTION 3004 HOISTWAY VENTING

3004.1 Vents required. Hoistways of elevators and dumbwaiters penetrating more than three stories shall be provided with a means for venting smoke and hot gases to the outer air in case of fire.

Exception: Venting is not required for the following elevators and hoistways:

1. In occupancies of other than Groups R-1, R-2, I-1, I-2 and similar occupancies with overnight *sleeping units*, where the building is equipped throughout with an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2.
2. Sidewalk elevator hoistways.
3. Elevators contained within and serving *open parking garages* only.
4. Elevators within individual residential *dwelling units*.

3004.2 Location of vents. Vents shall be located at the top of the hoistway and shall open either directly to the outer air or through noncombustible ducts to the outer air. Noncombustible ducts shall be permitted to pass through the elevator machine room, provided that portions of the ducts located outside the hoistway or machine room are enclosed by construction having not less than the *fire-resistance rating* required for the hoistway. Holes in the machine room floors for the passage of ropes, cables or other moving elevator equipment shall be limited as not to provide greater than 2 inches (51 mm) of clearance on all sides.

3004.3 Area of vents. Except as provided for in Section 3004.3.1, the area of the vents shall be not less than 31/2 percent of the area of the hoistway nor less than 3 square feet (0.28 m²) for each elevator car, and not less than 31/2 percent nor less than 0.5 square feet (0.047 m²) for each dumbwaiter car in the hoistway, whichever is greater. Of the total required vent area, not less than one third shall be permanently open. Closed portions of the required vent area shall consist of openings glazed with annealed glass not greater than 1/8 inch (3.2 mm) in thickness.

Exception: The total required vent area shall not be required to be permanently open where all the vent openings automatically open upon detection of smoke in the elevator lobbies or hoistway, upon power failure and upon activation of a manual override control. The manual override control shall be capable of opening and closing the vents and shall be located in an *approved* location.

3004.3.1 Reduced vent area. Where mechanical *ventilation* conforming to the *International Mechanical Code* is provided, a reduction in the required vent area is allowed provided that all of the following conditions are met:

1. The occupancy is not in Group R-1, R-2, I-1 or I-2 or of a similar occupancy with overnight *sleeping units*.
2. The vents required by Section 3004.2 do not have outside exposure.
3. The hoistway does not extend to the top of the building.
4. The hoistway and machine room exhaust fan is automatically reactivated by thermostatic means.
5. Equivalent venting of the hoistway is accomplished.

3004.4 3002.9 Plumbing and mechanical systems. Plumbing and mechanical systems shall not be located in an elevator hoistway enclosure.

Exception: Floor drains, sumps and sump pumps shall be permitted at the base of the hoistway enclosure provided they are indirectly connected to the plumbing system.

Reason: The purpose of this code change proposal is to delete the requirement for providing vents in elevator hoistways, since the provisions are potentially harmful, conflict with other provisions in the code, and are now considered unnecessary in the elevator safety standard adopted by reference in the IBC.

The purpose of hoistway venting is unclear in terms of the original intent. Provisions date back to the 1950s but appear to be focused more upon firefighting and post-fire overhaul. Since that time, the provisions have shifted for the vents to be readily available (always open) or to operate automatically via a smoke detector in the lobby or the hoistway. The concern is that such venting may have the effect of drawing smoke through the building where it is not appropriate. This is a specific concern after consideration of overall smoke movement by the CTC Elevator Lobby Study Group related to stack effect and preventing smoke movement throughout the building. This provision also conflicts with the allowance for hoistway pressurization in accordance with Section 909.21 which does not currently exempt hoistway venting when using pressurization. Furthermore, the requirement for hoistway venting has been removed from the 2010 edition of the ANSI/ASME A17.1 Safety Code for Elevators and Escalators, no conflict will result from this change.

However, the requirements in Section 3004.4 are still valid. With the deletion of Section 3004, these provisions need to be relocated. Section 3002 is titled "Hoistway Enclosures," and these provisions restricting what can be located in an elevator hoistway enclosure fit neatly within that subject matter. It can be argued that they never belonged in Section 3004 to begin with, since they do not relate to hoistway vents.

Cost Impact: The code change proposal will not increase the cost of construction.

G166-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3004-G-SIU.doc

G167 – 12

3004.1

Proponent: Michael Perrino, CBO, Code Consultants, Inc., representing self

Revise as follows:

3004.1 Vents required. Hoistways of elevators and dumbwaiters penetrating more than three *stories* shall be provided with a means for venting smoke and hot gases to the outer air in case of fire.

Exception: Venting is not required for the following elevators and hoistways:

1. In occupancies of other than Groups R-1, R-2, I-1, I-2 and similar occupancies with overnight *sleeping units*, where the building is equipped throughout with an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2.
2. Sidewalk elevator hoistways.
3. Elevators contained within and serving *open parking garages* only.
4. Elevators within individual residential *dwelling units*.
5. Elevator hoistways that are pressurized in accordance with Section 909.21.

Reason: The intent of the hoistway venting is to limit smoke spread to upper stories of a building via elevator hoistways. Elevator hoistway pressurization systems have been introduced to the IBC within the past 10 years that provide a means of limiting smoke movement into elevator hoistways.

The concept of the elevator hoistway pressurization is to create a pressure difference between the floor of fire origin and the elevator hoistway to minimize smoke movement into the elevator hoistway. Because the pressurization system limits smoke movement into the elevator hoistway, the hoistway venting to remove smoke in the shaft is not necessary.

The installation of both a hoistway pressurization system and hoistway venting increases the required capacity of the pressurized air to compensate for the air lost through the hoistway vent. The installation of hoistway venting in a pressurized hoistway also increases the complexity of the pressurization system, because the system must compensate for an open or closed hoistway vent.

Cost Impact: The code change proposal will not increase the cost of construction.

G167-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3004.1-G-PERRINO.doc

G168 – 12

PART 1 – INTERNATIONAL BUILDING CODE

Table 1607.1, 3004.2, 3006.1 through 3006.5, 3007.2, 3007.3.1, 3007.7.3, 3008.3.1, 3008.7.3, 3008.8, 3008.9.1

PART II – INTERNATIONAL FIRE CODE

IFC 903.3.1.1.1, 907.2.13.1.1, 911.1.5 (IBC [F] 903.3.1.1.1, [F] 907.2.13.1.1, [F] 911.1.5)

Proponent: Brian Black, BDSBlack Codes, Inc., representing National Elevator Industry Inc. (bdbblack@neii.org)

THIS IS A 2 PART CODE CHANGE. BOTH PARTS WILL BE HEARD BY THE IBC GENERAL COMMITTEE.

PART I – INTERNATIONAL BUILDING CODE - GENERAL

Revise as follows:

3004.2 Location of vents. Vents shall be located at the top of the hoistway and shall open either directly to the outer air or through noncombustible ducts to the outer air. Noncombustible ducts shall be permitted to pass through ~~the elevator machine rooms and control rooms~~, provided that portions of the ducts located outside the hoistway, ~~or machine room, or control room~~ are enclosed by construction having not less than the *fire-resistance rating* required for the hoistway. Holes in the machine room ~~and control room~~ floors for the passage of ropes, cables or other moving elevator equipment shall be limited as not to provide greater than 2 inches (51 mm) of clearance on all sides.

3006.1 Access. An *approved* means of access shall be provided to elevator machine rooms, control rooms, control spaces, and ~~overhead~~ machinery spaces.

3006.2 Venting. Elevator machine rooms, and machinery spaces that contain the driving machine, and control rooms or control spaces that contain the operation or motion controller, solid-state equipment for elevator operation shall be provided with an independent *ventilation* or air-conditioning system to protect against the overheating of the electrical equipment. The system shall be capable of maintaining temperatures within the range established for the elevator equipment.

3006.3 Pressurization. The elevator machine room, control rooms, or control space with openings into ~~servicing~~ a pressurized elevator hoistway shall be pressurized upon activation of a *heat or smoke detector* located in the elevator machine room, control room, or control space.

3006.4 Machine rooms, control rooms and machinery spaces, and control spaces. Elevator machine rooms, control rooms, control spaces, and machinery outside of but attached to a hoistway that have openings into the hoistway spaces shall be enclosed with *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. The *fire-resistance rating* shall be not less than the required rating of the hoistway enclosure served by the machinery. Openings in the *fire barriers* shall be protected with assemblies having a *fire protection rating* not less than that required for the hoistway enclosure doors.

Exceptions:

1. Where machine rooms, ~~and machinery spaces, control rooms and control spaces~~ do not abut and have no openings to the hoistway enclosure they serve the *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both, shall be permitted to be reduced to a 1-hour *fire resistance rating*.

2. In buildings four *stories* or less above *grade plane* where machine rooms, ~~and~~ machinery spaces, control rooms and control spaces do not abut and have no openings to the hoistway enclosure they serve, the machine rooms, ~~and~~ machinery spaces, control rooms and control spaces are not required to be fire-resistance rated.

3006.5 Shunt trip. Where elevator hoistways, ~~or~~ elevator machine rooms, control rooms and control spaces containing elevator ~~control~~ equipment are protected with automatic sprinklers, a means installed in accordance with NFPA 72, Section 6.16.4, Elevator Shutdown, shall be provided to disconnect automatically the main line power supply to the affected elevator prior to the application of water. This means shall not be self-resetting. The activation of sprinklers outside the hoistway, ~~or~~ machine room, machinery space, control room, or control spaces shall not disconnect the main line power supply.

3007.2 Phase I Emergency recall operation. Actuation of any building fire alarm initiating device shall initiate Phase I emergency recall operation on all fire service access elevators in accordance with the requirements in ASME A17.1/CSA B44. All other elevators shall remain in normal service unless Phase I emergency recall operation is manually initiated by a separate, required three-position key-operated "Fire Recall" switch or automatically initiated by the associated elevator lobby, hoistway, ~~or~~ elevator machine room, machinery space containing a motor controller or electric driving machine, control space, or control room smoke detectors. In addition, if the building also contains occupant evacuation elevators in accordance with Section 3008, an independent, three-position, key-operated "Fire Recall" switch conforming to the applicable requirements in ASME A17.1/CSA B44 shall be provided at the designated level for each fire service access elevator.

3007.3.1 Prohibited locations. Automatic sprinklers shall not be installed in elevator machine rooms, ~~elevator machine~~ machinery spaces, control rooms, control spaces, and elevator hoistways of fire service access elevators.

3007.7.3 Lobby doorways. Other than the door to the hoistway, each doorway to a fire service access elevator lobby shall be provided with a 3/4-hour *fire door assembly* complying with Section 716.5. The *fire door assembly* shall also comply with the smoke and draft control door assembly requirements of Section 716.5.3.1 with the UL 1784 test conducted without the artificial bottom seal.

3008.3.1 Prohibited locations. Automatic sprinklers shall not be installed in elevator machine rooms, ~~and elevator machine~~ machinery spaces, control rooms, control spaces, and elevator hoistways of for occupant evacuation elevators.

3008.7.3 Lobby doorways. Other than the doors to the hoistway, ~~and elevator machine rooms,~~ machinery spaces, control rooms, and control spaces within the lobby enclosure smoke barrier, each doorway to an occupant evacuation elevator lobby shall be provided with a 3/4-hour *fire door assembly* complying with Section 716.5. The *fire door assembly* shall also comply with the smoke and draft control assembly requirements of Section 716.5.3.1 with the UL 1784 test conducted without the artificial bottom seal.

3008.8 Elevator system monitoring. The occupant evacuation elevators shall be continuously monitored at the *fire command center* or a central control point *approved* by the fire department and arranged to display all of the following information:

1. Floor location of each elevator car.
2. Direction of travel of each elevator car.
3. Status of each elevator car with respect to whether it is occupied.
4. Status of normal power to the elevator equipment, elevator machinery and electrical apparatus ~~controller~~ cooling equipment where provided, ~~and~~ elevator machine room, control room and control space ventilation and cooling equipment.
5. Status of standby or emergency power system that provides backup power to the elevator equipment, elevator machinery and electrical ~~controller~~ cooling equipment where provided, ~~and~~ elevator machine room, control room and control space ventilation and cooling equipment.

6. Activation of any fire alarm initiating device in any elevator lobby, elevator machine room, or machine space containing a motor controller or electric driving machine, control space, control room, or elevator hoistway.

3008.9.1 Protection of wiring or cables. Wires or cables that are located outside of the elevator hoistway, ~~and~~ machine room, control room and control space and that provide normal or standby power, control signals, communication with the car, lighting, heating, air conditioning, *ventilation* and fire-detecting systems to fire service access elevators shall be protected by construction having a *fire-resistance rating* of not less than 2 hours, or shall be circuit integrity cable having a *fire resistance rating* of not less than 2 hours.

Exception: Wiring and cables to control signals are not required to be protected provided that wiring and cables do not serve Phase II emergency in-car operation.

Revise as follows:

1607.3 Uniform live loads. The live loads used in the design of buildings and other structures shall be the maximum loads expected by the intended use or occupancy but shall in no case be less than the minimum uniformly distributed live loads given in Table 1607.1.

**TABLE 1607.1
MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L_o,
AND MINIMUM CONCENTRATED LIVE LOADS^g**

OCCUPANCY OR USE	UNIFORM (psf)	Concentrated (lbs)
11. Elevator machine <u>room and control room</u> grating (on area of 2 inches by 2 inches)	--	300

(Portions of table not shown remain unchanged)

PART II – INTERNATIONAL FIRE CODE

Revise as follows:

IFC 903.3.1.1 (IBC [F] 903.3.1.1) NFPA 13 sprinkler systems. Where the provisions of this code require that a building or portion thereof be equipped throughout with an *automatic sprinkler system* in accordance with this section, sprinklers shall be installed throughout in accordance with NFPA 13 except as provided in Section 903.3.1.1.1.

IFC 903.3.1.1.1 (IBC [F] 903.3.1.1.1) Exempt locations. Automatic sprinklers shall not be required in the following rooms or areas where such rooms or areas are protected with an *approved* automatic fire detection system in accordance with Section 907.2 that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted from any room merely because it is damp, of fire-resistance-rated construction or contains electrical equipment.

1. Any room where the application of water, or flame and water, constitutes a serious life or fire hazard.
2. Any room or space where sprinklers are considered undesirable because of the nature of the contents, when *approved* by the fire code official.
3. Generator and transformer rooms separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a *fire-resistance rating* of not less than 2 hours.
4. Rooms or areas that are of noncombustible construction with wholly noncombustible contents.
5. Fire service access elevator machine rooms and machinery spaces.
6. Machine rooms, ~~and~~ machinery spaces, control rooms and control spaces associated with occupant evacuation elevators designed in accordance with Section 3008.

IFC 907.2.13.1.1 (IBC [F] 907.2.13.1.1) Area smoke detection. Area smoke detectors shall be provided in accordance with this section. Smoke detectors shall be connected to an automatic fire alarm system. The activation of any detector required by this section shall activate the emergency voice/alarm communication system in accordance with Section 907.5.2.2. In addition to smoke detectors required by Sections 907.2.1 through 907.2.10, smoke detectors shall be located as follows:

1. In each mechanical equipment, electrical, transformer, telephone equipment or similar room which is not provided with sprinkler protection.
2. In each elevator machine room, machinery space, control room and control space and in elevator lobbies.

IFC 911.1.5 (IBC [F] 911.1.5) Required features. The fire command center shall comply with NFPA 72 and shall contain the following features:

1. through 12. (*no change*)
13. An *approved* Building Information Card that contains, but is not limited to, the following information:
 - 13.1 (*no change*)
 - 13.2 (*no change*)
 - 13.3 (*no change*)
 - 13.4. *Exit stair* information that includes: number of *exit stairs* in building, each *exit stair* designation and floors served, location where each *exit stair* discharges, *exit stairs* that are pressurized, *exit stairs* provided with emergency lighting, each *exit stair* that allows reentry, *exit stairs* providing roof access; elevator information that includes: number of elevator banks, elevator bank designation, elevator car numbers and respective floors that they serve, location of elevator machine rooms, control rooms, control spaces, location of sky lobby, location of freight elevator banks;
 - 13.5 (*no change*)
 - 13.6 (*no change*)
 - 13.7 (*no change*)
14. through 18. (*no change*)

Reason: The ASME A17.1 *Safety Code for Elevators and Escalators* underwent a substantial revision in 2005 to incorporate requirements for Machine Room-Less elevators (MRLs). These provisions are in ASME A17.1-2007/CSA B44-07 with A17.1a-2008/CSA B44a-08 Addenda that is referenced in Chapter 35 of the 2012 IBC.

ASME A17.1 has definitions for elevator rooms and spaces that may contain various elevator apparatus, and has terminology for certain elevator electrical apparatus. Key concepts include:

- A room outside the hoistway with an elevator machine is a **machine room**;
- A room or space outside the hoistway with a motor controller and not a machine is a **control room** or **control space**;
- Where a machine and motor controller are located inside the hoistway, the hoistway is a **machinery space**;
- Machinery and control spaces may have doors;
- Elevator controllers include the operation controller and motion controller that may be separated from the location of the elevator machine and be located in separate elevator rooms and spaces;
- Machine rooms and controls rooms are full body spaces with doors that may have room sprinklers and fire detection apparatus; control and machinery spaces typically would not;
- Machine rooms and control rooms typically require room ventilation and cooling, machinery and control spaces typically do not;
- Machinery spaces inside the hoistway are covered by the code's hoistway requirements;
- Elevator machines and electrical apparatus in spaces other than the hoistway or rooms may require standby power for apparatus cooling equipment.

Thus, MRL design has resulted in elevators machines and controllers being located in rooms or spaces other than the traditional machine rooms regulated by the IBC. This code change simply harmonizes the current IBC text with the nomenclature now used in ASME A17.1/CSA B44 to ensure that the same level of protection is provided to MRLs as is provided for traditional elevators with machine rooms.

Cost Impact: This code change proposal will not increase the cost of construction.

G168-12

PART I – INTERNATIONAL BUILDING CODE

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – INTERNATIONAL FIRE CODE

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3004.2-G-BLACK.doc

G169 – 12

3004.4(New)

Proponent: Randall R. Dahmen, PE, WI licensed Commercial Building Inspector, representing himself (randy.dahmen@wi.gov)

Revise as follows:

3004.4 Vent controls. Vents shall require an OPEN-AUTO-CLOSE control over individual dampers. The control shall be lockable or located behind a locked cover with the key being a standard type carried by fire-fighters. The control shall be located as follows:

1. In the fire command center where a fire command center is provided.
2. In buildings without a fire command center, controls shall located at the designated level adjacent to the elevator stand-by power indicator where provided, or adjacent to the Phase I recall key switch.

(Renumber subsequent sections).

Reason: The 2012 IBC does not provide the user any direction on where the vent control is to be located or how it should function.

Cost Impact: The code change proposal will increase the cost of construction.

G169-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3004.X (NEW)-G-DAHMEN

G170 – 12

3006.4

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc. (bdbblack@neii.org)

Revise as follows:

3006.4 Machine rooms and machinery spaces. Elevator machine rooms and machinery spaces shall be enclosed with *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. The *fire-resistance rating* shall be not less than the required rating of the hoistway enclosure served by the machinery. Openings in the *fire barriers* shall be protected with assemblies having a *fire protection rating* not less than that required for the hoistway enclosure doors.

Exceptions:

1. Except for fire service access elevators. ~~Where~~ machine rooms and machinery spaces do not abut and have no openings to the hoistway enclosure they serve the *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both, shall be permitted to be reduced to a 1-hour *fire-resistance rating*.
2. In buildings four *stories* or less above *grade plane* where machine room and machinery spaces do not abut and have no openings to the hoistway enclosure they serve, the machine room and machinery spaces are not required to be fire-resistance rated.

Reason: It is critical to protect Fire Service Access Elevator systems by keeping heat from reaching the solid-state equipment and associated wiring/equipment located in machine rooms and machinery spaces. The reduction in Exception 1 to permit a 1-hour fire-resistance rating defeats this need.

Cost Impact: The code change proposal will increase the cost of construction.

G170-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3006.4-G-BLACK

G171 – 12

3006.4

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering (al.godwin@aon.com)

Revise as follows:

3006.4 Machine rooms and machinery spaces. Elevator machine rooms and machinery spaces shall be enclosed with *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. The *fire-resistance rating* shall be not less than the required rating of the hoistway enclosure served by the machinery. Openings in the *fire barriers* shall be protected with assemblies having a *fire protection rating* not less than that required for the hoistway enclosure doors.

Exceptions:

1. For other than fire service access elevators and occupant evacuation elevators, where machine rooms and machinery spaces do not abut and have no openings to the hoistway enclosure they serve the *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both, shall be permitted to be reduced to a 1-hour *fire-resistance rating*.
2. For other than fire service access elevators and occupant evacuation elevators, in buildings four *stories* or less above *grade plane* where machine room and machinery spaces do not abut and have no openings to the hoistway enclosure they serve, the machine room and machinery spaces are not required to be fire-resistance rated.

Reason: Section 903.3.1.1.1, items 5 and 6 prohibit sprinklers in machine rooms of fire service access elevators and occupant evacuation elevators. Thus, they are unprotected. As such, they should not be allowed a reduction in enclosure protection.

Alternate proposal:

In lieu of the change above, make the following change:

IBC Section 3006.4, delete the two exceptions.

And:

Group B cycle, IFC/IBC Section 903.3.1.1.1 amend item 5 and 6 as follows:

5. ~~Fire service access~~ elevator machine rooms and machinery spaces.
6. ~~Machine rooms and machinery spaces associated with occupant evacuation elevators designed in accordance with Section 3008.~~

Reason: Just treat all elevator machine rooms the same. No sprinklers. No reduction in construction.

Cost Impact: This code change proposal will increase the cost of construction in not allowing the reduction in the construction rating of elevator machine rooms.

G171-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3006.4-G-GODWIN

G172 – 12

3006.4, 3006.4.1 (NEW)

Proponent: Lynn W Manley, Illinois Department of Public Health – Health Care Facilities and Programs, representing self.

Revise as follows:

3006.4 Machine rooms and machinery spaces. Elevator machine rooms and machinery spaces shall be enclosed with *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. The *fire-resistance rating* shall be not less than the required rating of the hoistway enclosure served by the machinery. Openings in the *fire barriers* shall be protected with assemblies having a *fire protection rating* not less than that required for the hoistway enclosure doors.

Exceptions:

- ~~1. Where machine rooms and machinery spaces do not abut and have no openings to the hoistway enclosure they serve the *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both, shall be permitted to be reduced to a 1-hour *fire resistance rating*.~~
- ~~2. In buildings four stories or less above *grade plane* where machine room and machinery spaces do not abut and have no openings to the hoistway enclosure they serve, the machine room and machinery spaces are not required to be fire-resistance rated.~~

3006.4.1 Separated Elevator Machine Rooms. Where more than one hoistway is required under Section 3002.2, the elevator machine room that is open to each hoistway shall be separated from other elevator machine rooms by fire rated barriers The fire rated separation for the machine rooms shall match the requirements of the hoistways.

Exceptions:

1. Where machine rooms and machinery spaces do not abut and have no openings to the hoistway enclosure they serve the *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both, shall be permitted to be reduced to a 1-hour *fire resistance rating*.
2. In buildings four stories or less above *grade plane* where machine room and machinery spaces do not abut and have no openings to the hoistway enclosure they serve, the machine room and machinery spaces are not required to be fire-resistance rated.

Reason: Section 3002 limits the number of elevators in a shaft to four. Where more than four elevators are provided, separate shall enclosures are required. In many cases all elevator shafts are open to one common elevator machine room. These machine rooms are required to be sprinklered in new construction. ANSI/ASME A17.3, NFPA and ICC all require Phase I emergency recall and require smoke detection in the elevator machine room. Where sprinkler protection is provided, machine rooms are also required to have shunt trip relays and heat detection that is designed to shut down the elevators before any sprinkler head in the machine room activates.

This means that all elevators that are part of or open to the same machine room will recall to the designated floor from activation of any smoke detector in the machine room. This is not desirable in high rise buildings and it is not desirable in most hospitals.

Further, any activation of a heat detector in the elevator machine room will shut down every elevator served by that machine room. It is not desirable to lose every elevator in a building due a fire in a common machine rooms.

Recall and/or shut down should only occur if the elevator shaft and the machine room that serves that shaft have a fire. If the machine rooms are isolated by fire barriers, some elevator could remain in use because they are unaffected by the fire.

Cost impact: There will be no cost impact in many buildings where the change will not require anything new. There will be a slight cost increase in buildings with multiple elevator shafts. The cost of a fire barrier is negligible compared to the increased safety provided.

G172-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3006.4.1 (NEW)-G-MANLEY.doc

G173 – 12

3007.2

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc.
(bdbblack@neii.org)

Delete without substitution:

~~**3007.2 Phase I Emergency recall operation.** Actuation of any building fire alarm initiating device shall initiate Phase I emergency recall operation on all fire service access elevators in accordance with the requirements in ASME A17.1/CSA B44. All other elevators shall remain in normal service unless Phase I emergency recall operation is manually initiated by a separate, required three position, key-operated “Fire Recall” switch or automatically initiated by the associated elevator lobby, hoistway or elevator machine room *smoke detectors*. In addition, if the building also contains occupant evacuation elevators in accordance with Section 3008, an independent, three position, key-operated “Fire Recall” switch conforming to the applicable requirements in ASME A17.1/CSA B44 shall be provided at the designated level for each fire service access elevator.~~

Reason: The first sentence makes no sense because ASME A17.1/CSA B44 requires Phase I emergency recall operation only when a fire alarm initiating device is activated in an elevator lobby, hoistway, or associated elevator machine room, machinery space containing a motor controller or electric driving machine, control space, or control room. The activation of any alarm initiating device in a building activating Phase I on any elevator does not comply with ASME A17.1/CSA B44.

Just as important, this activation of Phase I in a building equipped with Occupant Evacuation Elevators complying with Section 3008 would unnecessarily compromise the evacuation capacity of the elevator system for no good reason. The firefighters responding to a building fire can capture the fire service access elevators when they get there if it is needed.

With the deletion of the first sentence, none of the rest of this section is necessary as these functions are already addressed in ASME A17.1/CSA B44 or the Occupant Evacuation Elevator requirements of Section 3008.

Cost Impact: The code change will not increase the cost of construction.

G173-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3007.2-G-BLACK

G174 – 12

PART 1 – IBC GENERAL

3007.7, 3007.7.1, 3007.7.5 (NEW), 3007.7.6 (NEW),

Part II – IBC GENERAL

3008.7, 3008.7.1, 3008.7.5 (NEW)

PART III – IBC FIRE SAFETY

713.14.1.2 (NEW)

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, (al.godwin@aon.com)

THIS IS A 3 PART CODE CHANGE. PARTS I AND II WILL BE HEARD BY THE IBC GENERAL COMMITTEE AND PART III WILL BE HEARD BY THE IBC FIRE SAFETY COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC FIRE SAFETY CODE DEVELOPMENT COMMITTEE.

PART I - IBC GENERAL

Revise as follows:

3007.7 Fire service access elevator lobby. The fire service access elevator shall open into a fire service access elevator lobby in accordance with Sections 3007.7.1 through ~~3007.7.5~~ 3007.7.7.

~~**Exception:** Where a fire service access elevator has two entrances onto a floor, the second entrance shall be permitted to open into an elevator lobby in accordance with Section 708.14.1.~~

The fire service access elevator lobby shall be permitted to be one of the following:

1. A private lobby from the fire service access elevator in which the elevator is dedicated to this use only.
2. A private lobby on the side or rear of a public or freight elevator which has two entrances onto a floor. The second entrance shall be permitted to open into an elevator lobby in accordance with Section 713.14.1.
3. The public or freight elevator lobby when constructed in accordance with this Section. The lobby exceptions of Section 713.14.1 shall not be applicable except as specified in Section 3007.7.2.

3007.7.1 Access. The fire service access elevator lobby shall have direct access to an enclosure for an *interior exit stairway*.

~~**Exception:** Direct access shall be permitted through an *exit passageway*, used only as an *exit* in accordance with Section 1023 that directly connects the lobby to the *interior stairway*, is not also used as a corridor, and has no other entry doors except those that are used as a *means of egress*.~~

3007.7.5 Connections with corridors and other rooms. Corridors shall be permitted to pass through the fire service access elevator lobby when the connecting walls and doors are constructed in accordance with this section.

~~**Exception:** In Group I-2 occupancies and ambulatory healthcare facilities, connecting doors for a corridor passing through the lobby need not have latching hardware when in compliance with Section 709.5.~~

Other rooms or spaces, other than those associated with fire service uses, shall not have doors directly connected to the fire service access elevator lobby.

3007.7.6 Storage and furniture. Fire service access elevator lobbies shall be maintained free of storage and furniture.

(Renumber subsequent sections)

PART II – IBC GENERAL

3008.7 Occupant evacuation elevator lobby. The occupant evacuation elevators shall open into an elevator lobby in accordance with Sections 3008.7.1 through ~~3008.7.7~~ 3008.7.8.

3008.7.1 Access. The occupant evacuation elevator lobby shall have direct access to an *interior exit stairway or ramp*.

Exception: Direct access shall be permitted to be through the use of an *exit passageway*, used only as an *exit* in accordance with Section 1023 that directly connects the lobby to the *interior stairway*, is not also used as a corridor, and has no other entry doors except those that are used as a *means of egress*

3008.7.5 Connections with corridors and other rooms. Corridors shall be permitted to pass through the occupant evacuation elevator lobby when the connecting walls and doors are constructed in accordance with this section.

Exception: In Group I-2 occupancies and ambulatory healthcare facilities, connecting doors for a corridor passing through the lobby need not have latching hardware when in compliance with Section 709.5.

Other rooms or spaces, other than those associated with fire service uses, shall not have doors directly connected to the occupant evacuation elevator lobby.

(Renumber subsequent sections)

PART III - IBC FIRE SAFETY

Revise as follows:

713.14.1.2 Connections with corridors and other rooms. When a lobby or smoke partitions of Exception 5 in Section 713.14.1, is constructed, corridors shall be permitted to pass through the elevator lobby when the connecting walls and doors are constructed in accordance with this section.

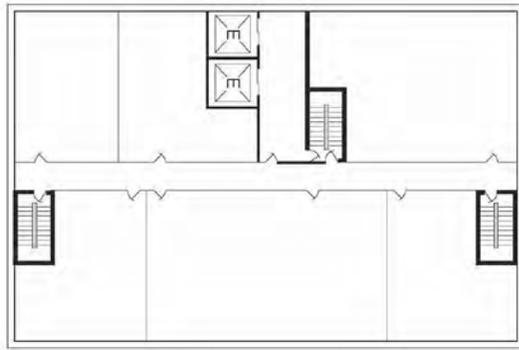
Exception: In Group I-2 occupancies and ambulatory health care facilities, connecting doors for a corridor passing through the lobby need not have latching hardware when in compliance with Section 709.5.

Other rooms or spaces shall be permitted to have doors directly connected to the lobby.

Reason: Part I: During the last code cycle, code change FS45-09/10 was submitted to restrict exiting through a passenger elevator lobby. It was withdrawn after public comments were submitted against it claiming that it was an exiting issue and not a fire safety issue.

This proposal is being submitted as a fire safety issue for clarification as to the fire safety construction of fire service access elevator lobbies and occupant evacuation elevator lobbies. While passenger elevator lobbies may end up as part of the discussion, the first point of clarification is for fire service access elevator lobbies.

When originally submitted, the exception to Section 3007.7 gave the impression that the fire service access elevator lobby was a private dedicated elevator lobby. When G49-09/10 passed, requiring “two” fire service access elevators, it virtually guaranteed that the public lobby would be used as the fire service access lobby. This was further confirmed when G164-09/10 was passed using the following drawing:



With multiple lobby changes happening (fire service access elevator lobbies, occupant evacuation lobbies, which are now tied to passenger lobbies) it is time the sections were correlated. And, how does section 709.5, allowing the removal of hardware fit into all of this?

There are commentary notes about public elevator lobbies that may or may not be applicable when used as the fire service access lobby. Thus, this submittal is to generate discussion as to what is or is not applicable.

Specific sections are explained as follows:

Section 3007.7, options 1 thru 3. These now appears to be the design options available.

Section 3007.7.1. Now that two elevators are required, it is likely that the main elevator lobby in the center of the building will be the option of choice as shown in G164-09/10. As such, it may not be feasible to install an extra stair in the center of the building, or bring over one of the original stairs and still meet code for dead end corridors. Therefore, direct connection from the lobby to the stair with the use of an exit passageway seems to be an appropriate option.

Section 3007.7.5. The commentary allows corridors to pass through a lobby and it allows other rooms to have direct access to and/or through the lobby. The commentary states:

"Egress through elevator lobbies from corridors on both sides is also allowed.

Two questions arise. One, can a space have its only exit access path through an elevator lobby? The answer is yes, if it meets all the other egress requirements. Second, can an exit enclosure open into an elevator lobby? The answer is yes. An elevator lobby is a normally occupied space in the same manner that a corridor is a normally occupied space."

If the above mentioned commentary notes are not deemed appropriate for passenger lobbies, then an amendment to Section 713.14.1 may be needed to correct the commentary.

However, as long as applicable, the following might also apply to the Fire Service Access lobby:

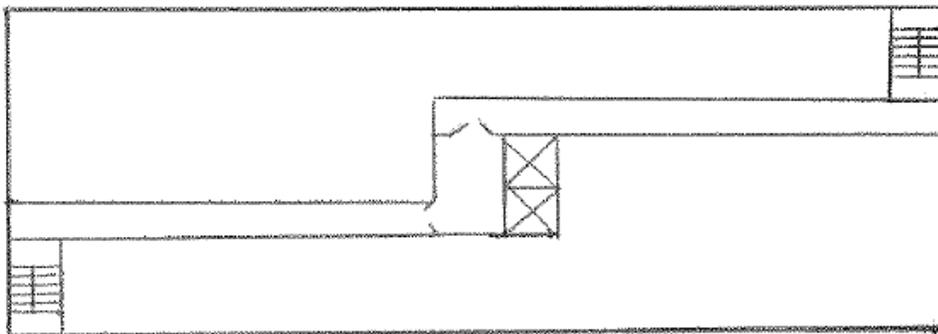
Allowing the corridor to pass through a fire service access lobby, when properly protected, would not seem to add any extra hazard than crossing across the front of a lobby as shown in G164 above. The exception for Group I-2's and ambulatory health care needs to be evaluated.

However, it does not seem appropriate to have extra rooms directly connected to the fire service access lobby, even if separated, that would exit through the lobby and perhaps into the directly connected interior stair.

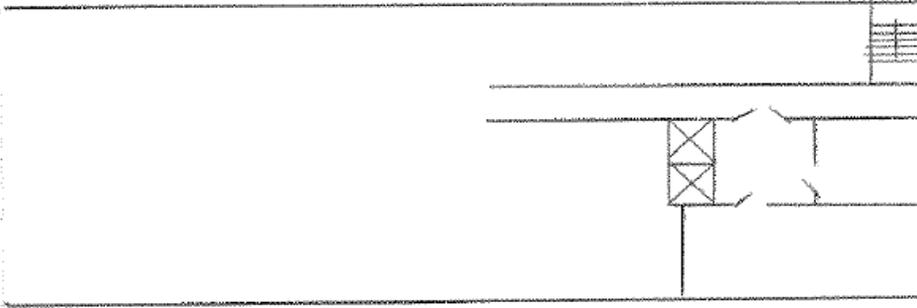
Section 3007.7.6. This is from IFC Section 607.3.

Some examples are as follows:

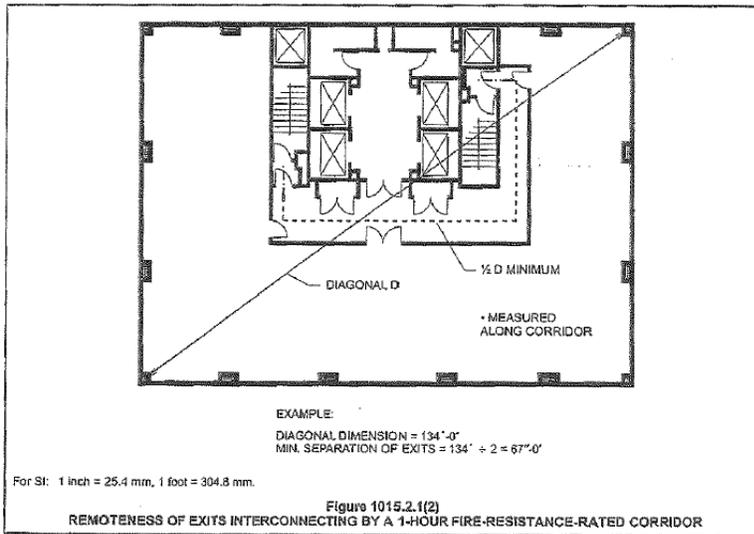
1. Corridor passes through passenger elevator lobby. If provided with access to a stair and proper construction, could this be a Fire Service Access Elevator Lobby and/or an Occupant Evacuation Elevator Lobby?



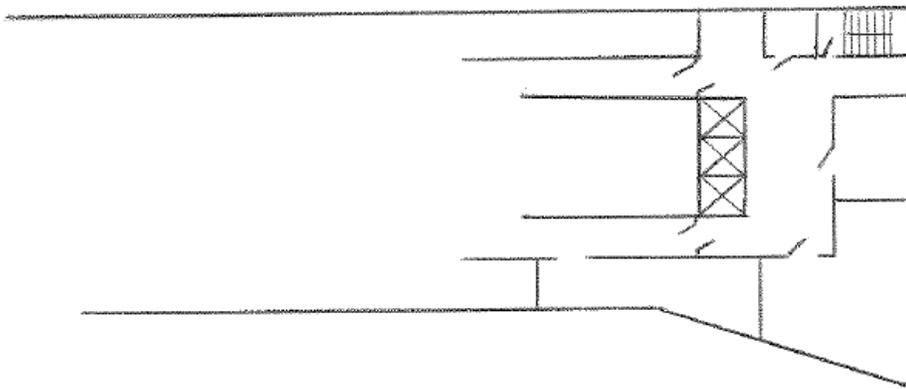
2. Rooms connect to and exit through elevator lobby. If provided with access to a stair and correct construction, could this be a Fire Service Access Elevator Lobby and/or an Occupant Evacuation Elevator Lobby?



Even the commentary has an example of what appear to be restrooms off an elevator lobby as follows:



3. The following is an example of corridors passing through a lobby, along with rooms with direct connection to lobby, serving as passenger elevator lobby Fire Service Access lobby and/or Occupant Evacuation Elevator lobby. This is an actual design submitted for review.



When this discussion concludes, there should be a clear definition of what is required for lobby protection.

Part II

Part II is actually a place holder. Depending on how the discussions proceed on Part I, amendments may be needed on Part II. By listing this section in the code change, it will allow them to be made.

My personal opinion is that the elevator lobby should be a separated alcove off of the side with only a corridor going across the entry way as shown in the drawing under Part I above. However, the commentary allows corridors to pass through a lobby and it allows other rooms to have direct access to and/or through the lobby. The commentary states:

"Egress through elevator lobbies from corridors on both sides is also allowed.

Two questions arise. One, can a space have its only exit access path through an elevator lobby? The answer is yes, if it meets all the other egress requirements. Second, can an exit enclosure open into an elevator lobby? The answer is yes. An elevator lobby is a normally occupied space in the same manner that a corridor is a normally occupied space." In order to specifically achieve the alcove as shown in the drawing above, it would seem that extra wording is required.

Part III

Part III is actually a place holder. Depending on how the discussions proceed on Part I, amendments may be needed on Part III. By listing this section in the code change, it will allow them to be made.

My personal opinion is that the elevator lobby should be a separated alcove off of the side with only a corridor going across the entry way as shown in the drawing under Part I below. However, the commentary allows corridors to pass through a lobby and it allows other rooms to have direct access to and/or through the lobby. The commentary states:

"Egress through elevator lobbies from corridors on both sides is also allowed.

Two questions arise. One, can a space have its only exit access path through an elevator lobby? The answer is yes, if it meets all the other egress requirements. Second, can an exit enclosure open into an elevator lobby? The answer is yes. An elevator lobby is a normally occupied space in the same manner that a corridor is a normally occupied space." In order to specifically achieve the alcove as shown in the drawing above, it would seem that extra wording is required.

Cost Impact: This code change proposal will increase the cost of construction if the intent was to allow such penetrations of all lobbies and this restricts such penetrations.

G174-12

PART I – IBC GENERAL

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – IBC GENERAL

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART III – IBC FIRE SAFETY

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3007.7-G-GODWIN.doc

G175 – 12

202, 1027.1, 3007.7.1, 3008.7.1

Proponent: Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee (CTC)

Revise as follows:

3007.7.1 Interior exit stairway access. The fire service access elevator lobby shall have direct access from the enclosed elevator lobby to an enclosure for an *interior exit stairway*.

Exception: Access to an interior exit stairway shall be permitted to be through a protected path of travel that has a level of fire protection not less than the elevator lobby enclosure. The protected path shall be separated from the enclosed elevator lobby through an opening protected by a smoke and draft control assembly in accordance Section 716.5.3.

3008.7.1 Interior exit stairway access. The occupant evacuation elevator lobby shall have direct access from the enclosed elevator lobby to an *interior exit stairway or ramp*.

Exception: Access to an interior exit stairway shall be permitted to be through a protected path of travel that has a level of fire protection not less than the elevator lobby enclosure. The protected path shall be separated from the enclosed elevator lobby through an opening protected by a smoke and draft control assembly in accordance Section 716.5.3.

1027.1 General. *Exits* shall discharge directly to the exterior of the building. The *exit discharge* shall be at grade or shall provide a direct access path of egress travel to grade. The *exit discharge* shall not reenter a building. The combined use of Exceptions 1 and 2 shall not exceed 50 percent of the number and capacity of the required exits.

Exceptions:

1., 2., and 3, (*Portions of text not shown remain unchanged*)

Add new definition as follows:

DIRECT ACCESS. A path of travel from a space to an immediately adjacent space through an opening in the common wall between the two spaces.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

This proposal is one of several proposals submitted by the CTC related to elevator lobby provisions. The ICC Executive Board directed the Code Technology Committee (CTC) to study the issue of elevator lobby separations in November 2010 due to the number of code change proposals submitted addressing this issue over a number of code change cycles. The Code Technology Committee formed a study group on the elevator lobby separation issue in December 2010. Note that this subject had been previously addressed by CABO/BCMC in 1986 with a similar conclusion. The code change proposals submitted are the result of the CTC’s study of the issue. Note that the scope of the activity was as follows:

Scope

- Review the need for elevator lobbies; with emphasis on building use, building and hoistway height, active and passive fire protection features associated with the aforementioned.
- Review the differences and specific needs when dealing with elevator lobbies of traditional-use elevators, fire service elevators, and occupant evacuation elevators.
- Review related code provisions, such as egress from and through elevator lobbies.
- Review the appropriate use of alternatives including pressurization of hoistways, additional doors, roll-down style barriers, and gasketing systems.
- Review with members of elevator industry to scope the requirements of applicable elevator reference standards as it deals with elevator lobby design, use and construction.

- Review design and construction requirements for elevator lobbies, including but not limited to dimensions, location and separation.
- Review applicable code change history, technical studies and loss statistics as part of this review.

Based upon the extensive nature of this area of study, 5 Task Groups were formed during the process to provide in-depth review and to manage the number of issues. These task groups developed a number of proposals that were coordinated throughout the process.

More information on this CTC area of study can be found at the following link.
<http://www.iccsafe.org/cs/CTC/Pages/ElevatorLobbies.aspx>

The focus of this proposal is on how the direct access requirements of Section 3007.7.1 and 3008.7.1 are applied. Both FSAE and Occupant Evacuation elevators lobbies call for direct access to the stairway. The term direct access is not necessarily clear in its meaning and could if applied as intended place severe design limitations on some buildings. The intent of this proposal is to set out a viable option for the stairs to be more remotely located from the lobby. A package of requirements that provides fire resistance rated construction and smoke and draft protection is provided. A definition is also provided to clarify the use of the term. Section 1027.1 was revised slightly since the current use of the term "direct access" in that case has a different meaning.

Background sections for the separation requirements are as follows:

708.1 General. The following wall assemblies shall comply with this section.

1. Walls separating *dwelling units* in the same building as required by Section 420.2.
2. Walls separating *sleeping units* in the same building as required by Section 420.2.
3. Walls separating tenant spaces in *covered and open mall buildings* as required by Section 402.4.2.1.
4. Corridor walls as required by Section 1018.1.
5. Elevator lobby separation as required by Section 713.14.1.

708.2 Materials. The walls shall be of materials permitted by the building type of construction.

708.3 Fire-resistance rating. Fire partitions shall have a *fire resistance rating* of not less than 1 hour.

Exceptions:

1. Corridor walls permitted to have a 1/2 hour *fire-resistance rating* by Table 1018.1.
2. *Dwelling unit* and *sleeping unit* separations in buildings of Type IIB, IIIB and VB construction shall have *fire-resistance ratings* of not less than 1/2 hour in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

716.5.3 Door assemblies in corridors and smoke barriers. *Fire door* assemblies required to have a minimum *fire protection rating* of 20 minutes where located in *corridor walls* or *smoke barrier walls* having a *fire-resistance rating* in accordance with Table 716.5 shall be tested in accordance with NFPA 252 or UL 10C without the hose stream test.

Exceptions:

1. Viewports that require a hole not larger than inch (25 mm) in diameter through the door, have at least a 0.25-inch-thick (6.4 mm) glass disc and the holder is of metal that will not melt out where subject to temperatures of 1,700°F (927°C).
2. *Corridor door* assemblies in occupancies of Group I-2 shall be in accordance with Section 407.3.1.
3. Unprotected openings shall be permitted for *corridors* in multitheater complexes where each motion picture auditorium has at least one-half of its required *exit* or *exit access doorways* opening directly to the exterior or into an *exit passageway*.
4. Horizontal sliding doors in *smoke barriers* that comply with Sections 408.3 and 408.8.4 in occupancies in Group I-3.

716.5.3.1 Smoke and draft control. *Fire door* assemblies shall also meet the requirements for a smoke and draft control door assembly tested in accordance with UL 1784. The air leakage rate of the door assembly shall not exceed 3.0 cubic feet per minute per square foot (0.01524 m³/s) at 200 Pa door opening at 0.10 inch (24.9 Pa) of water for both the ambient temperature and elevated temperature tests. Louvers shall be prohibited. Installation of smoke doors shall be in accordance with NFPA 105.

716.5.3.2 Glazing in door assemblies. In a 20-minute *fire door assembly*, the glazing material in the door itself shall have a minimum fire-protection-rated glazing of 20 minutes and shall be exempt from the hose stream test. Glazing material in any other part of the door assembly, including transom lights and sidelights, shall be tested in accordance with NFPA 257 or UL 9, including the hose stream test, in accordance with Section 716.6.

Background information on the term "direct access" is as follows:

ANCHOR BUILDING. An exterior perimeter building of a group other than H having direct access to a *covered or open mall building* but having required *means of egress* independent of the mall.

405.4.3 Elevators. Where elevators are provided, each compartment shall have direct access to an elevator. Where an elevator serves more than one compartment, an elevator lobby shall be provided and shall be separated from each compartment by a *smoke barrier* in accordance with Section 709. Doors shall be gasketed, have a drop sill and be automatic-closing by smoke detection in accordance with Section 716.5.9.3.

407.4.1 Direct access to a corridor. Habitable rooms in Group I-2 occupancies shall have an *exit access door* leading directly to a *corridor*.

505.2.3 Openness. A *mezzanine* shall be open and unobstructed to the room in which such *mezzanine* is located except for walls not more than 42 inches (1067 mm) in height, columns and posts.

Exceptions:

1. *Mezzanines* or portions thereof are not required to be open to the room in which the *mezzanines* are located, provided that the *occupant load* of the aggregate area of the enclosed space is not greater than 10.
2. A *mezzanine* having two or more *means of egress* is not required to be open to the room in which the *mezzanine* is located if at least one of the *means of egress* provides direct access to an *exit* from the *mezzanine* level.
3. ...

1007.6 Areas of refuge. Every required *area of refuge* shall be *accessible* from the space it serves by an *accessible means of egress*. The maximum travel distance from any *accessible* space to an *area of refuge* shall not exceed the travel distance permitted for the occupancy in accordance with Section 1016.1. Every required *area of refuge* shall have direct access to a *stairway* complying with Sections 1007.3 or an elevator complying with Section 1007.4. Where an elevator lobby is used as an *area of refuge*, the shaft and lobby shall comply with Section 1022.10 for smokeproof enclosures except where the elevators are in an *area of refuge* formed by a *horizontal exit* or smoke barrier.

1007.7.2 Outdoor facilities. Where *exit access* from the area serving outdoor facilities is essentially open to the outside, an exterior area of assisted rescue is permitted as an alternative to an *area of refuge*. Every required exterior area of assisted rescue shall have direct access to an *interior exit stairway*, *exterior stairway*, or elevator serving as an *accessible means of egress* component. The exterior area of assisted rescue shall comply with Sections 1007.7.3 through 1007.7.6 and shall be provided with a two-way communication system complying with Sections 1007.8.1 and 1007.8.2.

1027.1 General. *Exits* shall discharge directly to the exterior of the building. The *exit discharge* shall be at grade or shall provide direct access to grade. The *exit discharge* shall not reenter a building. The combined use of Exceptions 1 and 2 shall not exceed 50 percent of the number and capacity of the required exits.

1105.1.1 Parking garage entrances. Where provided, direct access for pedestrians from parking structures to buildings or facility entrances shall be *accessible*.

1105.1.2 Entrances from tunnels or elevated walkways. Where direct access is provided for pedestrians from a pedestrian tunnel or elevated walkway to a building or facility, at least one entrance to the building or facility from each tunnel or walkway shall be *accessible*.

TABLE 2902.1

c. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient sleeping units shall be permitted where such room is provided with direct access from each patient sleeping unit and with provisions for privacy.

3007.7.1 Access. The fire service access elevator lobby shall have direct access to an enclosure for an *interior exit stairway*.

3008.7.1 Access. The occupant evacuation elevator lobby shall have direct access to an *interior exit stairway* or *ramp*.

3109.4.1.8 Dwelling wall as a barrier. Where a wall of a *dwelling* serves as part of the barrier, one of the following shall apply:

1. Doors with direct access to the pool through that wall shall be equipped with an alarm that produces an audible warning when the door and/or its screen, if present, are opened. The alarm shall be *listed* and labeled in accordance with UL 2017. In dwellings not required to be *Accessible units*, *Type A units* or *Type B units*, the deactivation switch shall be located 54 inches (1372 mm) or more above the threshold of the door. In dwellings required to be *Accessible units*, *Type A units* or *Type B units*, the deactivation switch shall be located not higher than 54 inches (1372 mm) and not less than 48 inches (1219 mm) above the threshold of the door.

This proposal does not have any particular correlation concerns. See discussion on CTC elevator lobby proposal coordination in code change Section 713.14.1.

Cost Impact: This proposal will not increase the cost of construction.

G175-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3007.7.1-G-BALDASSARRA-CTC.doc

G176 – 12

3007.7.3

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc. (bdbblack@neii.org)

Revise as follows:

3007.7.3 Lobby doorways. Other than ~~the doors~~ to the hoistway, elevator control room, or elevator control space, each doorway to a fire service access elevator lobby shall be provided with a 3/4-hour *fire door assembly* complying with Section 716.5. The *fire door assembly* shall also comply with the smoke and draft control door assembly requirements of Section 716.5.3.1 with the UL 1784 test conducted without the artificial bottom seal.

Reason: Machine Room Less (MRL) elevators permitted by ASME A17.1/CSA B44 typically have control rooms or control spaces that are accessed by a door immediately adjacent to a hoistway opening in an elevator lobby.

3007.7.3 is intended to maintain the integrity of the lobby enclosure smoke barrier and the lobby's separation from the remaining floor area on a building floor (see 3007.7.2). This ensures that smoke from another area on the floor will not reach the lobby smoke detectors and place the elevator(s) into Phase I, thus rendering them unusable for Fire Service Access.

Smoke and draft control is unnecessary on elevator control room or space doors because any smoke emanating from those spaces has already activated the smoke detector in the control room/space and placed the elevator(s) in Phase I operation. It is thus unnecessary to protect the lobby smoke detector from smoke originating in the control room/space (or the hoistway to which the room/space is connected).

The ASME A17 Firefighters and Occupant Egress Task Groups that performed the hazard analyses that resulted in Fire Service Access Elevators did not discuss MRL elevators in their initial analyses that led to the current IBC requirements, and thus did not anticipate the problem of control room and control space doors opening into a lobby enclosure.

Cost Impact: This code change proposal will not increase the cost of construction.

G176-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3007.7.3-G-BLACK

G177 – 12

3007.7.4

Proponent: Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee (CTC)

Revise as follows:

3007.7.4 Lobby size. ~~Each~~ Regardless of the number of fire service access elevators served by the same elevator lobby the enclosed fire service access elevator lobby shall be a not less than 150 square feet (14 m²) in an area with a minimum dimension of 8 feet (2440 mm).

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

This proposal is one of several proposals submitted by the CTC related to elevator lobbies. The ICC Executive Board directed the Code Technology Committee (CTC) to study the issue of elevator lobby separations in November 2010 due to the number of code change proposals submitted addressing this issue over a number of code change cycles. The Code Technology Committee formed a study group on the elevator lobby separation issue in December 2010. Note that this subject had been previously addressed by CABO/BCMC in 1986 with a similar conclusion. The code change proposals submitted are the result of the CTC’s study of the issue. Note that the scope of the activity was as follows:

Scope

- Review the need for elevator lobbies, with emphasis on building use, building and hoistway height, active and passive fire protection features associated with the aforementioned.
- Review the differences and specific needs when dealing with elevator lobbies of traditional-use elevators, fire service elevators, and occupant evacuation elevators.
- Review related code provisions, such as egress from and through elevator lobbies.
- Review the appropriate use of alternatives including pressurization of hoistways, additional doors, roll-down style barriers, and gasketing systems.
- Review with members of elevator industry to scope the requirements of applicable elevator reference standards as it deals with elevator lobby design, use and construction.
- Review design and construction requirements for elevator lobbies, including but not limited to dimensions, location and separation.
- Review applicable code change history, technical studies and loss statistics as part of this review.

Based upon the extensive nature of this area of study, 5 Task Groups were formed during the process to provide in-depth review and to manage the number of issues. These task groups developed a number of proposals that were coordinated throughout the process.

More information on this CTC area of study can be found at the following link.
<http://www.iccsafe.org/cs/CTC/Pages/ElevatorLobbies.aspx>

This proposal is to clarify that it was not the intent to require additional space for each additional fire service access elevator provided. The initial intent of the size requirement was merely to provide sufficient space to conduct fire fighting operations. The 2012 IBC has a new requirement for a second fire service access elevator which was not related to the section on lobby size. This second elevator was initially discussed as being needed for additional capacity but when discussed on the floor was noted as being more for redundancy.

The current size requirement is the result of a successful Public Comment to Code Change G197-07/08 submitted by the proponent representing the Los Angeles Fire Department. The proponent originally wanted 50 square feet for each additional elevator car served by the lobby but that was disapproved by the General Committee. The Public Comment deleted the 50 square feet and added the minimum dimension requirement of 8 feet. A detailed rationale for that approach can be found in the Commenter’s Reason submitted with the Public Comment. So this proposed code change implements and clarifies the intent of the Public Comment that was approved by the ICC governmental voting representatives.

This proposal will not need correlation with other CTC Elevator lobby proposals. See discussion on CTC elevator lobby proposal coordination in the FS code change to Section 713.14.1 that changes the criteria for when elevator lobbies would be required.

Cost Impact: There will be no increase in the cost of construction.

G177-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3007.7.4-G-BALDASSARRA-CTC.doc

G178 – 12

3007.7.5, Figure 3007.7.5

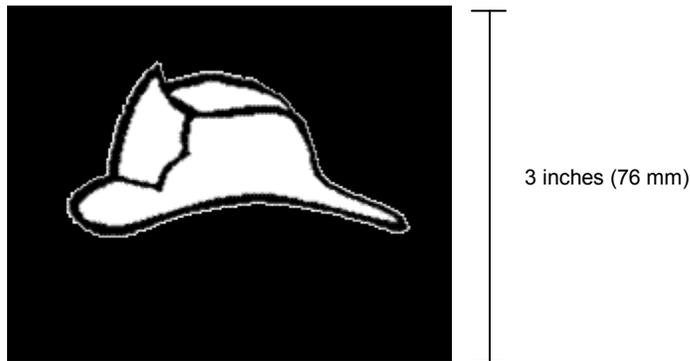
Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc. (bdbblack@neii.org)

Revise as follows:

3007.7.5 Fire service access elevator symbol. A pictorial symbol of a standardized design designating which elevators are fire service access elevators shall be installed on each side of the hoistway door frame on the portion of the frame at right angles to the fire service access elevator lobby. The fire service access elevator symbol shall be designed as shown in Figure 3007.7.5 and shall comply with the following:

1. The fire service access elevator symbol shall be not less than 3 inches (76 mm) in height.
2. The helmet shall contrast with the background, with either a light helmet on a dark background or a dark helmet on a light background.
23. The vertical center line of the fire service access elevator symbol shall be centered on the hoistway door frame. Each symbol shall not be less than 78 inches (1981 mm), and not more than 84 (2134 mm) inches above the finished floor at the threshold.

(Add dimensional lines on Figure 3007.7.5 to indicate that it is the rectangular field, not the helmet that has a dimension of 3 inches (76 mm) minimum height.)



**FIGURE 3007.7.5
FIRE SERVICE ACCESS ELEVATOR SYMBOL**

Reason: Because the code is printed in black and white, the current text may be read to state that the symbol must always have a white helmet on a black background. This is unnecessarily restrictive, and in fact a red helmet may be the preferred color to harmonize with the buttons on the elevator car operating panel that are regulated by ASME A17.1/CSA B44.

The proposed new text in item 2 was adapted from the sign requirements of ICC/ANSI A117.1-2009.

Adding dimensional lines on the figure clears up the ambiguity regarding what height is being regulated.

Cost Impact: This code change proposal will not increase the cost of construction.

G178-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3007.7.5-G-BLACK

G179 – 12

3007.9

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc.
(bdbblack@neii.org)

Revise as follows:

3007.9 Electrical power. The following features serving each fire service access elevator shall be supplied by both normal power and Type 60/Class 2/Level 1 standby power:

1. Elevator equipment.
2. Elevator hoistway lighting.
3. ~~Elevator machine room~~ Ventilation and cooling equipment for elevator machine/control rooms, and machinery/control spaces.
4. Elevator ~~controller cooling equipment~~ car lighting.

Reason: Editorial changes in item 3 reflect current terminology in ASME A17.1/CSA B44. Standby power is necessary for elevator car lighting as specified in item 4 to ensure that firefighters are not trapped in a pitch-black elevator in case the building power is interrupted.

Cost Impact: The code change will not increase the cost of construction.

G179-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3007.9-G-BLACK

G180 – 12

3008.2, 3008.2.1

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc. (bdbblack@neii.org)

Revise as follows:

~~**3008.2 Phase I Emergency recall operation.** An independent, three-position, key-operated “Fire Recall” switch complying with ASME A17.1/CSA B44 shall be provided at the designated level for each occupant evacuation elevator.~~

~~**3008.2.1 3008.2 Operation.** The occupant evacuation elevators shall be used for occupant self-evacuation only in the normal elevator operating mode prior to Phase I Emergency Recall Operation in accordance with the occupant evacuation operation requirements in ASME A17.1/CSA B44 and the building’s fire safety and evacuation plan.~~

(Renumber subsequent sections)

Reason: Requirements for *Occupant Evacuation Operation* have been approved for publication in the 2013 edition of ASME A17.1/CSA B44 *Safety Code for Elevators and Escalators*. With this development and corresponding changes to the NFPA 72 *Fire Alarm and Signaling Code*, the comprehensive ICC/ASME/NFPA package to establish occupant evacuation elevator requirements is complete, and provisions that were temporarily “parked” in the IBC can be removed as they are addressed by ASME A17.1/CSA B44.

ASME A17.1-2013/CSA B44-13 will amend that code’s Firefighters’ Emergency Operations requirements to require a “GROUP FIRE RECALL” three-position switch in the designated level lobby with a corresponding two-position switch in the fire command center that can recall all of the elevators in that group. In addition, each elevator in that group will have a three-position key operated switch for CAR FIRE RECALL in the designated level elevator lobby. This configuration will allow firefighters to recall all of the elevators in a group if warranted, but only recall a few of the elevators for firefighter service as needed, allowing the remaining elevators to operate as occupant evacuation elevators. This was the purpose of the key operated switches required by Section 3008.2, thus making the IBC requirement unnecessary.

DRAFT FOR ASME A17.1-2013/CSA B44-13i

2.27.10 Occupant Evacuation Operation

Where elevators are provided for occupant evacuation, Occupant Evacuation Operation (OEO) shall be provided to function prior to Firefighters’ Emergency Operation and shall conform to 2.27.10.1 through 2.27.10.6. See also Nonmandatory Appendix T.

2.27.10.1 The requirements of 2.27.3.1 shall be modified as follows:

2.27.10.1.1 The three-position switch in the lobby (2.27.3.1.1) and two-position switch in the fire command center (2.27.3.1.2) shall be labeled “GROUP FIRE RECALL” and indicate the elevator group that they control.

2.27.10.1.2 An additional three-position key-operated individual “CAR FIRE RECALL” switch per elevator, that will not change position without a deliberate action by the user, shall be located in the lobby at the elevator discharge level adjacent to the elevator it controls. Each switch shall be labeled “CAR ___ FIRE RECALL” (with the car identification, as specified in 2.29.1, inserted), and its positions marked “RESET”, “OFF” and “ON” (in that order) in letters a minimum of 5 mm (0.25 in.) high. Text shall be black on a yellow background. Each switch shall control the associated elevator in conformance with 2.27.3.1.6, but shall not control the other elevators controlled by the “GROUP FIRE RECALL” switch (see 2.27.10.1.1).

2.27.10.1.3 Each individual “CAR FIRE RECALL” switch shall terminate Occupant Evacuation Operation for the elevator it controls when placed in the “ON” position. Each “GROUP FIRE RECALL” switch shall terminate Occupant Evacuation Operation for the elevators it controls when placed in the “ON” position.

2.27.10.1.4 Each individual “CAR FIRE RECALL” switch shall be provided with an illuminated visual signal to indicate when Phase I Emergency Recall Operation is in effect for that car (see 2.27.3.1.5).

2.27.10.1.5 To remove an individual elevator from Phase I Emergency Recall Operation, the individual “CAR FIRE RECALL” switch shall be rotated first to the “RESET,” and then to the “OFF” position, provided that

(1) the “GROUP FIRE RECALL SWITCH” and the additional two-position “GROUP FIRE RECALL” switch, where provided, are in the “OFF” position

(2) no fire alarm initiating device is activated (see 2.27.3.2).

2.27.10.1.6 A car with its individual "CAR FIRE RECALL" switch in the "ON" position shall not be removed from Phase I Emergency Recall Operation when the "GROUP FIRE RECALL" switch is rotated to the "RESET" position and then to the "OFF" position.

2.27.10.1.7 The Designated Level shall be the same floor as the Elevator Discharge Level. At the elevator discharge level, only the door(s) serving the lobby where the "GROUP FIRE RECALL" switch is located shall open.

2.27.10.2 The sign required by 2.27.9 shall not be installed. A variable message sign, as defined in A117.1, shall be installed for each elevator group on each landing served. It shall be located not less than 2130 mm (84 in) and not more than 3000 mm (120 in) above the floor and in a central visible location within the elevator lobby. Message text shall be a minimum of 50 mm (2 in) high and conform to A117.1 or Appendix E requirement E-20, whichever is applicable (see Section 9 and E-1). The variable message signs shall be powered by the same power supply as the elevator, including emergency or standby power. Where not prohibited by the Building Code, when the elevators are not on Occupant Evacuation Operation or Firefighters' Emergency Operation, the variable message signs shall be permitted to display other elevator system status messages. Note: sample text: "Elevators in normal operation".

2.27.10.3 Where hoistway pressurization is provided, a car on Phase I Emergency Recall, after completing the requirements of 2.27.3.1.6, shall conform to the following:

- a) A car shall close its doors after 15 seconds.
- b) Door reopening devices, door force limiting devices, kinetic energy limiting devices, and the door open button shall remain active.
- c) At least one operating device normally used to call a car to the landing (e.g. hall call button, keypad) shall be located in the elevator lobby at the elevator discharge level. Actuating this device shall cause all recalled cars to open their doors for 30 to 45 seconds, then reclose.

2.27.10.4 A position indicator shall be provided at the elevator discharge level above or adjacent to the entrance for each car. The position indicator shall be powered by the same power supply as the elevator, including emergency or standby power.

2.27.10.5 Fire Alarm System Interface

2.27.10.5.1 Upon activation of an automatic fire alarm initiating device in the building in any area which does not initiate Phase I recall in this group, the fire alarm system shall provide signals to the elevator system in conformance with NFPA 72 indicating the floors to be evacuated. The floors to be evacuated shall be a contiguous block of floors, consisting of at least the floor with an active alarm, two floors above and two floors below. The elevator system shall initiate Occupant Evacuation Operation in accordance with 2.27.10.6 for the indicated floors. If activation of an automatic fire alarm initiating device which does not initiate Phase I recall in this group occurs on an additional floor(s) at any time while Occupant Evacuation Operation in accordance with 2.27.10.6 is in effect, the evacuation zone shall be expanded to include all floors with an active alarm, all floors between the highest and lowest floor with an active alarm plus two floors above the highest floor with an active alarm and two floors below the lowest floor with an active alarm. If the active alarm is on the elevator discharge level, automatic initiation of Occupant Evacuation Operation in accordance with 2.27.10.6 shall not be permitted. Manual initiation by authorized or emergency personnel shall be permitted.

Note (2.27.10.5.1): An active alarm refers to the condition caused by the "activation of an automatic fire alarm initiating device" as used in this requirement.

2.27.10.5.2 A means to initiate total building evacuation, labeled "ELEVATOR TOTAL BUILDING EVACUATION" shall be provided at the fire command center location and installed in accordance with NFPA 72. When this means is actuated, the fire alarm system shall provide a signal to the elevator system indicating that all floors are to be evacuated.

2.27.10.6 When any of the signals provided in 2.27.10.5 actuate, the elevators shall conform to 2.27.10.6.1 through 2.27.10.6.10 in order to move occupants from the floors affected by the fire to the elevator discharge level.

2.27.10.6.1 The variable message signs required by 2.27.10.2 shall indicate one of the following messages:

- (a) On all floors being evacuated, they shall indicate that the elevators are available for evacuation and the estimated time duration in minutes for the next elevator to arrive.
Note: Sample text: "Elevators and stairs available for evacuation. Next car in about 2 minutes".
- (b) On all floors not being evacuated, they shall indicate that elevator service is not available.
Note: Sample text: "Elevators temporarily dedicated to other floors".
- (c) On the elevator discharge level, they shall indicate that the cars are in evacuation mode and that passengers should not use elevators.
Note (2.27.10.6.1): Sample text: "Elevators dedicated to evacuation. Do not enter elevator".
- (d) If no elevators are available for Occupant Evacuation Operation (Fire service, inspection, shut off, etc.), they shall indicate that elevator service is not available. On all floors being evacuated they shall also indicate that occupants should use the stairs.

Note: Sample text for floors being evacuated: "Elevators out of service. Use stairs to evacuate". Sample text for other floors: "Elevators out of service".

2.27.10.6.2 Automatic visual signal or variable message sign, and voice notification in each car shall indicate that the car is being used to evacuate the building. In the event that the car stops to pick up passengers at a floor other than the elevator discharge level, the signals shall instruct the passengers to remain in the car. Upon or prior to arrival at the elevator discharge level, passengers shall be notified that they have arrived at the exit floor and to exit quickly. Message text shall be a minimum of 25 mm (1 in) high and conform to A117.1 or Appendix E requirement E-20, whichever is applicable (see Section 9 and E-1). Voice notification shall be at least 10 dBA above ambient but not more than 80 dBA measured 1525 mm (60 in) above the floor, at the center of the car.

2.27.10.6.3 All landing calls outside of the contiguous block of floors being evacuated shall be canceled and disabled. Building security systems which limit service to these floors shall be overridden. Any landing call within the contiguous block of floors shall call an elevator(s) to that landing. Landing calls entered at the floor with an active alarm shall be given higher priority than the calls at the floors above and below it. If a subsequent active alarm is received from a different floor, the evacuation priority shall be assigned in the sequence received. Once passengers have entered an elevator, it shall proceed only towards the elevator discharge level. When total building evacuation is in effect and no calls are entered at an affected floor, priority shall be based on distance from the elevator discharge level, with the furthest floor served getting highest priority.

2.27.10.6.4 Car calls for all floors, except for the elevator discharge level, shall be canceled and disabled. A car call for the elevator discharge level shall be automatically entered when any landing call is answered.

2.27.10.6.5 Cars which are unoccupied when Occupant Evacuation Operation is actuated shall move without delay to a floor which is being evacuated, and park with their doors closed until a landing call is registered. If the car is in motion away from the floors being evacuated, it shall stop at or before the next available floor, without opening the doors, reverse direction and move to a floor which is being evacuated.

2.27.10.6.6 Cars which are occupied when Occupant Evacuation Operation is actuated shall proceed without delay to the elevator discharge level. If a reversal of travel direction is needed, it shall be done at or before the next available floor without opening the doors. After opening and closing the doors at the elevator discharge level, they shall proceed without delay to a floor which is being evacuated and park with their doors closed until a landing call is registered.

2.27.10.6.7 When a car answers a landing call at a floor being evacuated, a car call for the elevator discharge level shall be automatically registered. The system shall accept a new landing call as soon as the doors have opened to permit loading at that floor, or sooner. If a new landing call is registered at this floor, it shall be assigned to another car, and not canceled until that car arrives. Actuation of the landing call device shall not prevent a loaded car from closing its doors and leaving the floor.

2.27.10.6.8 While passengers are entering the car at a floor being evacuated, when the load reaches no greater than 80% of car capacity, the door re-opening device(s) shall be disabled and the doors shall initiate closing at reduced kinetic energy in accordance with 2.13.4.2.1(c). If the doors stall while closing, they shall re-open fully, then close. An audible signal shall sound until the doors are closed. If the load exceeds 100% of capacity the doors shall re-open and remain open and a voice notification and visual signal shall indicate that the car is overloaded.

2.27.10.6.9 Once the block of floors being evacuated has been evacuated, as indicated by a 60 second period in which no landing calls are registered, one car shall park with its doors closed at the lowest floor of the block of floors ready to answer subsequent landing calls within the block of floors; the rest shall park with doors closed at the elevator discharge level. A car parked at the elevator discharge level shall replace the car at the lowest floor of the block, which has answered a landing call.

2.27.10.6.10 Occupant Evacuation Operation shall be terminated when the fire alarm system is reset or the signals provided in 2.27.3.2 are actuated (see 2.27.10.1.3).

i Approved 2011 by the ASME A17 Standards Committee for ASME A17.1-2013/CSA B44-13; subject to ANSI and ASME Board Approval. Provided for informational purposes and does not indicate endorsement by ASME or its Committees of proposed changes to the ICC *International Building Code*.

Cost Impact: This code change proposal will not increase the cost of construction.

G180-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3008.2-G-BLACK.doc

G181 – 12

3008.2.2

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc. (bdbblack@neii.org)

Delete without substitution as follows:

~~**3008.2.2 Activation.** Occupant evacuation elevator systems shall be activated by any of the following:~~

- ~~1. The operation of an automatic sprinkler system complying with Section 3008.3;~~
- ~~2. Smoke detectors required by another provision of the code;~~
- ~~3. Approved manual controls.~~

Reason: Requirements for *Occupant Evacuation Operation* have been approved for publication in the 2013 edition of ASME A17.1/CSA B44 *Safety Code for Elevators and Escalators*. With this development and corresponding changes to the NFPA 72 *Fire Alarm and Signaling Code*, the comprehensive ICC/ASME/NFPA package to establish occupant evacuation elevator requirements is complete, and provisions that were temporarily “parked” in the IBC can be removed as they are addressed by ASME A17.1/CSA B44.

ASME A17.1-2013/CSA B44-13 will include a section on Fire Alarm System Interface that requires that the activation of any building fire alarm initiating device not associated with Phase I elevator recall will provide signals to the elevator system controller(s) to indicate which building floors will be evacuated under the ASME Occupant Evacuation Operation criteria. These floors will be a contiguous block of floors consisting of the floor with the active alarm, two floors above, and two floors below. It will also accommodate enlarging the evacuation zone should other floors have an initiated fire alarm initiating device and will allow for full building evacuation when initiated by firefighters.

The ASME A17.1/CSA B44 requirements are more comprehensive than those in Section 3008.2.2 and the IBC requirements should be deleted in deference to the ASME provisions.

DRAFT FOR ASME A17.1-2013/CSA B44-13i

2.27.10 Occupant Evacuation Operation

Where elevators are provided for occupant evacuation, Occupant Evacuation Operation (OEO) shall be provided to function prior to Firefighters' Emergency Operation and shall conform to 2.27.10.1 through 2.27.10.6. See also Nonmandatory Appendix T.

2.27.10.1 The requirements of 2.27.3.1 shall be modified as follows:

2.27.10.1.1 The three-position switch in the lobby (2.27.3.1.1) and two-position switch in the fire command center (2.27.3.1.2) shall be labeled “GROUP FIRE RECALL” and indicate the elevator group that they control.

2.27.10.1.2 An additional three-position key-operated individual “CAR FIRE RECALL” switch per elevator, that will not change position without a deliberate action by the user, shall be located in the lobby at the elevator discharge level adjacent to the elevator it controls. Each switch shall be labeled “CAR ___ FIRE RECALL” (with the car identification, as specified in 2.29.1, inserted), and its positions marked “RESET”, “OFF” and “ON” (in that order) in letters a minimum of 5 mm (0.25 in.) high. Text shall be black on a yellow background. Each switch shall control the associated elevator in conformance with 2.27.3.1.6, but shall not control the other elevators controlled by the “GROUP FIRE RECALL” switch (see 2.27.10.1.1).

2.27.10.1.3 Each individual “CAR FIRE RECALL” switch shall terminate Occupant Evacuation Operation for the elevator it controls when placed in the “ON” position. Each “GROUP FIRE RECALL” switch shall terminate Occupant Evacuation Operation for the elevators it controls when placed in the “ON” position.

2.27.10.1.4 Each individual “CAR FIRE RECALL” switch shall be provided with an illuminated visual signal to indicate when Phase I Emergency Recall Operation is in effect for that car (see 2.27.3.1.5).

2.27.10.1.5 To remove an individual elevator from Phase I Emergency Recall Operation, the individual “CAR FIRE RECALL” switch shall be rotated first to the “RESET,” and then to the “OFF” position, provided that

- (1) the “GROUP FIRE RECALL SWITCH” and the additional two-position “GROUP FIRE RECALL” switch, where provided, are in the “OFF” position
- (2) no fire alarm initiating device is activated (see 2.27.3.2).

2.27.10.1.6 A car with its individual “CAR FIRE RECALL” switch in the “ON” position shall not be removed from Phase I Emergency Recall Operation when the “GROUP FIRE RECALL” switch is rotated to the “RESET” position and then to the “OFF” position.

2.27.10.1.7 The Designated Level shall be the same floor as the Elevator Discharge Level. At the elevator discharge level, only the door(s) serving the lobby where the "GROUP FIRE RECALL" switch is located shall open.

2.27.10.2 The sign required by 2.27.9 shall not be installed. A variable message sign, as defined in A117.1, shall be installed for each elevator group on each landing served. It shall be located not less than 2130 mm (84 in) and not more than 3000 mm (120 in) above the floor and in a central visible location within the elevator lobby. Message text shall be a minimum of 50 mm (2 in) high and conform to A117.1 or Appendix E requirement E-20, whichever is applicable (see Section 9 and E-1). The variable message signs shall be powered by the same power supply as the elevator, including emergency or standby power. Where not prohibited by the Building Code, when the elevators are not on Occupant Evacuation Operation or Firefighters' Emergency Operation, the variable message signs shall be permitted to display other elevator system status messages. Note: sample text: "Elevators in normal operation".

2.27.10.3 Where hoistway pressurization is provided, a car on Phase I Emergency Recall, after completing the requirements of 2.27.3.1.6, shall conform to the following:

- a) A car shall close its doors after 15 seconds.
- b) Door reopening devices, door force limiting devices, kinetic energy limiting devices, and the door open button shall remain active.
- c) At least one operating device normally used to call a car to the landing (e.g. hall call button, keypad) shall be located in the elevator lobby at the elevator discharge level. Actuating this device shall cause all recalled cars to open their doors for 30 to 45 seconds, then reclose.

2.27.10.4 A position indicator shall be provided at the elevator discharge level above or adjacent to the entrance for each car. The position indicator shall be powered by the same power supply as the elevator, including emergency or standby power.

2.27.10.5 Fire Alarm System Interface

2.27.10.5.1 Upon activation of an automatic fire alarm initiating device in the building in any area which does not initiate Phase I recall in this group, the fire alarm system shall provide signals to the elevator system in conformance with NFPA 72 indicating the floors to be evacuated. The floors to be evacuated shall be a contiguous block of floors, consisting of at least the floor with an active alarm, two floors above and two floors below. The elevator system shall initiate Occupant Evacuation Operation in accordance with 2.27.10.6 for the indicated floors. If activation of an automatic fire alarm initiating device which does not initiate Phase I recall in this group occurs on an additional floor(s) at any time while Occupant Evacuation Operation in accordance with 2.27.10.6 is in effect, the evacuation zone shall be expanded to include all floors with an active alarm, all floors between the highest and lowest floor with an active alarm plus two floors above the highest floor with an active alarm and two floors below the lowest floor with an active alarm. If the active alarm is on the elevator discharge level, automatic initiation of Occupant Evacuation Operation in accordance with 2.27.10.6 shall not be permitted. Manual initiation by authorized or emergency personnel shall be permitted.

Note (2.27.10.5.1): An active alarm refers to the condition caused by the "activation of an automatic fire alarm initiating device" as used in this requirement.

2.27.10.5.2 A means to initiate total building evacuation, labeled "ELEVATOR TOTAL BUILDING EVACUATION" shall be provided at the fire command center location and installed in accordance with NFPA 72. When this means is actuated, the fire alarm system shall provide a signal to the elevator system indicating that all floors are to be evacuated.

2.27.10.6 When any of the signals provided in 2.27.10.5 actuate, the elevators shall conform to 2.27.10.6.1 through 2.27.10.6.10 in order to move occupants from the floors affected by the fire to the elevator discharge level.

2.27.10.6.1 The variable message signs required by 2.27.10.2 shall indicate one of the following messages:

- (a) On all floors being evacuated, they shall indicate that the elevators are available for evacuation and the estimated time duration in minutes for the next elevator to arrive.
Note: Sample text: "Elevators and stairs available for evacuation. Next car in about 2 minutes".
- (b) On all floors not being evacuated, they shall indicate that elevator service is not available.
Note: Sample text: "Elevators temporarily dedicated to other floors".
- (c) On the elevator discharge level, they shall indicate that the cars are in evacuation mode and that passengers should not use elevators.
Note (2.27.10.6.1): Sample text: "Elevators dedicated to evacuation. Do not enter elevator".
- (d) If no elevators are available for Occupant Evacuation Operation (Fire service, inspection, shut off, etc.), they shall indicate that elevator service is not available. On all floors being evacuated they shall also indicate that occupants should use the stairs.

Note: Sample text for floors being evacuated: "Elevators out of service. Use stairs to evacuate". Sample text for other floors: "Elevators out of service".

2.27.10.6.2 Automatic visual signal or variable message sign, and voice notification in each car shall indicate that the car is being used to evacuate the building. In the event that the car stops to pick up passengers at a floor other than the elevator discharge level, the signals shall instruct the passengers to remain in the car. Upon or prior to arrival at the elevator discharge level, passengers shall be notified that they have arrived at the exit floor and to exit quickly. Message text shall be a minimum of 25 mm (1 in) high and conform to A117.1 or Appendix E requirement E-20, whichever is applicable (see Section 9 and E-1). Voice notification shall be at least 10 dBA above ambient but not more than 80 dBA measured 1525 mm (60 in) above the floor, at the center of the car.

2.27.10.6.3 All landing calls outside of the contiguous block of floors being evacuated shall be canceled and disabled. Building security systems which limit service to these floors shall be overridden. Any landing call within the contiguous block of floors shall call an elevator(s) to that landing. Landing calls entered at the floor with an active alarm shall be given higher priority than the calls at the floors above and below it. If a subsequent active alarm is received from a different floor, the evacuation priority shall be assigned in the sequence received. Once passengers have entered an elevator, it shall proceed only towards the elevator discharge level. When total building evacuation is in effect and no calls are entered at an affected floor, priority shall be based on distance from the elevator discharge level, with the furthest floor served getting highest priority.

2.27.10.6.4 Car calls for all floors, except for the elevator discharge level, shall be canceled and disabled. A car call for the elevator discharge level shall be automatically entered when any landing call is answered.

2.27.10.6.5 Cars which are unoccupied when Occupant Evacuation Operation is actuated shall move without delay to a floor which is being evacuated, and park with their doors closed until a landing call is registered. If the car is in motion away from the floors being evacuated, it shall stop at or before the next available floor, without opening the doors, reverse direction and move to a floor which is being evacuated.

2.27.10.6.6 Cars which are occupied when Occupant Evacuation Operation is actuated shall proceed without delay to the elevator discharge level. If a reversal of travel direction is needed, it shall be done at or before the next available floor without opening the doors. After opening and closing the doors at the elevator discharge level, they shall proceed without delay to a floor which is being evacuated and park with their doors closed until a landing call is registered.

2.27.10.6.7 When a car answers a landing call at a floor being evacuated, a car call for the elevator discharge level shall be automatically registered. The system shall accept a new landing call as soon as the doors have opened to permit loading at that floor, or sooner. If a new landing call is registered at this floor, it shall be assigned to another car, and not canceled until that car arrives. Actuation of the landing call device shall not prevent a loaded car from closing its doors and leaving the floor.

2.27.10.6.8 While passengers are entering the car at a floor being evacuated, when the load reaches no greater than 80% of car capacity, the door re-opening device(s) shall be disabled and the doors shall initiate closing at reduced kinetic energy in accordance with 2.13.4.2.1(c). If the doors stall while closing, they shall re-open fully, then close. An audible signal shall sound until the doors are closed. If the load exceeds 100% of capacity the doors shall re-open and remain open and a voice notification and visual signal shall indicate that the car is overloaded.

2.27.10.6.9 Once the block of floors being evacuated has been evacuated, as indicated by a 60 second period in which no landing calls are registered, one car shall park with its doors closed at the lowest floor of the block of floors ready to answer subsequent landing calls within the block of floors; the rest shall park with doors closed at the elevator discharge level. A car parked at the elevator discharge level shall replace the car at the lowest floor of the block, which has answered a landing call.

2.27.10.6.10 Occupant Evacuation Operation shall be terminated when the fire alarm system is reset or the signals provided in 2.27.3.2 are actuated (see 2.27.10.1.3).

i Approved 2011 by the ASME A17 Standards Committee for ASME A17.1-2013/CSA B44-13; subject to ANSI and ASME Board Approval. Provided for informational purposes and does not indicate endorsement by ASME or its Committees of proposed changes to the ICC *International Building Code*.

Cost Impact: This code change proposal will not increase the cost of construction.

G181-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3008.2.2-G-BLACK

G182 – 12

3008.7.3

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc. (bdbblack@neii.org)

Revise as follows:

3008.7.3 Lobby doorways. Other than ~~the doors~~ to the hoistway, elevator control room, or elevator control space, each doorway to an occupant evacuation elevator lobby shall be provided with a 3/4-hour *fire door assembly* complying with Section 716.5. The *fire door assembly* shall also comply with the smoke and draft control assembly requirements of Section 716.5.3.1 with the UL 1784 test conducted without the artificial bottom seal.

Reason: Machine Room Less (MRL) elevators permitted by ASME A17.1/CSA B44 typically have control rooms or control spaces that are accessed by a door immediately adjacent to a hoistway opening in an elevator lobby.

3008.7.3 is intended to maintain the integrity of the lobby enclosure smoke barrier and the lobby's separation from the remaining floor area on a building floor (see 3008.7.2). This ensures that smoke from another area on the floor will not reach the lobby smoke detectors and place the elevator(s) into Phase I, thus rendering them unusable for Occupant Evacuation.

Smoke and draft control is unnecessary on elevator control room or space doors because any smoke emanating from those spaces has already activated the smoke detector in the control room/space and placed the elevator(s) in Phase I operation. It is thus unnecessary to protect the lobby smoke detector from smoke originating in the control room/space (or the hoistway to which the room/space is connected).

The ASME A17 Firefighters and Occupant Egress Task Groups that performed the hazard analyses that resulted in Occupant Evacuation Elevators did not discuss MRL elevators in their initial analyses that led to the current IBC requirements, and thus did not anticipate the problem of control room and control space doors opening into a lobby enclosure.

Cost Impact: This code change proposal will not increase the cost of construction.

G182-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3008.7.3-G-BLACK.doc

G183 – 12

3008.7.6

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc. (bdbblack@neii.org)

Delete without substitution as follows:

~~**3008.7.6 Lobby status indicator.** Each occupant evacuation elevator lobby shall be equipped with a status indicator arranged to display all of the following information:~~

- ~~1. An illuminated green light and the message, "Elevators available for occupant evacuation" when the elevators are operating in normal service and the *fire alarm system* is indicating an alarm in the building.~~
- ~~2. An illuminated red light and the message, "Elevators out of service, use exit stairs" when the elevators are in Phase I emergency recall operation in accordance with the requirements in ASME A17.1/CSA B44.~~
- ~~3. No illuminated light or message when the elevators are operating in normal service.~~

Reason: Requirements for *Occupant Evacuation Operation* have been approved for publication in the 2013 edition of ASME A17.1/CSA B44 *Safety Code for Elevators and Escalators*. With this development and corresponding changes to the NFPA 72 *Fire Alarm and Signaling Code*, the comprehensive ICC/ASME/NFPA package to establish occupant evacuation elevator requirements is complete, and provisions that were temporarily "parked" in the IBC can be removed as they are addressed by ASME A17.1/CSA B44.

ASME A17.1-2013/CSA B44-13 will include all of the information specified in Section 3008.7.6, (1) and (2). In addition, it will require approximate waiting times for persons awaiting an evacuation elevator and an indication that exit stairs may also be used.

ASME A17.1-2013/CSA B44-13 will also provide indicators in the signs in lobbies on floors not being evacuated that elevator service is not available. This will ensure that persons who have heard of a fire in the building and who are aware that elevators may be available for evacuation will not waste time waiting for elevators that will not arrive at their floors.

ASME A17.1-2013/CSA B44-13 will require every sign in elevator lobbies where elevators have entered Phase I Firefighter service to indicate that the elevators are out of service and not available.

ASME A17.1-2013/CSA B44-13 differs from the IBC in that it will permit messages such as "Elevators in normal operation" on the lobby status indicator signs when no evacuation is occurring. The ASME A17 Elevators & Fire Task Group believes that this will accustom building occupants to reading the indicators and will also allow for monitoring to ensure that the signs are operable when needed.

Finally, ASME A17.1-2013/CSA B44-13 will specify that all indicator signs comply with the Variable Message Sign requirements of ICC/ANSI A117.1, thus ensuring they are accessible to persons with disabilities.

For these reasons, Section 3008.7.6 should be deleted in deference to the referenced standard.

DRAFT FOR ASME A17.1-2013/CSA B44-13i

2.27.10 Occupant Evacuation Operation

Where elevators are provided for occupant evacuation, Occupant Evacuation Operation (OEO) shall be provided to function prior to Firefighters' Emergency Operation and shall conform to 2.27.10.1 through 2.27.10.6. See also Nonmandatory Appendix T.

2.27.10.1 The requirements of 2.27.3.1 shall be modified as follows:

2.27.10.1.1 The three-position switch in the lobby (2.27.3.1.1) and two-position switch in the fire command center (2.27.3.1.2) shall be labeled "GROUP FIRE RECALL" and indicate the elevator group that they control.

2.27.10.1.2 An additional three-position key-operated individual "CAR FIRE RECALL" switch per elevator, that will not change position without a deliberate action by the user, shall be located in the lobby at the elevator discharge level adjacent to the elevator it controls. Each switch shall be labeled "CAR ___ FIRE RECALL" (with the car identification, as specified in 2.29.1, inserted), and its positions marked "RESET", "OFF" and "ON" (in that order) in letters a minimum of 5 mm (0.25 in.) high. Text shall be black on a yellow background. Each switch shall control the associated elevator in conformance with 2.27.3.1.6, but shall not control the other elevators controlled by the "GROUP FIRE RECALL" switch (see 2.27.10.1.1).

2.27.10.1.3 Each individual "CAR FIRE RECALL" switch shall terminate Occupant Evacuation Operation for the elevator it controls when placed in the "ON" position. Each "GROUP FIRE RECALL" switch shall terminate Occupant Evacuation Operation for the elevators it controls when placed in the "ON" position.

2.27.10.1.4 Each individual "CAR FIRE RECALL" switch shall be provided with an illuminated visual signal to indicate when Phase I Emergency Recall Operation is in effect for that car (see 2.27.3.1.5).

2.27.10.1.5 To remove an individual elevator from Phase I Emergency Recall Operation, the individual "CAR FIRE RECALL" switch shall be rotated first to the "RESET," and then to the "OFF" position, provided that

- (1) the "GROUP FIRE RECALL SWITCH" and the additional two-position "GROUP FIRE RECALL" switch, where provided, are in the "OFF" position
- (2) no fire alarm initiating device is activated (see 2.27.3.2).

2.27.10.1.6 A car with its individual "CAR FIRE RECALL" switch in the "ON" position shall not be removed from Phase I Emergency Recall Operation when the "GROUP FIRE RECALL" switch is rotated to the "RESET" position and then to the "OFF" position.

2.27.10.1.7 The Designated Level shall be the same floor as the Elevator Discharge Level. At the elevator discharge level, only the door(s) serving the lobby where the "GROUP FIRE RECALL" switch is located shall open.

2.27.10.2 The sign required by 2.27.9 shall not be installed. A variable message sign, as defined in A117.1, shall be installed for each elevator group on each landing served. It shall be located not less than 2130 mm (84 in) and not more than 3000 mm (120 in) above the floor and in a central visible location within the elevator lobby. Message text shall be a minimum of 50 mm (2 in) high and conform to A117.1 or Appendix E requirement E-20, whichever is applicable (see Section 9 and E-1). The variable message signs shall be powered by the same power supply as the elevator, including emergency or standby power. Where not prohibited by the Building Code, when the elevators are not on Occupant Evacuation Operation or Firefighters' Emergency Operation, the variable message signs shall be permitted to display other elevator system status messages. Note: sample text: "Elevators in normal operation".

2.27.10.3 Where hoistway pressurization is provided, a car on Phase I Emergency Recall, after completing the requirements of 2.27.3.1.6, shall conform to the following:

- a) A car shall close its doors after 15 seconds.
- b) Door reopening devices, door force limiting devices, kinetic energy limiting devices, and the door open button shall remain active.
- c) At least one operating device normally used to call a car to the landing (e.g. hall call button, keypad) shall be located in the elevator lobby at the elevator discharge level. Actuating this device shall cause all recalled cars to open their doors for 30 to 45 seconds, then reclose.

2.27.10.4 A position indicator shall be provided at the elevator discharge level above or adjacent to the entrance for each car. The position indicator shall be powered by the same power supply as the elevator, including emergency or standby power.

2.27.10.5 Fire Alarm System Interface

2.27.10.5.1 Upon activation of an automatic fire alarm initiating device in the building in any area which does not initiate Phase I recall in this group, the fire alarm system shall provide signals to the elevator system in conformance with NFPA 72 indicating the floors to be evacuated. The floors to be evacuated shall be a contiguous block of floors, consisting of at least the floor with an active alarm, two floors above and two floors below. The elevator system shall initiate Occupant Evacuation Operation in accordance with 2.27.10.6 for the indicated floors. If activation of an automatic fire alarm initiating device which does not initiate Phase I recall in this group occurs on an additional floor(s) at any time while Occupant Evacuation Operation in accordance with 2.27.10.6 is in effect, the evacuation zone shall be expanded to include all floors with an active alarm, all floors between the highest and lowest floor with an active alarm plus two floors above the highest floor with an active alarm and two floors below the lowest floor with an active alarm. If the active alarm is on the elevator discharge level, automatic initiation of Occupant Evacuation Operation in accordance with 2.27.10.6 shall not be permitted. Manual initiation by authorized or emergency personnel shall be permitted.

Note (2.27.10.5.1): An active alarm refers to the condition caused by the "activation of an automatic fire alarm initiating device" as used in this requirement.

2.27.10.5.2 A means to initiate total building evacuation, labeled "ELEVATOR TOTAL BUILDING EVACUATION" shall be provided at the fire command center location and installed in accordance with NFPA 72. When this means is actuated, the fire alarm system shall provide a signal to the elevator system indicating that all floors are to be evacuated.

2.27.10.6 When any of the signals provided in 2.27.10.5 actuate, the elevators shall conform to 2.27.10.6.1 through 2.27.10.6.10 in order to move occupants from the floors affected by the fire to the elevator discharge level.

2.27.10.6.1 The variable message signs required by 2.27.10.2 shall indicate one of the following messages:

- (a) On all floors being evacuated, they shall indicate that the elevators are available for evacuation and the estimated time duration in minutes for the next elevator to arrive.
Note: Sample text: "Elevators and stairs available for evacuation. Next car in about 2 minutes".
- (b) On all floors not being evacuated, they shall indicate that elevator service is not available.
Note: Sample text: "Elevators temporarily dedicated to other floors".

(c) On the elevator discharge level, they shall indicate that the cars are in evacuation mode and that passengers should not use elevators.

Note (2.27.10.6.1): Sample text: "Elevators dedicated to evacuation. Do not enter elevator".

(d) If no elevators are available for Occupant Evacuation Operation (Fire service, inspection, shut off, etc.), they shall indicate that elevator service is not available. On all floors being evacuated they shall also indicate that occupants should use the stairs.

Note: Sample text for floors being evacuated: "Elevators out of service. Use stairs to evacuate". Sample text for other floors: "Elevators out of service".

2.27.10.6.2 Automatic visual signal or variable message sign, and voice notification in each car shall indicate that the car is being used to evacuate the building. In the event that the car stops to pick up passengers at a floor other than the elevator discharge level, the signals shall instruct the passengers to remain in the car. Upon or prior to arrival at the elevator discharge level, passengers shall be notified that they have arrived at the exit floor and to exit quickly. Message text shall be a minimum of 25 mm (1 in) high and conform to A117.1 or Appendix E requirement E-20, whichever is applicable (see Section 9 and E-1). Voice notification shall be at least 10 dBA above ambient but not more than 80 dBA measured 1525 mm (60 in) above the floor, at the center of the car.

2.27.10.6.3 All landing calls outside of the contiguous block of floors being evacuated shall be canceled and disabled. Building security systems which limit service to these floors shall be overridden. Any landing call within the contiguous block of floors shall call an elevator(s) to that landing. Landing calls entered at the floor with an active alarm shall be given higher priority than the calls at the floors above and below it. If a subsequent active alarm is received from a different floor, the evacuation priority shall be assigned in the sequence received. Once passengers have entered an elevator, it shall proceed only towards the elevator discharge level. When total building evacuation is in effect and no calls are entered at an affected floor, priority shall be based on distance from the elevator discharge level, with the furthest floor served getting highest priority.

2.27.10.6.4 Car calls for all floors, except for the elevator discharge level, shall be canceled and disabled. A car call for the elevator discharge level shall be automatically entered when any landing call is answered.

2.27.10.6.5 Cars which are unoccupied when Occupant Evacuation Operation is actuated shall move without delay to a floor which is being evacuated, and park with their doors closed until a landing call is registered. If the car is in motion away from the floors being evacuated, it shall stop at or before the next available floor, without opening the doors, reverse direction and move to a floor which is being evacuated.

2.27.10.6.6 Cars which are occupied when Occupant Evacuation Operation is actuated shall proceed without delay to the elevator discharge level. If a reversal of travel direction is needed, it shall be done at or before the next available floor without opening the doors. After opening and closing the doors at the elevator discharge level, they shall proceed without delay to a floor which is being evacuated and park with their doors closed until a landing call is registered.

2.27.10.6.7 When a car answers a landing call at a floor being evacuated, a car call for the elevator discharge level shall be automatically registered. The system shall accept a new landing call as soon as the doors have opened to permit loading at that floor, or sooner. If a new landing call is registered at this floor, it shall be assigned to another car, and not canceled until that car arrives. Actuation of the landing call device shall not prevent a loaded car from closing its doors and leaving the floor.

2.27.10.6.8 While passengers are entering the car at a floor being evacuated, when the load reaches no greater than 80% of car capacity, the door re-opening device(s) shall be disabled and the doors shall initiate closing at reduced kinetic energy in accordance with 2.13.4.2.1(c). If the doors stall while closing, they shall re-open fully, then close. An audible signal shall sound until the doors are closed. If the load exceeds 100% of capacity the doors shall re-open and remain open and a voice notification and visual signal shall indicate that the car is overloaded.

2.27.10.6.9 Once the block of floors being evacuated has been evacuated, as indicated by a 60 second period in which no landing calls are registered, one car shall park with its doors closed at the lowest floor of the block of floors ready to answer subsequent landing calls within the block of floors; the rest shall park with doors closed at the elevator discharge level. A car parked at the elevator discharge level shall replace the car at the lowest floor of the block, which has answered a landing call.

2.27.10.6.10 Occupant Evacuation Operation shall be terminated when the fire alarm system is reset or the signals provided in 2.27.3.2 are actuated (see 2.27.10.1.3).

i Approved 2011 by the ASME A17 Standards Committee for ASME A17.1-2013/CSA B44-13; subject to ANSI and ASME Board Approval. Provided for informational purposes and does not indicate endorsement by ASME or its Committees of proposed changes to the ICC *International Building Code*.

Cost Impact: This code change proposal will not increase construction costs.

G183-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3008.7.6-G-BLACK.doc

G184 – 12

3008.7.7.1, 3008.7.7.2

Proponent: Jerome Seville, Commonwealth of Pennsylvania representing self

Revise as follows:

3008.7.7 Two-way communication system. A two-way communication system shall be provided in each occupant evacuation elevator lobby for the purpose of initiating communication with the *fire command center* or an alternate location *approved* by the fire department.

3008.7.7.1 Design and installation. The two-way communication system shall be provided and installed in accordance with Section 1007.8 ~~include audible and visible signals and shall be designed and installed in accordance with the requirements in ICC A117.1.~~

3008.7.7.2 Instructions. ~~Instructions for the use of the two-way communication system along with the location of the station shall be permanently located adjacent to each station. Signage shall comply with the ICC A117.1 requirements for visual characters.~~

Reason: The revision will help make sure that the two way communication system requirements will remain consistent over time. The provisions currently in 1007.8 are more complete. The reference to ICC A117.1 will be picked up through the controls requirements in 1109.13 and the signage requirement currently in 1110.3.

Cost Impact: The proposed changes will not increase the cost of construction.

G184-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3008.7.7-G-Seville.doc

G185 – 12

3008.9

Proponent: Brian Black, BDBlack Codes, Inc., representing National Elevator Industry Inc.
(bdbblack@neii.org)

Revise as follows:

3008.9 Electrical power. The following features serving each occupant evacuation elevator shall be supplied by both normal power and Type 60/Class 2/Level 1 standby power:

1. Elevator equipment.
3. ~~Elevator machine room~~ *Ventilation* and cooling equipment for elevator machine/control rooms, and machinery/control spaces.
4. ~~Elevator controller cooling equipment~~ car lighting.

Reason: Editorial changes in item 2 reflect current terminology in ASME A17.1/CSA B44. Standby power is necessary for elevator car lighting as specified in item 3 to ensure that occupants are not trapped in a pitch-black elevator in case the building power is interrupted.

Cost Impact: This code change proposal will not increase the cost of construction.

G185-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3008.9-G-BLACK.doc

G186 – 12

202, 3102.1, Chapter 35

Proponent: Jennifer Goupil P.E., The Structural Engineering Institute of ASCE, representing herself (jgoupil@asce.org)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Revise as follows:

3102.1 General. The provisions of Sections 3102.1 through 3102.8 shall apply to air-supported, air-inflated, membrane covered cable, ~~and~~ membrane-covered frame structures, and tensile membrane structures, collectively known as membrane structures, erected for a period of 180 days or longer. Those erected for a shorter period of time shall comply with the *International Fire Code*. Membrane structures covering water storage facilities, water clarifiers, water treatment plants, sewage treatment plants, greenhouses and similar facilities not used for human occupancy are required to meet only the requirements of Sections 3102.3.1 and 3102.7. Membrane structures erected on a building, balcony, deck or other structure for any period of time shall comply with this section.

Add new definition as follows:

TENSILE MEMBRANE STRUCTURE. A membrane structure having a shape that is determined by tension in the membrane and the geometry of the support structure. Typically, the structure consists of both flexible elements (e.g. membrane and cables), non-flexible elements (e.g. struts, masts, beams and arches) and the anchorage (e.g. supports and foundations). This includes Frame-supported tensile membrane structures.

Add new standard to Chapter 35 as follows:

ASCE/SEI
ASCE/SEI 55—10 Tensile Membrane Structures

Reason: This change proposes to add the new referenced standard *ASCE 55 Tensile Membrane Structures*. This Standard provides minimum criteria for the design and performance of tensile membrane cable and rigid member structures, including frame structures, collectively known as tensile membrane structures, including permanent and temporary structures as defined herein. The requirements of this Standard shall apply whether the tensile membrane structure is independent of or attached to another structure. This Standard does not apply to air-supported or air-inflated structures.

In addition to the scope and definitions, the Standard includes chapters on membrane materials, connections, design, fabrication and erection, as well as appendices for special provisions and a procedure for determining modulus of elasticity.

ASCE/SEI 55 is published and maintained by the Structural Engineering Institute of the American Society of Civil Engineers (SEI/ASCE). The document is a nationally recognized consensus standard developed in full compliance with the *ASCE Rules for Standards Committees*. The ASCE standards process is fully accredited by the American National Standards Institute (ANSI).

The document is designated ASCE/SEI 55-10 *Tensile Membrane Structures* and it is currently available for purchase from ASCE. Any person interested in obtaining a public comment copy of ASCE/SEI 55 may do so by contacting the proponent at jgoupil@asce.org. A copy of the standard has been submitted with this proposal.

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, ASCE/SEI 55-10 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2012.

G186-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-TENSILE MEMBRANE STRUCTURE (NEW)-G-GOUPIL

G187 –12

3102.7.1 (NEW)

Proponent: John Gross (john.gross@nist.gov) and Fahim Sadek (fahim.sadek@nist.gov), National Institute of Standards and Technology (NIST), Department of Commerce (NIST)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Add new text as follows:

3102.7.1 Membrane. For membrane-covered frame structures, the membrane shall not be considered to provide lateral restraint in the calculation of the capacities of the frame members.

Reason: This proposal is one of three submitted on the basis of the National Institute of Standards and Technology (NIST) study of the collapse of the Dallas Cowboys Indoor Practice Facility of May 2, 2009 (Gross et al., 2010). In its study of the collapse of the Dallas Cowboys Indoor Practice Facility, a membrane-covered frame structure, NIST found that the facility was designed assuming that the tensioned exterior membrane provided lateral bracing for the frames. Had the building been designed assuming that the membrane would not provide lateral restraint, the design capacity for some frame members would have been 46 % of the capacity based on the assumption that the membrane provides full lateral restraint (see Table 5-5 of Gross et al., 2010)?

A review of the state of the practice indicated that there is some disparity among designers of membrane-covered frame structures regarding the contribution of the membrane to the stability of the frame members: some designers rely on the membrane to provide lateral support to the frames, while others do not. The amount of lateral restraint provided by the membrane depends on the stiffness and strength of the membrane which are not well quantified over the lifespan of the membrane. The degree of lateral restraint also depends on the level of tension in the membrane, which is uncertain since it is a function of the initial tensioning and maintenance procedure over the life of the membrane. A particular concern is the susceptibility of the fabric material to tearing due to a variety of reasons such as wind-borne debris during windstorms, accidental cuts during installation or maintenance, or degradation of the fabric tear strength due to environmental conditions including ultraviolet exposure. In such cases, tearing of the fabric would compromise the stability of the structural frames, which would in turn threaten the integrity of the entire structural system. In addition, tears in the fabric could introduce unbalanced lateral loads on the frame members. As a result, not considering the membrane to provide lateral restraint to the framing of the building is appropriate and justifiable on the basis of the factors mentioned herein.

Bibliography:

Gross, J.L., Main, J.A., Phan, L.T., Sadek, F., Cauffman, S.A., and Jorgensen, D.P., (2010), Final Report on the Collapse of the Dallas Cowboys Indoor Practice Facility, May 2, 2009, NISTIR 7661, Gaithersburg, MD, January.

Cost Impact: The code change proposal will increase the cost of construction. This proposed change may require an increase in capacity for some structural members subjected to compression. This increase will result in moderate increase in the overall cost of construction. It is believed that such a cost impact is justified on the basis of occupant safety.

G187-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3102.7.1-G-GROSS-SADEK.doc

G188 – 12

3102.7.2 (NEW)

Proponent: John Gross (john.gross@nist.gov) and Fahim Sadek (fahim.sadek@nist.gov), National Institute of Standards and Technology (NIST), Department of Commerce (NIST)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Add new test as follows:

3102.7.2 Enclosure Classification. For membrane-covered frame structures, the building shall not be classified as “enclosed” as defined in ASCE 7 for determining the internal wind pressure coefficient for the calculation of wind loads on the main wind force resisting system.

Reason: This proposal is one of three submitted on the basis of the National Institute of Standards and Technology (NIST) study of the collapse of the Dallas Cowboys Indoor Practice Facility of May 2, 2009 (Gross et al., 2010).

In its study of the collapse of the Dallas Cowboys Indoor Practice Facility, a membrane-covered frame structure, NIST found that the facility was designed based on an “enclosed” classification for the purpose of calculating internal wind pressures, despite the presence of vent and door openings around the building perimeter that would result in a classification as partially enclosed (if the vents were even partially open). During the windstorm that led to the failure of the building, videographic records showed that at least one roll-up door failed to remain closed as a result of building distortion (see Figure 3-3 of Gross et al., 2010). Had the building been designed on the basis of a “partially enclosed” classification, the design demand for some frame members would have been 42 % higher than the demand based on the “enclosed” classification used in the design of the facility (see Table 5-4 of Gross et al., 2010).

In addition to the presence of vents and openings around the perimeter of the building, membrane-covered frame structures may be flexible, and large deformations of the building frames during wind events can render doors open, potentially resulting in a partially enclosed condition. Furthermore, a variety of circumstances, such as wind-borne debris, could cause the membrane to tear, which could result in higher internal pressures during windstorms than those obtained if the membrane covering remained intact. As a result, using the more conservative “partially enclosed” classification for calculating the internal wind pressures for these buildings is appropriate and justifiable on the basis of the factors mentioned above.

Bibliography:

Gross, J.L., Main, J.A., Phan, L.T., Sadek, F., Cauffman, S.A., and Jorgensen, D.P., (2010), Final Report on the Collapse of the Dallas Cowboys Indoor Practice Facility, May 2, 2009, NISTIR 7661, Gaithersburg, MD, January.

Cost Impact: The code change proposal will increase the cost of construction. This proposed change may require an increase in capacity for some structural members. This increase will result in moderate increase in the overall cost of construction. It is believed that such a cost impact is justified on the basis of occupant safety.

G188-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3102.7.2-G-GROSS-SADEK.doc

G189 – 12

3102.7.3 (NEW)

Proponent: John Gross (john.gross@nist.gov) and Fahim Sadek (fahim.sadek@nist.gov), National Institute of Standards and Technology (NIST), Department of Commerce (NIST)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Add new text as follows:

3102.7.3 Structural Integrity. Membrane-covered frame structures shall be designed such that failure of a frame member does not result in the overall collapse of the structure. The membrane shall not be considered to provide lateral bracing necessary for overall structural integrity.

Reason: This proposal is one of three submitted on the basis of the National Institute of Standards and Technology (NIST) study of the collapse of the Dallas Cowboys Indoor Practice Facility of May 2, 2009 (Gross et al., 2010).

In its study of the collapse of the Dallas Cowboys Indoor Practice Facility, a membrane-covered frame structure, NIST found that while the collapse of the facility initiated with overloading of one or more structural frames, these failures led to a total collapse of the practice facility. This suggests that the adequacy of the structural system, including the lateral bracing, to maintain overall structural integrity of membrane-covered frame structures should be evaluated. The membrane should not be relied upon to provide overall lateral bracing to the structure due to its susceptibility to tearing due to a variety of reasons such as wind-borne debris during windstorms, accidental cuts during installation or maintenance, or degradation of the fabric tear strength due to environmental conditions including ultraviolet exposure.

Bibliography:

Gross, J.L., Main, J.A., Phan, L.T., Sadek, F., Cauffman, S.A., and Jorgensen, D.P., (2010), Final Report on the Collapse of the Dallas Cowboys Indoor Practice Facility, May 2, 2009, NISTIR 7661, Gaithersburg, MD, January.

Cost Impact: The code change proposal will increase the cost of construction. This proposed change may require an increase in capacity for some structural members. This increase will result in moderate increase in the overall cost of construction. It is believed that such a cost impact is justified on the basis of occupant safety.

G189-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

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G190 – 12

3103.1.1 (NEW)

Proponent: Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee (BCAC)

Add new text as follows:

3103.1.1 Conformance. Temporary structures and uses shall conform to the structural strength, fire safety, means of egress, accessibility, light, ventilation and sanitary requirements of this code as necessary to ensure public health, safety and general welfare.

Reason: This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

The International Code Council's Building Code Action Committee was asked to look at adding structural provisions and requirements for temporary structures. In the current code, the administrative requirements for temporary structures are located in section 108 while the technical requirements are in section 3103. In reviewing the existing code, it was the opinion of the BCAC that the two sections in the current code sufficiently address the requirements. However, the BCAC did determine that section 108.2, "Conformance", was more technical than administrative and that a code user may not be aware of those requirements when looking at section 3103 for the technical requirements. To address this and to avoid potential confusion or oversight, the BCAC proposes moving the technical language of section 108.2 to section 3103.1.1.

Cost Impact: The code change will not increase the cost of construction.

G190-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3103.1.1 (NEW)-G-BAJNAI.doc

G191 – 12

3104.1.1 (NEW), 3104.2, 3104.5

Proponent: Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee (BCAC)

Revise as follows:

3104.1 General This section shall apply to connections between buildings such as *pedestrian walkways* or tunnels, located at, above or below grade level, that are used as a means of travel by persons. The *pedestrian walkway* shall not contribute to the *building area* or the number of *stories* or height of connected buildings.

3104.1.1 Application. Pedestrian walkways shall be designed and constructed in accordance with Sections 3104.2 through 3104.9. Tunnels shall be designed and constructed in accordance with Section 3104.2 and 3104.10.

3104.2 Separate structures. ~~Connected Buildings~~ connected by pedestrian walkways or tunnels shall be considered to be separate structures.

Exceptions:

1. Buildings ~~that are~~ on the same *lot* and ~~considered as portions of a single building in accordance with Section 503.1.2~~ shall be considered a single structure.
2. For purposes of calculating the number of Type B units required by Chapter 11, structurally connected buildings and buildings with multiple wings shall be considered one structure.

3104.3 Construction. (No proposed changes)

3104.4 Contents. (No proposed changes)

3104.5 Fire barriers between Connections of pedestrian walkways and to buildings. The connection of a pedestrian walkway to a building shall comply with any one of the following: Section 3104.5.1, 3104.5.2, 3104.5.3 or 3104.5.4.

Exception: Buildings that are on the same lot and considered as portions of a single building in accordance with Section 503.1.2.

3104.5.1 Fire Barriers. Pedestrian walkways shall be separated from the interior of the building by not less than 2-hour fire barriers constructed in accordance with Section 707 and Sections 3104.5.1.1 through 3104.5.1.3. ~~or horizontal assemblies constructed in accordance with Section 711, or both.~~

3104.5.1.1 Exterior walls. Exterior walls of buildings connected to pedestrian walkways shall be 2-hour fire-resistance-rated. This protection shall extend not less than vertically from a point 10 feet (3048 mm) in every direction surrounding the perimeter of the pedestrian walkway, above the walkway roof surface or the connected building roof line, whichever is lower, down to a point 10 feet (3048 mm) below the walkway and horizontally 10 feet (3048 mm) from each side of the pedestrian walkway.

3104.5.1.2. Openings in exterior walls of connected building. Openings within the 10-foot (3048 mm) horizontal extension of the protected walls beyond the walkway in exterior walls required to be fire-resistance rated in accordance with Section 3104.5.1.1 shall be equipped with devices opening protectives providing a minimum 3/4-hour fire protection rating in accordance with Section 716.

3104.5.1.3 Supporting Construction. The fire barrier shall be supported by construction as required by Section 707.5.1.

Exception: The walls separating the *pedestrian walkway* from a connected building and the openings within the 10-foot (3048 mm) horizontal extension of the protected walls beyond the walkway are not required to have a *fire-resistance rating* by this section where any of the following conditions exist:

1. ~~The distance between the connected buildings is more than 10 feet (3048 mm). The *pedestrian walkway* and connected buildings, except for *open parking garages*, are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.~~

3104.5.2. Alternative separation. The wall separating the pedestrian walkway and the building shall comply with Section 3104.5.2.1 or 3104.5.2.2 when:

1. The distance between the connected buildings is more than 10 feet (3048 mm)
2. The *pedestrian walkway* and connected buildings, are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, and the roof of the walkway is not more than 55 feet above grade connecting to the fifth, or lower, story above grade plain, of each building

Exception: Open parking garages need not be equipped with an automatic sprinkler system.

3104.5.2.1 Passage of smoke. ~~The wall is shall be capable of resisting the passage of smoke, or is constructed of a tempered, wired or laminated glass wall and doors subject to the following:~~

- 1.1. ~~The wall or glass separating the interior of the building from the *pedestrian walkway* shall be protected by an *automatic sprinkler system* in accordance with Section 903.3.1.1 and the sprinkler system shall completely wet the entire surface of interior sides of the wall or glass when actuated;~~
- 1.2. ~~The glass shall be in a gasketed frame and installed in such a manner that the framing system will deflect without breaking (loading) the glass before the sprinkler operates; and~~
- 1.3. ~~Obstructions shall not be installed between the sprinkler heads and the wall or glass.~~

3104.5.2.2 Glass. The wall shall be constructed of a tempered, wired or laminated glass wall and doors or glass separating the interior of the building from the *pedestrian walkway*. The glass shall be protected by an *automatic sprinkler system* in accordance with Section 903.3.1.1, that, when actuated, shall completely wet the entire surface of interior sides of the wall or glass. Obstructions shall not be installed between the sprinkler heads and the wall or glass. The glass shall be in a gasketed frame and installed in such a manner that the framing system will deflect without breaking (loading) the glass before the sprinkler operates.

2. **3104.5.3 Open sides on walkway.** Where the distance between the connected buildings is more than 10 feet (3048 mm) the walls at the intersection of the pedestrian walkway and each building need not be fire-resistance rated provided and both sidewalls of the *pedestrian walkway* are not less than 50 percent open with the open area uniformly distributed to prevent the accumulation of smoke and *toxic* gases. The roof of the walkway shall be located not more than 40 ft. above grade plane, and the walkway shall only be permitted to connect to the third or lower story of each building.

Exception: Where the pedestrian walkway is protected with a sprinkler system in accordance with Section 903.3.1.1, the roof of the walkway shall be located not more than 55 ft. above grade plane, and the walkway shall only be permitted to connect to the fifth or lower story of each building.

3. ~~Buildings are on the same lot in accordance with Section 503.1.2.~~

4. **3104.5.4 Exterior walls greater than 2 hours.** Where exterior walls of connected buildings are required by Section 705 to have a *fire-resistance rating* greater than 2 hours, the *pedestrian walkway* shall:

1. Be equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1, and
2. Have the roof of the walkway located not more than 55 feet above grade plane, and the walkway shall only be permitted to connect to the fifth, or lower, story above grade plane, of each building.

~~The previous exception shall apply to pedestrian walkways having a maximum height above grade of three stories or 40 feet (12 192 mm), or five stories or 55 feet (16 764 mm) where sprinklered.~~

Reason: This proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

The purpose of this code change proposal is to reorganize the provisions of Section 3104.5, regarding the separation options for pedestrian walkways from the buildings they connect. At present, Section 3104.5 relies upon a group of exceptions to provide the requirements for various options for separation of a pedestrian walkway from the buildings to which it is connected. The intent of this proposal is not make any modifications to these technical requirements; it simply writes the section in a format that logically lays out the options available in a direct manner, rather than as exceptions. This is, in our opinion, less confusing.

In addition, an editorial change was made to the two exceptions regarding buildings on the same lot. Section 503.1.2 states that two buildings on the same lot can be treated as separate buildings, or as portions of a single building. These exceptions were always intended to refer to the segment of Section 503.1.2 where two buildings are considered portions of a single building. The exceptions were rewritten to make that clear.

Finally, the existing language is unclear regarding the protection provided under the provisions now numbered 3104.5.1. Existing text states that the separation between the building and the walkway is to be a fire barrier and it then implies the fire barrier extends to the surrounding exterior walls. As fire barriers are an internal element and not an exterior wall element, the provisions of 3104.5 are revised to clarify how the 'protection' continues surrounding the walkway. Section 3104.5.1.3, while it appears to be a new provision, is merely a reminder of the requirements for supporting construction found in Section 707. Providing the reference will provide more consistent application.

Cost Impact: None.

G191-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3104.1-G-BAJNAI-BCAC.doc

G192 – 12

3105.4

Proponent: Lee J. Kranz, City of Bellevue, WA, representing Washington Association of Building Officials Technical Code Development (lkranz@bellevuewa.gov)

Revise as follows:

3105.4 Awning and canopy materials. ~~Awnings and canopies shall be constructed of a rigid framework~~ provided with an *approved* covering that meets the fire propagation performance criteria of NFPA 701 or has a *flame spread index* not greater than 25 when tested in accordance with ASTM E 84 or UL 723.

Reason: The code does not currently provide a means for building officials to regulate the fire propagation performance and flame spread requirements for materials covering awnings afforded for canopies. This is resolved by adding “awnings” to this section. The words “constructed of a rigid framework...” is deleted as it is already included in the definitions of awning and canopy.

Cost Impact: This code change will not increase the cost of construction.

G192-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3105.4-G-KRANZ.doc

G193 – 12

PART I – INTERNATIONAL BUILDING CODE

202, 303.4 (IFC 202), 303.5 (IFC 202), 507.6, 507.7, Table 1004.1.2 (IFC [B] Table 1004.1.2), 1808.7.3, 2406.4.5, 2609.4, 3109, 3102.8.3, G801.5

PART II – INTERNATIONAL MECHANICAL CODE

202, 403.2.1, Table 403.3, 916, Table 916, 1401.1

PART III – INTERANTIONAL FUEL GAS CODE

202, 617.1

PART IV – INTERNATIONAL PLUMBING CODE

IPC 202, 423.1, 612.1, 801.1, 802.1.4; IPSDC 202 401.3.2, Table 406.1, Table 604.1(2), Table 802.7.2, Table 802.8

Proponents: Kris Bridges, CBO, Chair, ICC Swimming Pool Code Drafting Committee (SPCDC) & Jennifer Hatfield, J. Hatfield & Associates, PL, representing the Association of Pool & Spa Professionals

THIS IS A 4 PART CODE CHANGE. PART ALL PARTS WILL BE HEARD BY THE IBC GENERAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC GENERAL CODE DEVELOPMENT COMMITTEE.

PART I – IBC GENERAL

Delete Section 3109 in its entirety and substitute as follows:

SECTION 3109 **AQUATIC VESSELS**

3109.1 General. The design and construction of aquatic vessels shall comply with the *International Swimming Pool and Spa Code*. The application of this section shall be limited in scope in accordance with Section 101.2.

Revise as follows:

303.4 Assembly Group A-3. Assembly uses intended for worship, recreation or amusement and other assembly uses not classified elsewhere in Group A including, but not limited to:

- Amusement arcades
- Art galleries
- Bowling alleys
- Community halls
- Courtrooms
- Dance halls (not including food or drink consumption)
- Exhibition halls
- Funeral parlors
- Gymnasiums (without spectator seating)
- Indoor ~~swimming pools~~ *aquatic vessels* (without spectator seating)
- Indoor tennis courts (without spectator seating)
- Lecture halls
- Libraries
- Museums
- Places of religious worship*
- Pool and billiard parlors
- Waiting areas in transportation terminals

303.5 Assembly Group A-4. Assembly uses intended for viewing of indoor sporting events and activities with spectator seating including, but not limited to:

- Arenas
- Skating rinks
- ~~Swimming pools~~ Aquatic vessels
- Tennis courts

Revise as follows:

507.6 Group A-3 buildings of Type II construction. The area of a Group A-3 building no more than one story above grade plane, used as a place of religious worship, community hall, dance hall, exhibition hall, gymnasium, lecture hall, indoor ~~swimming pool~~ aquatic vessel or tennis court of Type II construction, shall not be limited provided all of the following criteria are met:

1. The building shall not have a stage other than a platform.
2. The building shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
3. The building shall be surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

507.7 Group A-3 buildings of Types III and IV construction. The area of a Group A-3 building of Type III or IV construction, with no more than one story above grade plane, and used as a place of religious worship, community hall, dance hall, exhibition hall, gymnasium, lecture hall, indoor ~~swimming pool~~ aquatic vessel or tennis court, shall not be limited provided all of the following criteria are met:

1. The building shall not have a stage other than a platform.
2. The building shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
3. The assembly floor shall be located at or within 21 inches (533 mm) of street or grade level and all exits are provided with ramps complying with Section 1010.1 to the street or grade level.
4. The building shall be surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

Revise as follows:

**TABLE 1004.1.2 (IFC [B] TABLE 1004.1.2)
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT**

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR ^a
Skating rinks, swimming pools Rink and pool Decks	50 gross 15 gross
<u>Aquatic Vessels and Aquatic Recreation Facility</u>	<u>Occupant load factors shall be determined in accordance with the International Swimming Pools & Spa Code (ISPSC)</u>

(Portion of table not shown remains unchanged)

Revise as follows:

1808.7.3 Pools Aquatic vessels. The setback between ~~pools~~ aquatic vessels regulated by this code and slopes shall be equal to one-half the building footing setback distance required by this section. That portion of the ~~pool~~ aquatic vessel wall within a horizontal distance of 7 feet (2134 mm) from the top of the slope shall be capable of supporting the water in the ~~pool~~ aquatic vessel without soil support.

Revise as follows:

2406.4.5 Glazing and wet surfaces. Glazing in walls, enclosures or fences containing or facing hot tubs, spas, whirlpools, saunas, steam rooms, bathtubs, showers and indoor or outdoor ~~swimming pool~~ aquatic vessels where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) measured vertically above any standing or walking surface shall be considered a hazardous location. This shall apply to single glazing and all panes in multiple glazing.

Exception: Glazing that is more than 60 inches (1524 mm), measured horizontally and in a straight line, from the water's edge of a bathtub, ~~hot tub, spa, whirlpool, or swimming pool~~ or aquatic vessel.

Revise as follows:

2609.4 Area limitations. Roof panels shall be limited in area and the aggregate area of panels shall be limited by a percentage of the floor area of the room or space sheltered in accordance with Table 2609.4.

Exceptions:

1. The area limitations of Table 2609.4 shall be permitted to be increased by 100 percent in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. Low-hazard occupancy buildings, such as ~~swimming pool~~ aquatic vessel shelters, shall be exempt from the area limitations of Table 2609.4, provided that the buildings do not exceed 5,000 square feet (465 m²) in area and have a minimum fire separation distance of 10 feet (3048 mm).
3. Greenhouses that are occupied for growing plants on a production or research basis, without public access, shall be exempt from the area limitations of Table 2609.4 provided they have a minimum fire separation distance of 4 feet (1220 mm).
4. Roof coverings over terraces and patios in occupancies in Group R-3 shall be exempt from the area limitations of Table 2609.4 and shall be permitted with light-transmitting plastics.

Revise as follows:

3102.8.3 Support provisions. A system capable of supporting the membrane in the event of deflation shall be provided for in air-supported and air-inflated structures having an *occupant load* of 50 or more or where covering ~~a swimming pool~~ an aquatic vessel regardless of *occupant load*. The support system shall be capable of maintaining membrane structures used as a roof for Type I construction not less than 20 feet (6096 mm) above floor or seating areas. The support system shall be capable of maintaining other membranes not less than 7 feet (2134 mm) above the floor, seating area or surface of the water.

Add new definition as follows:

SECTION 202 DEFINITIONS

AQUATIC RECREATION FACILITY. A facility that is designed for free-form aquatic play and recreation. The facilities may include, but are not limited to, wave or surf action pools, leisure rivers, sand bottom pools, vortex pools, *activity pools*, *tube rides* and body slides, and interactive play attractions.

AQUATIC VESSEL. Any vessel, permanent or temporary, intended for swimming, bathing, or wading and that is designed and manufactured to be connected to a *circulation system*. Portable vessels 12 inches or less in designed water depth which are drained and filled daily are not considered *aquatic vessels*. For purposes of this code, the term is used to identify all the types of vessels governed by this code, including: swimming pools, aquatic facilities, *spas* and hot tubs, and related equipment. Such vessels are either used in a *residential* application or in a public application.

Delete without substitution:

~~**G801.5 Prefabricated swimming pools.** Prefabricated swimming pools in *floodways* shall meet the requirements of Section G103.5.~~

PART II – IMC

Revise as follows:

IMC 403.2.1 Recirculation of air. The outdoor air required by Section 403.3 shall not be recirculated. Air in excess of that required by Section 403.3 shall not be prohibited from being recirculated as a component of supply air to building spaces, except that:

1. Ventilation air shall not be recirculated from one dwelling to another or to dissimilar occupancies.
2. Supply air to a ~~swimming pool~~ aquatic vessel and associated deck areas shall not be recirculated unless such air is dehumidified to maintain the relative humidity of the area at 60 percent or less. Air from this area shall not be recirculated to other spaces where more than 10 percent of the resulting supply airstream consists of air recirculated from these spaces.
3. Where mechanical exhaust is required by Note b in Table 403.3, recirculation of air from such spaces shall be prohibited. All air supplied to such spaces shall be exhausted, including any air in excess of that required by Table 403.3.
4. Where mechanical exhaust is required by Note g in Table 403.3, mechanical exhaust is required and recirculation is prohibited where more than 10 percent of the resulting supply airstream consists of air recirculated from these spaces.

**IMC TABLE 403.3
MINIMUM VENTILATION RATES**

OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE R _a CFM/FT ^{2a}	DEFAULT OCCUPANT DENSITY #/1000 FT ^{2a}	EXHAUST AIRFLOW RATE CFM/FT ^{2a}
Sports and amusement Swimming pools <u>Aquatic vessels</u> (pool and deck area)	--	0.48	--	--

**IMC SECTION 916
POOL AND SPA AQUATIC VESSEL HEATERS**

IMC 916.1 General. ~~Pool and spa~~ Aquatic vessel heaters shall be installed in accordance with the manufacturer's installation instructions. Oil-fired ~~pool and spa~~ aquatic vessel heaters shall be tested in accordance with UL 726. Electric ~~pool and spa~~ aquatic vessel heaters shall be tested in accordance with UL 1261.

IMC 1401.1 Scope. This chapter shall govern the design, construction, installation, alteration and repair of systems, equipment and appliances intended to utilize solar energy for space heating or cooling, domestic hot water heating, ~~swimming pool~~ aquatic vessel heating or process heating.

Add new definition as follows: (Same definition as in IBC)

IMC SECTION 202 DEFINITIONS

AQUATIC VESSEL. Any vessel, permanent or temporary, intended for swimming, bathing, or wading and that is designed and manufactured to be connected to a *circulation system*. Portable vessels 12 inches or less in designed water depth which are drained and filled daily are not considered *aquatic vessels*. For purposes of this code, the term is used to identify all the types of vessels governed by this code, including: swimming pools, aquatic facilities, *spas* and hot tubs, and related equipment. Such vessels are either used in a *residential* application or in a public application.

PART III – IFGC

Revise as follows:

IFGC SECTION 617 POOL AND SPA AQUATIC VESSEL HEATERS

IFGC 617.1 General. Pool and spa Aquatic vessel heaters shall be tested in accordance with ANSI Z21.56 and shall be installed in accordance with the manufacturer's installation instructions.

Add new definition as follows: (Same definition as in IBC)

IFGC SECTION 202 DEFINITIONS

AQUATIC VESSEL. Any vessel, permanent or temporary, intended for swimming, bathing, or wading and that is designed and manufactured to be connected to a *circulation system*. Portable vessels 12 inches or less in designed water depth which are drained and filled daily are not considered *aquatic vessels*. For purposes of this code, the term is used to identify all the types of vessels governed by this code, including: swimming pools, aquatic facilities, *spas* and hot tubs, and related equipment. Such vessels are either used in a *residential* application or in a public application.

PART IV – IPC/IPSDC

Revise as follows:

IPC 423.1 Water connections. Baptisteries, ornamental and lily pools, aquariums, ornamental fountain basins, ~~swimming pools~~ aquatic vessels, and similar constructions, where provided with water supplies, shall be protected against backflow in accordance with Section 608.

IPC 612.1 Solar systems. The construction, installation, alterations and repair of systems, equipment and appliances intended to utilize solar energy for space heating or cooling, domestic hot water heating, ~~swimming pool~~ aquatic vessel heating or process heating shall be in accordance with the International Mechanical Code.

IPC 801.1 Scope. This chapter shall govern matters concerning indirect waste piping and special wastes. This chapter shall further control matters concerning food-handling establishments, sterilizers, clear-water wastes, ~~swimming pools~~ aquatic vessels, methods of providing air breaks or air gaps, and neutralizing devices for corrosive wastes.

IPC 802.1.4 ~~Swimming pools~~ Aquatic vessels. Where wastewater from ~~swimming pools~~ aquatic vessels, backwash from filters and water from ~~pools~~ aquatic vessel deck drains discharge to the building drainage system, the discharge shall be through an indirect waste pipe by means of an air gap.

Delete and substitute definition as follows: (Same definition as in IBC)

**IPC SECTION 202
DEFINITIONS**

SWIMMING POOL. Any structure, basin, chamber or tank containing an artificial body of water for swimming, diving or recreational bathing having a depth of 2 feet (610 mm) or more at any point.

AQUATIC VESSEL. Any vessel, permanent or temporary, intended for swimming, bathing, or wading and that is designed and manufactured to be connected to a *circulation system*. Portable vessels 12 inches or less in designed water depth which are drained and filled daily are not considered *aquatic vessels*. For purposes of this code, the term is used to identify all the types of vessels governed by this code, including: swimming pools, aquatic facilities, spas and hot tubs, and related equipment. Such vessels are either used in a *residential* application or in a public application.

Revise IPSDC as follows:

IPSDC 401.3.2 Undisturbed site. The replacement system shall not be disturbed to the extent that the site area is no longer suitable. The replacement system area shall not be used for construction of buildings, parking lots or parking areas, below-ground ~~swimming pools~~ aquatic vessels or any other use that will adversely affect the replacement area.

**IPSDC TABLE 406.1
MINIMUM HORIZONTAL SEPARATION DISTANCES FOR SOIL ABSORPTION SYSTEMS**

ELEMENT	DISTANCE (feet)
Swimming Pool <u>Aquatic vessel</u>	15

(Portions of table not shown remain unchanged)

**IPSDC TABLE 604.1(2)
CONVERSION FACTOR**

BUILDING CLASSIFICATION	UNITS	FACTOR
Swimming pool <u>Aquatic vessel</u> bathhouse	1 per person	0.2

(Portions of table not shown remain unchanged)

**IPSDC TABLE 802.7.2
ADDITIONAL CAPACITY FOR OTHER BUILDINGS**

BUILDING CLASSIFICATION	CAPACITY (GALLONS)
Swimming pool <u>Aquatic vessel</u> bathhouses (per person)	10

(Portions of table not shown remain unchanged)

**IPSDC TABLE 802.8
MINIMUM HORIZONTAL SEPARATION DISTANCES FOR TREATMENT TANKS**

ELEMENT	DISTANCE (feet)
Swimming pool <u>Aquatic vessel</u>	15

(Portions of table not shown remain unchanged)

Add new definition as follows: (Same definition as in IBC)

**IPSDC SECTION 202
DEFINITIONS**

AQUATIC VESSEL. Any vessel, permanent or temporary, intended for swimming, bathing, or wading and that is designed and manufactured to be connected to a *circulation system*. Portable vessels 12

inches or less in designed water depth which are drained and filled daily are not considered aquatic vessels. For purposes of this code, the term is used to identify all the types of vessels governed by this code, including: swimming pools, aquatic facilities, spas and hot tubs, and related equipment. Such vessels are either used in a residential application or in a public application.

Reason: 3109. When addressing pool safety provisions found in the new International Swimming Pool & Spa Code, reference to that code ensures consistency and provides additional pool and spa requirements that are important to follow for life safety reasons. By requiring in the IBC that aquatic vessels comply with the ISPSC, proper construction of the aquatic vessel will occur, providing the end user with a safe aquatic environment.

Table 1004.1.2. The new International Swimming Pool & Spa Code (ISPSC) provides occupant load requirements for aquatic recreation facilities (Table 608.1 of the ISPSC) and bather load requirements for public swimming pools (Table 403.1). In order to provide consistency between the I-codes, this proposal provides a new entry into Table 1004.1.2 that references you to the ISPSC requirements that provide a more detailed occupant load requirement based on what type of aquatic vessel and what area of the vessel is being considered.

202. The new International Swimming Pool & Spa Code (ISPSC) utilizes a new definition to encompass all different types of pools, hot tubs, and spas – aquatic vessel. The ISPSC also defines a public pool and an aquatic recreation facility, both of which fall under the IBC purview. This proposal revises the definitions in accordance with the terminology provided in the new ISPSC, in order to provide consistency between I-codes and clarity on what requirements apply to what type of aquatic vessels (see subsequent proposal regarding Table 1004.1.2 of the IBC for example). Further, the current definition excludes wading pools 18 feet deep from any requirements, this new language ensure these types of aquatic vessels are covered.

G801.5 . The new International Swimming Pool & Spa Code (ISPSC) does not define prefabricated swimming pools. Rather, it uses the terminology “aquatic vessel” (which is also being suggested for inclusion in the IBC definitions in a separate proposal). Under the new ISPSC, requirements for the design and construction of aquatic vessels installed in flood hazard areas are provided in Section 304. This language should be deleted due to the ISPSC flood hazard area requirements, and due to the fact a prefabricated swimming pool is not defined.

IMC,IFGC, IPC and IPSDC. The new International Swimming Pool & Spa Code (ISPSC) utilizes a new definition to encompass all different types of pools, hot tubs, and spas – aquatic vessel. This proposal utilizes the new terminology found in the ISPSC for consistency between the I-codes.

Cost Impact: The code change proposal will not increase the cost of construction.

G193-12

PART I – IBC GENERAL

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	D

PART II – IMC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	D

PART III – IFGC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	D

PART IV – IPC/IPSDC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

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G194 – 12

3109 (NEW), Chapter 35

Proponent: Carvin DiGiovanni, Association of Pool & Spa Professionals (cdigiovanni@apsp.org)

Delete entire Section 3109 and replace as follows:

~~SECTION 3109 SWIMMING POOL ENCLOSURES AND SAFETY DEVICES~~

SECTION 3109 AQUATIC VESSEL ENCLOSURES AND SAFETY DEVICES

3109.1 General. The provisions of this section shall apply to the design of barriers for all aquatic vessels. These design controls are intended to provide protection against the potential drowning and near drowning by restricting access to such vessels. These requirements provide an integrated level of protection against potential drowning through the use of physical barriers and warning devices.

Exceptions:

1. Spas and hot tubs with a lockable safety cover that complies with ASTM F1346.
2. Swimming pools with a powered safety cover that complies with ASTM F1346.

3109.2 Outdoor Swimming Pools. All outdoor aquatic vessels shall be surrounded by a barrier that complies with Sections 3109.2.1 through 3109.8.

3109.2.1 Barrier height and clearances. Barrier heights and clearances shall be in accordance with all the following:

1. The top of the barrier shall be not less than 48 inches (1219 mm) above grade where measured on the side of the barrier that faces away from the aquatic vessel. Such height shall exist around the entire perimeter of the vessel and for a distance of 3 feet (914 mm) where measured horizontally from the required barrier.
2. The vertical clearance between grade and the bottom of the barrier shall not exceed 2 inches (51 mm) for grade surfaces that are not solid, such as grass or gravel, where measured on the side of the barrier that faces away from the vessel.
3. The vertical clearance between a surface below the barrier to a solid surface, such as concrete, and the bottom of the required barrier shall not exceed 4 inches (102 mm) where measured on the side of the required barrier that faces away from the vessel.
4. Where the top of the vessel structure is above grade, the barrier shall be installed on grade or shall be mounted on top of the vessel structure. Where the barrier is mounted on the top of the vessel, the vertical clearance between the top of the vessel and the bottom of the barrier shall not exceed 4 inches (102 mm).

3109.2.2 Openings. Openings in the barrier shall not allow passage of a 4-inch-diameter (102 mm) sphere.

3109.2.3 Solid barrier surfaces. Solid barriers that do not have openings shall not contain indentations or protrusions that form handholds and footholds, except for normal construction tolerances and tooled masonry joints.

3109.2.4 Mesh restraining barrier/fence. Mesh fences, other than chain link fences in accordance with Section 3109.2.7, shall be installed in accordance with the manufacturer's instructions and shall comply with the following:

1. The bottom of the mesh restraining fence shall be not more than 1 inch (25 mm) above the deck or installed surface or grade.
2. The maximum vertical clearance from the bottom of the mesh fence and the solid surface shall not permit the fence to be lifted more than four (4) inches (102 mm) from grade or decking.
3. The fence shall be designed and constructed so that it does not allow passage of a 4-inch sphere under any mesh panel. The maximum vertical clearance from the bottom of the mesh fence and the solid surface shall not be more than four (4) inches (102 mm) from grade or decking.
4. An attachment device shall attach each barrier section at a height not lower than 45 inches (1143 mm) above grade. Common attachment devices include, but are not limited to, devices that provide the security equal to or greater than that of a hook-and-eye-type latch incorporating a spring-actuated retaining lever such as a safety gate hook.
5. Where a hinged gate is used with a mesh barrier, the gate shall comply with Section 3109.3.
6. Patio deck sleeves such as vertical post receptacles which are placed inside the patio surface shall be of a nonconductive material.
7. Mesh fences shall not be used on top of on ground residential pools.

3109.2.5 Closely spaced horizontal members. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches (1143 mm), the horizontal members shall be located on the aquatic vessel side of the fence. Spacing between vertical members shall not exceed 1.75 inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.

3109.2.6 Widely spaced horizontal members. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches (1143 mm) or more, spacing between vertical members shall not exceed 4 inches (102 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.

3109.2.7 Chain link dimensions. The maximum opening formed by a chain link fence shall be not more than 1.75 inches (44 mm). Where the fence is provided with slats fastened at the top and bottom which reduces the openings, such openings shall be not more than 1.75 inches (44 mm).

3109.2.8 Diagonal members. Where the barrier is composed of diagonal members, the maximum opening formed by the diagonal members shall be no more than 1.75 inches (44 mm). The angle of diagonal members shall not be greater than 45 degrees from vertical.

3109.2.9 Clear Zone. There shall be a clear zone of not less than 36 inches (914 mm) around the exterior of the barrier and around any permanent structures or equipment such as pumps, filters and heaters that can be used to climb the barrier.

3109.2.10 Poolside Barrier Setbacks. The aquatic vessel side of the required barrier shall be not less than 20 inches (508 mm) from the water's edge.

3109.3 Gates. Access gates shall comply with the requirements of Sections 3109.3.1 through 3109.3.3 and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from the vessel and shall be self-closing and have a self-latching device.

3109.3.1 Utility or Service Gates. Gates not intended for pedestrian use, such as utility or service gates, shall remain locked when not in use.

3109.3.2 Double or multiple gates. Double gates or multiple gates shall have at least one leaf secured in place and the adjacent leaf shall be secured with a self-latching device. The gate and barrier shall not have openings larger than 1/2 inch (12.7 mm) within 18 inches (457 mm) of the latch release mechanism. The self-latching device shall comply with the requirements of Section 3109.3.3.

3109.3.3 Latches. Where the release mechanism of the self-latching device is located less than

54 inches (1372 mm) from grade, the release mechanism shall be located on the vessel side of the gate at least 3 inches (76 mm) below the top of the gate, and the gate and barrier shall not have openings greater than 1/2 inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.

3109.4 Structure wall as a barrier. Where a wall of a dwelling or structure serves as part of the barrier, doors and operable windows with a sill height of less than 48 inches (1219 mm), that provide direct access to the aquatic vessel through the wall, shall be equipped with one or more of the following:

1. An alarm that produces an audible warning when the door or its screen or window, is opened. The alarm shall be listed and labeled as a water hazard entrance alarm in accordance with UL 2017. In dwellings or structures not required to be Accessible units, Type A units or Type B units, the deactivation switch shall be located 54 inches (1372 mm) or more above the threshold of the door. In dwellings or structures required to be Accessible units, Type A units or Type B units, the deactivation switch shall be located not greater than 54 inches (1372 mm) and not less than 48 inches (1219 mm) above the threshold of the door.
2. A safety cover that is listed and labeled in accordance with ASTM F1346.
3. An approved means of protection, such as self-closing doors with self-latching devices, provided that the degree of protection afforded is not less than the protection afforded by Items 1 and 2.

3109.5 Pool structure as a barrier. Where an on ground residential pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, the following shall apply:

1. An on ground pool wall, itself, shall be permitted to be the barrier where the pool structure is on grade and the wall is at least 48 inches (1219 mm) above grade for the entire perimeter of the pool and complies with the requirements of Section 3109.3.
2. Where the means of access is a ladder or steps, the ladder or steps shall be capable of being secured, locked or removed to prevent access or the ladder or steps shall be surrounded by a barrier that meets the requirements of this section.
3. When the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a 4-inch-diameter (102 mm) sphere.
4. The barrier shall be installed in accordance with the manufacturer's instructions.

3109.6 Natural barriers. In the case where the vessel area abuts the edge of a lake or other natural body of water, public access is not permitted or allowed along the shoreline, and required barriers extend to and beyond the water's edge a minimum of 18 inches (457 mm), a barrier is not required between the natural body of water shoreline and the vessel.

3109.7 Natural topography. Natural topography that prevents direct access to the aquatic vessel area shall include but not be limited to mountains and natural rock formations. A natural barrier approved by the governing body shall be acceptable provided that the degree of protection is not less than the protection afforded by the requirements of Sections 3109.2 through 3109.5.

3109.8 Indoor swimming pools. Indoor aquatic vessels shall be surrounded by a barrier that meets the requirements of Sections 3109.2.1 through 3109.7.

3109.9 Multiple aquatic vessels. Multiple aquatic vessels within a single complex shall be permitted without barriers where a barrier separates the single complex from the surrounding property in accordance with Section 3109.1 through 3109.8.

3109.10 Suction entrapment avoidance. Suction entrapment for aquatic vessels shall be provided in accordance with ANSI/APSP-7.

Exception: Portable residential spas and portable residential exercise spas listed and labeled in accordance with UL 1563 or CSA C22.2 No. 218.1.

Add new standards to Chapter 35 as follows:

UL

UL 1563- 2009 Electric Spas, Equipment Assemblies, and Associated Equipment

CSA

CSA C22.2 No. 218.1- 2011 Spas, Hot Tubs and Associated Equipment

Reason: This proposal provides a re-write of Section 3109 to ensure consistency with the barrier and entrapment avoidance provisions found in the new International Swimming Pool & Spa Code under Chapter 3. If the I-codes are not consistent, confusion on what to follow will occur for the contractor and building department. Further and most importantly, if the two I-codes are not consistent, important life safety requirements may not be followed correctly.

Cost Impact: The code change proposal will not increase the cost of construction.

Analysis: The new standards proposed for referencing within the IBC are currently referenced in the International Pool and Spa Code., UL 1563-2009 and CSA C22.2 No. 218.1-2011.

Staff note: There are provisions for latches on doors/gates to pools in Sections 1008.1.9.2 and 1109.13. This proposal includes requirements for latches on doors/gates to pools in Section 3109.3.3 and 3109.4.

G194-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3109 (NEW)-G-DIGIOVANNI.doc

G195 – 12

3109.4

Proponent: Steve Pfeiffer, City of Seattle, Dept. of Planning & Development (steve.pfeiffer@seattle.gov)

Revise as follows

3109.4 Residential swimming pools. Residential swimming pools shall ~~comply~~ be completely enclosed by a barrier complying with Sections 3109.4.1 through 3109.4.3.

Exception: A swimming pool with a power safety cover or a spa with a safety cover complying with ASTM F 1346 need not comply with Section 3109.4.

Reason: The purpose of this change is to clarify the location where barriers are required at a residential swimming pool. The current code provisions specify how to construct a barrier, but don't specify that the pool must be entirely surrounded by the barrier. The proposed language is similar to Section 3109.3 for public swimming pools.

Cost Impact: The code change proposal will not increase the cost of construction.

G195-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3109.4-G-PFEIFFER.doc

G196 – 12

3109.5, Chapter 35

Proponent: Bob Eugene, Underwriters Laboratories (Robert.Eugene@ul.com)

Revise as follows:

3109.5 Entrapment avoidance. Suction outlets shall be designed and installed in accordance with ANSI/APSP-7.

Exception: Self-contained spas *listed and labeled* in accordance with UL 1563.

Add new standard to Chapter 35 as follows:

UL

1563-2009 Electric Spas, Equipment Assemblies, and Associated Equipment, including revisions through April 29, 2011

Reason: Integral entrapment protection is required by UL 1563. UL 1563 is an ANSI approved standard. New language will correlate with code requirements in the ISPSC.

Cost Impact: The proposed changes will not increase the cost of construction.

Analysis: This standard is already referenced in the *International Pool and Spa Code*.

G196-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3109.5-G-EUGENE.doc

G197 – 12
3111.1.1 (NEW)

Proponent: Mark S. Graham, National Roofing Contractors Association (mgraham@nrca.net)

Add new text as follows:

3111.1.1 Rooftop-mounted solar photovoltaic panels and modules. Solar photovoltaic panels and modules installed upon a roof or as an integral part of a roof assembly shall comply with the requirements of Chapter 15 and the *International Fire Code*.

Reason: This code change proposal is intended to add clarity to the Code. Rooftop-mounted solar photovoltaic panels and modules are addressed in Chapter 15-Roof Assemblies and Rooftop Structures, specifically in Section 1505.8-Photovoltaic Systems, Section 1507.17-Photovoltaic Modules/Shingles and Section 1511-Solar Photovoltaic Panels/Modules.

Cost Impact: The code change proposal will not increase the cost of construction.

G197-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3111.1.1 (NEW)-G-GRAHAM.doc

G198 – 12

202, 107.2.6 (NEW), 3101.1, 3112 (NEW)

Proponent: Carl F. Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (CTC)

Revise as follows:

3101.1 Scope. The provisions of this chapter shall govern special building construction including membrane structures, temporary structures, *pedestrian walkways* and tunnels, automatic *vehicular gates*, *awnings* and *canopies*, *marquees*, signs, and towers, ~~and~~ antennas, and relocatable buildings.

SECTION 3112 **RELOCATABLE BUILDINGS**

3112.1 General. The provisions of this section shall apply to relocatable buildings. Relocatable buildings manufactured after the effective date of this code shall comply with the applicable provisions of this code.

3112.1.1 Compliance. A relocatable building transported to a new location, or a relocatable building that is undergoing *alteration or additions* shall comply with Section 3410.

3112.2 Supplemental information. Supplemental information specific to a relocatable building shall be submitted to the authority having jurisdiction, and shall, *as a minimum*, include all of the following:

1. Application for approval or permit
2. Manufacturer's name, address, contact information
3. Date of manufacture
4. Serial number of module
5. Manufacturer's design drawings
6. Type of construction in accordance with Section 602.
7. Occupancy type in accordance with Section 302.
8. Design loads including: roof live load, roof snow load, floor live load, wind load and seismic site class, use group and design category
9. Additional building planning and structural design data
10. Site plan indicating the location of the relocatable building
11. Site built structure or appurtenance attached to the relocatable building

3112.3 Manufacturer's Data Plate. The manufactures data plate shall be the basis for determining code compliance. Each relocatable module shall have a data plate that is posted in the location as noted on the drawings, and shall include the following information:

1. Manufacturer's name and address
2. Serial number
3. Date of manufacture
4. The quality assurance agency or approved inspection agency
5. Codes, and standards of construction
6. Design live roof load, design live floor load, snow load, wind and seismic design
7. Envelope thermal resistance values
8. Electrical service size
9. Fuel burning equipment and size
10. Special limitations if any

3112.4 Inspections. Inspections of a relocatable building shall be performed in accordance with Section 110.4 of this code during off-site construction, and the applicable sections of Section 110.3 during installation at the site.

Add new definition as follows:

**SECTION 202
DEFINITIONS**

RELOCATABLE BUILDING. A partially or completely assembled building constructed and designed to be reused multiple times and transported to different building sites.

Add new text as follows:

107.2.6 Relocatable buildings. Construction documents for relocatable buildings shall comply with this section and Section 3112.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

Unlike site-built buildings, which are typically intended to remain on their original site for the life of the building, relocatable modular buildings are designed and intended for relocation, reuse and/or repurposing. Many states have statutes that govern the building and relocating of relocatable modular buildings. For those that do not have state mandated requirements, much confusion and inconsistency exists about the requirements for relocatable modular buildings as existing buildings.

The Modular Building Institute (MBI) (www.modular.org) estimates that there are over 600,000 code compliant relocatable buildings in use in North America today. While it is impossible to determine the exact amount owned by the public at large, MBI estimates that public school districts across North America collectively own and operate about 180,000 relocatable classrooms with the industry owning and leasing an additional 120,000. Additionally, the industry owns and leases approximately 280,000 relocatable buildings for various other business occupancies, including construction site offices and temporary sales offices.

The Code Technology Committee Study Group on Relocatable Modular Buildings identified a number of unique characteristics of relocatable modular buildings that are unlike site-built buildings. Their findings are as follows:

- There are sections of the IBC that are applicable equally to both site-built and relocatable modular buildings, particularly for new construction.
- There are sections of the conflicting code sections that cannot be applied to both site-built and relocatable modular buildings, specifically related to construction documents, inspection, and relocation.

The IBC does not have specific requirements on how to treat these buildings. In the absence of clear definitions and requirements that are specific to both new and existing relocatable modular buildings, many code officials attempt to apply similar, but non-related sections of the building code intended for site built buildings to the relocatable modular industry. There are unique attributes to relocatable modular buildings that warrant their own requirements in a new chapter in this code.

CTC has submitted two proposals on the subject of relocatable modular buildings. One proposal for new construction (this proposal) and a second proposal to address the relocation of modular buildings (proposal to Chapter 34). This proposal includes:

- The definition has been distilled from industry publications and definitions found in state statutes that govern modular (industrialized) buildings. This definition was also approved in the 2012 IGCC.
- Identification and inclusion of relocatables into Special Construction, Chapter 31. This chapter applies to new relocatable buildings, and also new site built structures.

Moving this document forward through the ICC code development process will help the modular building industry comply with the intent of the code, provide a clear and consistent path for enforcement professionals, and for compliance by owners of relocatable buildings who wish to re-use or repurpose their existing buildings.

Cost impact: This code change proposal will not increase the cost of construction due to the re-usable/relocatable nature of such buildings.

G198-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3112 (NEW)-G-BALDASSARRA-CTC.doc

G199 – 12

202, Table 503, 1609.1.2, 2405.3, 2606.11, 2607.4, 2609.4, 3112 (NEW), 3102.1

Proponent: Vickie J. Lovell, InterCode Incorporated, representing National Greenhouse Manufacturers Association (vickie@InterCodeinc.com)

Add new text as follows:

SECTION 3112 **GREENHOUSES**

3112.1 General. The provisions of this section shall apply to structures defined as greenhouses that are designed and used primarily for the cultivation, maintenance, or protection of plants. Greenhouses are constructed for agricultural production, educational purposes, research, retail or business uses.

3112.2 Definitions. The following terms are defined in Chapter 2.

GREENHOUSE **ATTACHED GREENHOUSE**

3112.3 Occupancy. The occupancy provisions of this section shall apply to structures defined as greenhouses, and attached greenhouses.

3112.3.1 Group B. Greenhouses that are structurally attached to, but thermally isolated from college or university classrooms shall be classified as Group B.

3112.3.2 Group E. Greenhouses that are structurally attached to, but thermally isolated from elementary, middle or high school classrooms shall be classified as Group E.

3112.3.3 Group M. Greenhouses and attached greenhouses with access by the general access used primarily for the display and sale of plants shall be classified as Group M.

3112.3.4 Group U. Greenhouses that are any of the following shall be classified as Group U:

1. Greenhouses used primarily for the agricultural use for the production, cultivation, maintenance, or protection of plants.
2. Greenhouses that are accessory buildings to Group B, E, or M occupancies.
3. Utility or accessory greenhouses that are not classified in any specific occupancy.

3112.4 Type of Construction. Greenhouses shall be permitted to be constructed as Type I, II, III, IV or V construction. Combustible materials used in Type I and II construction shall be permitted in accordance with Section 603.

3112.5 Allowable Height and Area. The maximum allowable height and area for greenhouses shall comply with Table 3112.5. When an automatic sprinkler system is installed in accordance with Section 903.3.1.1, the values specified in Table 3112.5 for maximum building height is increased by 20 feet (6096mm) and the maximum number of stories is increased by one. These increases are permitted in addition to the building area increase in accordance with Sections 506.2 and 506.3.

3112.5.1 One-story unlimited area. The area of a one-story Group U agricultural building shall not be limited if the building is surrounded and adjoined by *public ways* or yards not less than 60 feet (18 288 mm) in width.

3112.5.2 Two-story unlimited area. The area of a two-story Group U agricultural building shall not be limited if the building is surrounded and adjoined by *public ways* or yards not less than 60 feet (18 288

mm) in width and is provided with an approved automatic sprinkler system throughout in accordance with Section 903.3.1.1.

**TABLE 3112.5
BASIC ALLOWABLE AREA FOR GREENHOUSES**

<u>I</u>		<u>II</u>		<u>III and IV</u>		<u>V</u>	
<u>A</u>	<u>B</u>	<u>A</u>	<u>B</u>	<u>III A and IV</u>	<u>III B</u>	<u>A</u>	<u>B</u>
ALLOWABLE AREA (square feet)^a							
<u>Unlimited</u>	<u>60,000</u>	<u>27,100</u>	<u>18,000</u>	<u>27,100</u>	<u>18,000</u>	<u>21,100</u>	<u>12,000</u>
MAXIMUM HEIGHT IN STORIES							
<u>Unlimited</u>	<u>12</u>	<u>4</u>	<u>2</u>	<u>4</u>	<u>2</u>	<u>3</u>	<u>2</u>
MAXIMUM HEIGHT IN FEET							
<u>Unlimited</u>	<u>160</u>	<u>65</u>	<u>55</u>	<u>65</u>	<u>55</u>	<u>50</u>	<u>40</u>

3112.6 Mixed use and occupancy. Attached greenhouses shall comply with the requirements for mixed occupancies and use requirements in Section 508.

3112.6.1 Fire Rating. The fire rating for the exterior wall of an attached greenhouse classified as Group E, B, or M shall comply with Table 602. Where Table 705.3 permits nonbearing exterior walls with unlimited area of unprotected openings, the fire resistance rating for the exterior walls is 0 hours.

3112.7 Materials. Materials used for the exterior of greenhouses shall comply with Sections 3112.11 through 3112.12.5

3112.8 Means of egress. Greenhouses shall provide means of egress in accordance with Chapters 10.

3112.9 Accessibility. Attached greenhouses with access by the general public in use Groups B, E, and M shall provide accessibility in accordance with Chapter 11.

3112.9.1 Use Group U. Greenhouses in use group U are exempt from Chapter 11 except as specified in this section.

3112.9.1.1 Employee work areas. Employees work areas shall comply with 1103.2.3 and 1104.3.1.

3112.9.1.2 Paved areas. Greenhouses with access to the general public shall be required to pave work areas and areas open to the general public in accordance with Section 1103.2.5.

3112.10 General Structural Design. Greenhouses with shall comply with the structural design requirements for live and dead loads appropriate for greenhouses in Chapter 16.

3112.10.1 Wind loads. All greenhouses are considered as Risk Category I as defined in Section 1604.5. Openings shall be permitted to be unprotected.

3112.11 Glass and Glazing. Glass and glazing used in greenhouses shall comply with Section 2405.

3112.11.1 Monolithic and multiple-layer sloped glazing systems. Glazing material, including annealed glass, is permitted to be installed without screens in the sloped glazing system of commercial greenhouses, or detached production greenhouses without public access, provided that the height of the greenhouse at the ridge does not exceed 30- feet (6096 mm) above grade.

3112.11.2 Greenhouse frames. Greenhouse frames shall be noncombustible if the height of the sloped glazing exceeds 30-feet (6096 mm) above grade.

3112.11.3 Energy. Greenhouses are exempt from fenestration requirements for U factor and SHGC, and envelope insulation of the International Energy Conservation Code.

3112.12 Light-transmitting Plastics. Light-transmitting plastics shall be permitted in lieu of plain glass in greenhouses and shall comply with Section 2606.

3112.12.1 Plastic wall panels. Greenhouses shall comply with Section 2607 for plastic wall panels. Greenhouses are not required to comply with the area limitations for plastic wall panels in Section 2607.4 but shall be limited as required for unprotected openings in accordance with 705.8

3112.12.2 Plastic glazing. Light transmitting plastic glazing shall comply with Section 2608.

3112.12.3 Plastic roof panels limitations. Greenhouses shall comply with Section 2609 for plastic roof panels. Greenhouses that have access by the general public are exempt from the area limitations of Table 2607.4 provided that the greenhouse has a minimum *fire separation distance* of 30 feet (1219 mm), or are equipped with an automatic sprinkler system in accordance with 903.3.1.1 and minimum fire separation distance of 4 feet (1219 mm). Group U greenhouses without access by the general public are exempt from the area limitations of Table 2607.4 provided that the greenhouse has a minimum fire separation distance of 4 feet (1219 mm).

3112.12.4 Shade and Curtain systems. Greenhouses that have access by the general public shall use material that is flame resistant with either of following:

1. Any textile shade or covering shall be flame resistant as determined by tests conducted in accordance with NFPA 701.
2. Any covering, other than textiles, shall have a *flame spread index* not greater than 25 when tested in accordance with ASTM E 84 or UL 723 in the form intended for use.

Any material is permitted to be used in a shade or curtain system in greenhouses without general public access.

3112.12.5 Plastic film. Plastic less than 30 feet (9144mm) above any floor, and plastic interior liners less than 20 mil (0.5 mm) in thickness used in greenhouses used in greenhouses without access by the general public is not required to comply with 3112.12.4.

3112.13 Membrane Structures. Greenhouses that are air-inflated or air-supported shall comply with Section 3103.1. Greenhouses that use an arch or truss to support plastic film shall not be considered a membrane structure.

Add new definitions as follows:

GREENHOUSE. A structure designed and used primarily for the cultivation, maintenance, or protection of plants. Greenhouses may or may not be accessible to the general public.

ATTACHED GREENHOUSE. A greenhouse that is structurally attached to another building, but thermally isolated from the adjoining building.

Revise as follows:

3102.1 General. The provisions of Sections 3102.1 through 3102.8 shall apply to air-supported, air-inflated, membrane covered cable and membrane-covered frame structures, collectively known as membrane structures, erected for a period of 180 days or longer. Those erected for a shorter period of time shall comply with the *International Fire Code*. Membrane structures covering water storage facilities, water clarifiers, water treatment plants, sewage treatment plants, ~~greenhouses~~ and similar facilities not used for human occupancy are required to meet only the requirements of Sections 3102.3.1 and 3102.7.

Membrane structures erected on a building, balcony, deck or other structure for any period of time shall comply with this section.

Revise as follows:

1609.1.2 Protection of openings. In *wind-borne debris regions*, glazing in buildings shall be impact resistant or protected with an impact-resistant covering meeting the requirements of an *approved* impact-resistant standard or ASTM E 1996 and ASTM E 1886 referenced herein as follows:

1. Wood structural panels with a minimum thickness of $7/16$ inch (11.1 mm) and maximum panel span of 8 feet (2438 mm) shall be permitted for opening protection in one- and two-story buildings classified as Group R-3 or R-4 occupancy.

Panels shall be precut so that they shall be attached to the framing surrounding the opening containing the product with the glazed opening. Panels shall be predrilled as required for the anchorage method and shall be secured with the attachment hardware provided. Attachments shall be designed to resist the components and cladding loads determined in accordance with the provisions of ASCE 7, with corrosion-resistant attachment hardware provided and anchors permanently installed on the building. Attachment in accordance with Table 1609.1.2 with corrosion resistant attachment hardware provided and anchors permanently installed on the building is permitted for buildings with a mean roof height of 45 feet (13 716 mm) or less where V_{asd} determined in accordance with Section 1609.3.1 does not exceed 140 mph (63 m/s).

2. Glazing in *Risk Category I* buildings as defined in Section 1604.5, ~~including greenhouses that are occupied for growing plants on a production or research basis, without public access~~ shall be permitted to be unprotected.

Exceptions:

1. through 3. (*Portions of text not shown remain unchanged*)

Revise as follows:

2405.3 Screening. Where used in monolithic glazing systems, heat-strengthened glass and fully tempered glass shall have screens installed below the glazing material. The screens and their fastenings shall: (1) be capable of supporting twice the weight of the glazing; (2) be firmly and substantially fastened to the framing members and (3) be installed within 4 inches (102 mm) of the glass. The screens shall be constructed of a noncombustible material not thinner than No. 12 B&S gage (0.0808 inch) with mesh not larger than 1 inch by 1 inch (25 mm by 25 mm). In a corrosive atmosphere, structurally equivalent noncorrosive screen materials shall be used. Heat-strengthened glass, fully tempered glass and wired glass, when used in multiple-layer glazing systems as the bottom glass layer over the walking surface, shall be equipped with screening that conforms to the requirements for monolithic glazing systems.

Exception: In monolithic and multiple-layer sloped glazing systems, the following applies:

1. Fully tempered glass installed without protective screens where glazed between intervening floors at a slope of 30 degrees (0.52 rad) or less from the vertical plane shall have the highest point of the glass 10 feet (3048 mm) or less above the walking surface.
2. Screens are not required below any glazing material, including annealed glass, where the walking surface below the glazing material is permanently protected from the risk of falling glass or the area below the glazing material is not a walking surface.
3. ~~Any glazing material, including annealed glass, is permitted to be installed without screens in the sloped glazing systems of commercial or detached noncombustible greenhouses used exclusively for growing plants and not open to the public, provided that the height of the greenhouse at the ridge does not exceed 30 feet (9144 mm) above grade.~~
4. (*no change to text*)
5. (*no change to text*)

Revise as follows:

~~2606.11 Greenhouses.~~ Light-transmitting plastics shall be permitted in lieu of plain glass in greenhouses.

2607.4 Area limitation and separation. The maximum area of a single wall panel and minimum vertical and horizontal separation requirements for exterior light-transmitting plastic wall panels shall be as provided for in Table 2607.4. The maximum percentage of wall area of any story in light-transmitting plastic wall panels shall not exceed that indicated in Table 2607.4 or the percentage of unprotected openings permitted by Section 705.8, whichever is smaller.

Exceptions:

1. In structures provided with approved flame barriers extending 30 inches (760 mm) beyond the exterior wall in the plane of the floor, a vertical separation is not required at the floor except that provided by the vertical thickness of the flame barrier projection.
2. Veneers of approved weather-resistant light-transmitting plastics used as exterior siding in buildings of Type V construction in compliance with Section 1406.
- ~~3. The area of light-transmitting plastic wall panels in exterior walls of greenhouses shall be exempt from the area limitations of Table 2607.4 but shall be limited as required for unprotected openings in accordance with Section 704.8.~~

2609.4 Area limitations. Roof panels shall be limited in area and the aggregate area of panels shall be limited by a percentage of the floor area of the room or space sheltered in accordance with Table 2609.4.

Exceptions:

1. The area limitations of Table 2609.4 shall be permitted to be increased by 100 percent in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
2. Low-hazard occupancy buildings, such as swimming pool shelters, shall be exempt from the area limitations of Table 2609.4, provided that the buildings do not exceed 5,000 square feet (465 m²) in area and have a minimum fire separation distance of 10 feet (3048 mm).
- ~~3. Greenhouses that are occupied for growing plants on a production or research basis, without public access, shall be exempt from the area limitations of Table 2609.4 provided they have a minimum fire separation distance of 4 feet (1220 mm).~~
4. (no change to text)

**TABLE 503
ALLOWABLE BUILDING HEIGHTS AND AREAS^a**

**Building height limitations shown in feet above grade plane. Story limitations shown as stories above grade plane.
Building area limitations shown in square feet, as determined by the definition of "Area, building," per story**

(Portions of table not shown remain unchanged)

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

A = building area per story, S = stories above grade plane, UL = Unlimited, NP = Not permitted.

- a. See the following sections for general exceptions to Table 503:
 1. Section 504.2, Allowable building height and story increase due to automatic sprinkler system installation.
 2. Section 506.2, Allowable building area increase due to street frontage.
 3. Section 506.3, Allowable building area increase due to automatic sprinkler system installation.
 4. Section 507, Unlimited area buildings.
 5. See Section 3112 for allowable height and area for greenhouses.
- b. through d. (no change to text)

Reason: Because the primary purpose of a greenhouse is for the propagation of plants, and not for human comfort, many typical building requirements are not applicable or necessary for greenhouses. This proposal has been submitted to distinguish the use and purpose of greenhouses, which better defines the applicable code requirements, and appropriate exceptions to the code.

The word "greenhouse" used throughout the IBC is too general of a term. Definitions and descriptions of greenhouses have been proposed that make the distinctions between the purposes of greenhouses, which better defines their occupancy classification.

Existing requirements for fire safety, structural, allowable height and area, accessibility, and other provisions for greenhouses have been extracted from the current code, and relocated into this new section without any significant technical changes. In two locations, Table 1604.3, 1607.12.2.1, it was impractical to remove the word "greenhouses" due to context. Some new sections have been added that are not presently addressed in the code, but are based on common, accepted practice for greenhouse construction. Some applicable text has been derived from Appendix C Agricultural Buildings.

Greenhouses are a type of unique structure, not a type of use group. Greenhouses fall into categories depending on their use. Greenhouse use groups include B, E, M, and U.

Two distinguishing features between types of greenhouses for the purposes of code enforcement is the access by the public or not and whether they are attached to another structure. These situations have been addressed in numerous locations within the proposal.

Although employees, students, faculty, or members of the general public may occupy the space, the primary function of a greenhouse is to create a controlled environment for the propagation and cultivation of plants, and is intended to achieve the optimum environment for the protection of the plants from the outside environment. Below are photos of typical types of greenhouses.



Greenhouse for display and retail sales of plants intended for general public access



Production greenhouse for agricultural use without public access



Greenhouses used by universities for research and scientific studies, access is limited to students and faculty.

T503 Appendix C contains the height and area requirements for greenhouses.

A proposal has been submitted to Chapter 31, Special Construction, that provides the allowable height and area requirements for greenhouses.

202. Currently, there is no definition for greenhouse in the IBC, although there are numerous requirements for greenhouses in the IBC.

Greenhouses fall into categories depending on their use. Greenhouse can fall into different use groups including B, E, M, and U. A proposal has been submitted to Chapter 31 to distinguish the use and purpose of greenhouses, and better define the applicable code requirements and appropriate exceptions to the code.

Although employees, students, faculty, or the general public may occupy the space, the primary function of a greenhouse is to create a controlled environment for the propagation or maintenance of plants, and to achieve the optimum environment for the protection of the plants from the outside environment.

Cost Impact: The code change proposal will not increase the cost of construction.

G199-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

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G200 – 12

3304.8 (NEW), 3311.3 (NEW)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care

Add new text as follows:

3304.8 Group I-2. For buildings employing a *defend in place* method in Group I-2 occupancies, an on-site fire watch shall be provided in accordance with the Section 901.7 of the *International Fire Code*.

3311.3 Group I-2. Temporary construction within corridors serving bed or stretcher movement in Group I-2 occupancies shall not reduce the corridor width to less than 60 inches.

Reason: This proposal is submitted by the ICC Ad Hoc Committee for Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering, a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

This change clarifies the code. Facilities that must remain operational during due to the critical nature of the service that they provide it is not feasible to evacuate the building for renovations. Healthcare facilities are routinely preplanning construction projects as to how the project will affect various fire and life safety functions and features in the building during the project.

However, this section reminds the plan reviewer to coordinate with the fire official for planned shut downs of fire safety equipment and provides an opportunity for the AHJ's to determine the appropriate interim life safety measures to ensure continued operation.

Temporary construction barriers are an operational necessity to contain construction dust, provide infection control, and prevent public entry into potentially hazardous areas. These barriers are required by facility infection control staff, industrial hygienists and other regulatory agencies. A new section of code is added to clarify that temporary construction may not reduce the corridor width to less than 60 inches where bed or stretcher movement is used. This temporary condition will allow for reasonable infection control protection and maintain an appropriate corridor width.

Cost Impact: This proposal will not increase the cost construction. This change is consistent with existing federal certification requirements.

G200-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

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G201 – 12

[A] 101.4, [A] 116.5, 201.3, 202, Chapter 34

Proponent: Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee (BCAC)

Delete without substitution as follows:

CHAPTER 34 EXISTING STRUCTURES

Revise as follows:

[A] 101.4 Referenced codes. The other codes listed in Sections 101.4.1 through 101.4.6 ~~101.4.7~~ and referenced elsewhere in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference.

[A] 101.4.7 Existing buildings. The provisions of the *International Existing Building Code* shall apply to all matters governing the repairs, alterations, change of occupancy, additions and relocation of existing buildings.

[A] 116.5 Restoration. The structure or equipment determined to be unsafe by the *building official* is permitted to be restored to a safe condition. To the extent that repairs, *alterations* or *additions* are made or a change of occupancy occurs during the restoration of the structure, such repairs, *alterations*, *additions* or change of occupancy shall comply with the requirements of Section 105.2.2 and ~~Chapter 34~~ the *International Existing Building Code*.

201.3 Terms defined in other codes. Where terms are not defined in this code and are defined in the *International Energy Conservation Code*, *International Fuel Gas Code*, *International Fire Code*, *International Existing Building Code*, *International Mechanical Code* or *International Plumbing Code*, such terms shall have the meanings ascribed to them as in those codes.

Revise as follows:

SECTION 202 DEFINITIONS

EXISTING STRUCTURE (For Chapter 34). A structure erected prior to the date of adoption of the appropriate code, or one for which a legal building *permit* has been issued.

Reason: This proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>.

Consistency and coordination among the International Codes is one of the cornerstones of the ICC Code Development process. The ICC Board established the ICC Building Code Action Committee (BCAC) to act as a forum to deal with complex issues ahead of the Code Development Process, identify emerging issues and draft proposed code changes. This proposed change is a result of the BCAC's work. This code change proposal was identified as the highest priority of the code change topics brought to the committee.

The purpose of this code change is to eliminate redundant and otherwise unnecessary and confusing requirements in the ICC family of codes. This is an effort to consolidate requirements for Existing Buildings into one code. The IEBC takes a more comprehensive approach to existing buildings than the IBC. The amount of language needed to properly regulate Existing Buildings would make the IBC Chapter 34 too large, or require the IBC to be split into two volumes. Therefore it is necessary and proper to regulate Existing Buildings under the provisions of the IEBC. This does not mean that the IEBC is the only document for regulation of Existing Buildings because the IEBC references the IBC and vice versa.

Some opposition to the deletion of Chapter 34 has been expressed in past code cycles with the reason that most jurisdictions do not adopt the IEBC. Data collected by ICC Government Relations indicates that 75% of all the States have adopted the IEBC locally or statewide. Of those 75%, 60% adopt the IEBC Statewide in some fashion.

Some opposition to the deletion of Chapter 34 has been expressed in past code cycles with the reason that jurisdictions do not want to adopt another book or that it would require burdensome legislative actions. The data collected by ICC Government Relations indicates that the IEBC is adopted in more jurisdictions than the Plumbing Code, yet the International Plumbing Code is referenced throughout the IBC in more sections than the IEBC. This would require jurisdictions to make several legislative actions to amend to those Plumbing Code references in the IBC, whereas they would only have to take one legislative action in the adoption of the IEBC.

The topic of governance of Existing Buildings has gone through several code cycles flip-flopping from being in the IBC, to being in an appendix, to being in a new code - the IEBC. Opposition to removing it from the IBC and putting it in the IEBC has been expressed that the IEBC was "not ready for prime time" while leaving Chapter 34 in the IBC. The text of Chapter 34 is duplicated in Chapter 4 and 14 of the IEBC and is now "ready for prime time"

It is problematic and confusing when attempting to create code changes to address Existing Buildings. The proponent would have to propose amendments to both the IBC and the IEBC. Furthermore a code change in one committee may fail to get approved but approved in the other. Therefore it only makes sense to have the requirements for Existing Buildings in one document, the IEBC. Then all focus and efforts to properly address regulations for Existing Buildings can be handled through one committee, one avenue and one process.

1. This is more of an editorial change, adding the IEBC.
2. There is no need to have the term "for Chapter 34" in the definition. The ICC codes contain language for Terms not defined in current code but are defined in other codes.
3. The IEBC is already referenced for compliance in IBC 3401.6. The IBC committee agreed to place the reference section 3401.6, stating that the IEBC was a viable design tool as a compliance option. The IEBC is one of the several code documents in the ICC Family of Codes. The requirements in Chapter 34 are duplicated in the IEBC in Chapters 4 and 14 as two separate compliance Chapters/Methods the Table below shows the section references between IBC Chapter 34 and IEBC Chapter 4 and 14.
4. This is proposed to be revised and consistent with language in Section 101.4. The IEBC should be a referenced code the same as the IFGC, IMC, IPC, IPMC, IFC and the IECC. The IEBC is referenced in IBC 3401.6.
5. This is more of an editorial change, adding the IEBC.

Comparison Table of the IBC Chapter 34 and the IEBC Chapter 4

IBC 34	IEBC 4	Notes	IBC 34	IEBC 4	Notes	IBC 34	IEBC 4	Notes
3401.1	401.1		3404.5	403.5		3408.3	407.3	
3401.2		Not in IEBC	3404.6	403.6		3408.4	407.4	
3401.3		Found in 301.2	3405.1	404.1		3409.1	408.1	
3401.4	401.2		3405.2	404.2		3409.2	408.2	
3401.5	401.3		3405.3	404.3		3410.1	409.1	
3402		Found in 202	3405.4	404.4		3411.1	410.1	
3403.1	402.1		3405.5	404.5		3411.2	410.2	
3403.2	402.2		3406.1	405.1		3411.3	410.3	
3403.3	402.3		3406.2	405.2		3411.4	410.4	
3403.4	402.4		3406.3	405.3		3411.5	410.5	
3403.5	402.5		3406.4	405.4		3411.6	410.6	
3404.1	403.1		3406.5	405.5		3411.7	410.7	
3404.2	403.2		3407.1	406.1		3411.8	410.8	
3404.3	403.3		3408.1	407.1		3411.9	410.9	
3404.4	403.4		3408.2	407.2		3412	1401	

Notes:

1. 3401.2 of the IBC contains maintenance language. Similar language regarding maintenance is found in the IPMC.
2. 3401.3 of the IBC is not found in IEBC Chapter 4, however it is found in 301.2.
3. 3402 of the IBC is the definition section and is not found in IEBC Chapter 4, however it is found in 202.

Bibliography: ICC Government Relations Code Adoption Resources.

Analysis:

1. This code change proposal will not remove Chapter 4 or Chapter 14 of the IEBC.
2. ICC Staff would have to change the references in Section 1009.7.2 from 3404.1 to 403.1 of the International Existing Building Code
3. ICC Staff would have to change the references in Section 1103.2.2 from 3411.4 to 410 of the International Existing Building Code

Cost Impact: The code change proposal will not increase the cost of construction.

Staff note: The IEBC does not have a definition for 'existing structure', however, it does have a definition for 'existing building' that reads as follows: [B] EXISTING BUILDING. A building erected prior to the date of the adoption of the appropriate code, or one for which a legal building permit has been issued.

G201-12

Public Hearing: Committee: AS AM D
 Assembly: ASF AMF DF

G202 – 12

202, Chapter 34

Proponent: Maureen Traxler, City of Seattle Dept. of Planning & Development, representing Washington Association of Building Officials Technical Code Development (maureen.traxler@seattle.gov)

Add new definitions as follows:

CHANGE OF OCCUPANCY. A change in the purpose or level of activity within a building that involves a change in application of the requirements of this code.

WORK AREA. That portion or portions of a building consisting of all reconfigured spaces as indicated on the construction documents. Work area excludes other portions of the building where incidental work entailed by the intended work must be performed and portions of the building where work not initially intended by the owner is specifically required by this code.

Revise as follows:

CHAPTER 34 EXISTING STRUCTURES

Part I—Scope, Application and Definitions

SECTION 3401 (IEBC [B] CHAPTER 4) GENERAL

3401.1 (IEBC [B] 401.1) Scope. The provisions of this chapter shall control the *alteration, repair, addition* and change of occupancy of existing buildings and structures.

Exception: Existing *bleachers*, grandstands and folding and telescopic seating shall comply with ICC 300.

3401.2 Maintenance. Buildings and structures, and parts thereof, shall be maintained in a safe and sanitary condition. Devices or safeguards which are required by this code shall be maintained in conformance with the code edition under which installed. The owner or the owner's designated agent shall be responsible for the maintenance of buildings and structures. To determine compliance with this subsection, the *building official* shall have the authority to require a building or structure to be reinspected. The requirements of this chapter shall not provide the basis for removal or abrogation of fire protection and safety systems and devices in existing structures.

3401.3 Compliance with other codes. *Alterations, repairs, additions* and changes of occupancy to, or relocation of, existing buildings and structures shall comply with the provisions for *alterations, repairs, additions* and changes of occupancy or relocation, respectively, in the *International Energy Conservation Code, International Fire Code, International Fuel Gas Code, International Mechanical Code, International Plumbing Code, International Property Maintenance Code, International Private Sewage Disposal Code, International Residential Code* and NFPA 70. Where provisions of the other codes conflict with provisions of this Chapter, the provisions of this Chapter shall take precedence.

3401.4 (IEBC [B] 401.2) Building materials and systems. Building materials and systems shall comply with the requirements of this section.

3401.4.1 (IEBC [B] 401.2.1) Existing materials. Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the *building official* to be unsafe per Section 116.

3401.4.2 (IEBC [B] 401.2.2) New and replacement materials. Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs and alterations, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not *permit* their use in buildings of similar occupancy, purpose and location.

3401.4.3 (IEBC [B] 401.2.3) Existing seismic force-resisting systems. Where the existing seismic force-resisting system is a type that can be designated ordinary, values of R, Ω_0 , and Cd for the existing seismic force-resisting system shall be those specified by this code for an ordinary system unless it is demonstrated that the existing system will provide performance equivalent to that of a detailed, intermediate or special system.

3401.5 (IEBC [B] 401.3) Dangerous conditions. The *building official* shall have the authority to require the elimination of conditions deemed *dangerous*.

3401.6 ~~Alternative compliance.~~ ~~Work performed in accordance with the *International Existing Building Code* shall be deemed to comply with the provisions of this chapter.~~

3401.6 (IEBC 301.1) Compliance methods. The *repair, alteration, change of occupancy, addition or relocation of all existing buildings* shall comply with one of the methods listed in Sections 3401.6.1 through 3401.6.3 as selected by the applicant. Application of a method shall be the sole basis for assessing the compliance of work performed under a single permit unless otherwise approved by the *building official*. Sections 3401.6.1 through 3401.6.3 shall not be applied in combination with each other. Where this code requires consideration of the seismic force-resisting system of an *existing building* subject to *repair, alteration, change of occupancy, addition or relocation of existing buildings*, the seismic evaluation and design shall be based on Section 3401.6.4 regardless of which compliance method is used.

Exception: Subject to the approval of the *building official*, alterations complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building is undergoing more than a limited structural *alteration* as defined in Section 3417.12.3.3. New structural members added as part of the *alteration* shall comply with this code. *Alterations of existing buildings in flood hazard areas* shall comply with Section 3415.3.

3401.6.1 (IEBC 301.1.1) Prescriptive compliance method. *Repairs, alterations, additions and changes of occupancy* complying with Sections 3403 through 3411 of this code in buildings complying with the *International Fire Code* shall be considered in compliance with the provisions of this code.

3401.6.2 (IEBC 301.1.2) Performance compliance method. *Repairs, alterations, additions, changes in occupancy and relocated buildings* complying with Section 3412 of this code shall be considered in compliance with the provisions of this code.

3401.6.3 (IEBC 301.1.3) Work area compliance method. *Repairs, alterations, additions, changes in occupancy and relocated buildings* complying with the applicable requirements of Sections 3413 through 3421 shall be considered in compliance with the provisions of this code.

3401.6.4 (IEBC 301.1.4) Seismic evaluation and design procedures. The seismic evaluation and design shall be based on the procedures specified in Chapter 16, ASCE 31 or ASCE 41. The procedures contained in Appendix A of the *International Existing Building Code* shall be permitted to be used as specified in Section 3401.6.4.2.

3401.6.4.1 (IEBC 301.1.4.1) Compliance with Chapter 16 level seismic forces. Where compliance with the seismic design provisions of Chapter 16 is required, the procedures shall be in accordance with one of the following:

1. One-hundred percent of the values in Chapter 16. Where the existing seismic force-resisting system is a type that can be designated as "Ordinary," values of R , Ω_0 and C_d used for analysis in accordance with Chapter 16 shall be those specified for structural systems classified as "Ordinary" in accordance with Table 12.2-1 of ASCE 7, unless it can be demonstrated that the structural system will provide performance equivalent to that of a "Detailed," "Intermediate" or "Special" system.
2. Compliance with ASCE 41 using both the BSE-1 and BSE-2 earthquake hazard levels and the corresponding performance levels shown in Table 3401.6.4.1.

**TABLE 3401.6.4.1 (IEBC TABLE 301.1.4.1)
PERFORMANCE CRITERIA FOR CHAPTER 16-LEVEL SEISMIC FORCES OCCUPANCY**

RISK CATEGORY (Based on IBC Table 1604.5)	PERFORMANCE LEVEL FOR USE WITH ASCE 41 BSE-1 EARTHQUAKE HAZARD LEVEL	PERFORMANCE LEVEL FOR USE WITH ASCE 41 BSE-2 EARTHQUAKE HAZARD LEVEL
<u>I</u>	<u>Life safety (LS)</u>	<u>Collapse prevention (CP)</u>
<u>II</u>	<u>Life safety (LS)</u>	<u>Collapse prevention (CP)</u>
<u>III</u>	<u>Note a</u>	<u>Note a</u>
<u>IV</u>	<u>Immediate occupancy (IO)</u>	<u>Life safety (LS)</u>

a. Acceptance criteria for Risk Category III shall be taken as 80 percent of the acceptance criteria specified for Risk Category II performance levels, but need not be less than the acceptance criteria specified for Risk Category IV performance levels.

3401.6.4.2 (IEBC 301.1.4.2) Compliance with reduced Chapter 16 level seismic forces. Where seismic evaluation and design is permitted to meet reduced Chapter 16 seismic force levels, the procedures used shall be in accordance with one of the following:

1. Chapter 16 using 75 percent of the prescribed forces. Values of R , Ω_0 and C_d used for analysis shall be as specified in Section 3401.6.4.1 of this code.
2. Structures or portions of structures that comply with the requirements of the applicable chapter in Appendix A of the *International Existing Building Code* as specified in Items 2.1 through 2.5 and subject to the limitations of the respective Appendix A Chapters shall be deemed to comply with this section.
 - 2.1. The seismic evaluation and design of unreinforced masonry bearing wall buildings in Risk Category I or II are permitted to be based on the procedures specified in Appendix Chapter A1.
 - 2.2. Seismic evaluation and design of the wall anchorage system in reinforced concrete and reinforced masonry wall buildings with flexible diaphragms in Risk Category I or II are permitted to be based on the procedures specified in Chapter A2.
 - 2.3. Seismic evaluation and design of cripple walls and sill plate anchorage in residential buildings of light-frame wood construction in Risk Category I or II are permitted to be based on the procedures specified in Chapter A3.
 - 2.4. Seismic evaluation and design of soft, weak, or open-front wall conditions in multiunit residential buildings of wood construction in Risk Category I or II are permitted to be based on the procedures specified in Chapter A4.
 - 2.5. Seismic evaluation and design of concrete buildings in all risk categories are permitted to be based on the procedures specified in Chapter A5.
3. Compliance with ASCE 31 based on the applicable performance level as shown in Table 3401.6.4.2. It shall be permitted to use the BSE-1 earthquake hazard level as defined in ASCE 41 and subject to the limitations in Item 4 below.
4. Compliance with ASCE 41 using the BSE-1 Earthquake Hazard Level and the performance level shown in Table 3401.6.4.2. The design spectral response acceleration parameters S_{XS} and S_{X1} specified in ASCE 41 shall not be taken less than 75 percent of the respective design spectral response acceleration parameters S_{DS} and S_{D1} defined by Chapter 16.

TABLE 3401.6.4.2 (IEBC TABLE 301.1.4.2)

PERFORMANCE CRITERIA FOR REDUCED CHAPTER 16-LEVEL SEISMIC FORCES OCCUPANCY

<u>RISK CATEGORY</u> <u>(Based on IBC Table 1604.5)</u>	<u>PERFORMANCE LEVEL FOR</u> <u>USE WITH ASCE 31</u>	<u>PERFORMANCE LEVEL FOR</u> <u>USE WITH ASCE 41 BSE-1</u> <u>EARTHQUAKE HAZARD</u> <u>LEVEL</u>
I	<u>Life safety (LS)</u>	<u>Life safety (LS)</u>
II	<u>Life safety (LS)</u>	<u>Life safety (LS)</u>
III	<u>Notes a, b</u>	<u>Note a</u>
IV	<u>Immediate occupancy (IO)</u>	<u>Life safety (LS)</u>

- a. Acceptance criteria for Risk Category III shall be taken as 80 percent of the acceptance criteria specified for Risk Category II performance levels, but need not be less than the acceptance criteria specified for Risk Category IV levels.
- b. For Risk Category III, the ASCE 31 screening phase checklists shall be based on the life safety performance level.

Part II—Prescriptive Compliance Method

**SECTION 3403
ADDITIONS**

(No change to Sections 3403 through 3411)

Part III—Performance Compliance Method

**SECTION 3412
PERFORMANCE COMPLIANCE METHOD ALTERNATIVES**

(No changes to Section 3412)

Part IV—Work Area Compliance Method

SECTION 3413 (IEBC CHAPTER 5)
CLASSIFICATION OF WORK

3413.1 General. *Alterations, repairs, additions and changes of occupancy to existing structures using the work area method shall comply with the provisions of Section 3414 through 3421. The work performed on an existing building shall be classified in accordance with this section.*

3413.2 (IEBC 501.2) Work area. *The work area shall be identified on the construction documents.*

3413.3 (IEBC 502.1) Repairs. *Repairs include the patching or restoration or replacement of damaged materials, elements, equipment or fixtures for the purpose of maintaining such components in good or sound condition with respect to existing loads or performance requirements.*

3413.3.2 (IEBC 502.2) Application. *Repairs shall comply with the provisions of Section 3414.*

3413.3.3 (IEBC 502.3) Related work. *Work on nondamaged components that is necessary for the required repair of damaged components shall be considered part of the repair and shall not be subject to the provisions of Sections 3415, 3416, 3417, 3418 or 3419.*

3413.4 (IEBC 503.1) Level 1 alterations. *Level 1 alterations include the removal and replacement or the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose.*

3413.4.1 (IEBC 503.2) Application. *Level 1 alterations shall comply with the provisions of Section 3415.*

3413.5 (IEBC 504.1) Level 2 alterations. Level 2 alterations include the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment.

3413.5.1 (IEBC 504.2) Application. Level 2 alterations shall comply with the provisions of Section 3415 for Level 1 alterations as well as the provisions of Section 3416.

3413.6 (IEBC 505.1) Level 3 alterations. Level 3 alterations apply where the work area exceeds 50 percent of the aggregate area of the building.

3413.6.1 (IEBC 505.2) Application. Level 3 alterations shall comply with the provisions of Sections 3415 and 3416 for Level 1 and 2 alterations, respectively, as well as the provisions of Section 3417.

3413.7 (IEBC 506.1) Change of occupancy. Change of occupancy provisions apply where the activity is classified as a change of occupancy.

3413.7.1 (IEBC 506.2) Application. Changes of occupancy shall comply with the provisions of Section 3418.

3413.8 (IEBC 507.1) Additions. Provisions for additions shall apply where work is classified as an addition.

3413.8.1 (IEBC 507.2) Application. Additions to existing buildings shall comply with the provisions of Section 3419.

3413.9 (IEBC 508.1) Historic buildings. Historic building provisions shall apply to buildings classified as historic buildings.

3413.9.1 (IEBC 508.2) Application. Except as specifically provided for in Section 3420, historic buildings shall comply with applicable provisions of this code for the type of work being performed.

3413.10 (IEBC 509.1) Relocated buildings. Relocated building provisions shall apply to relocated or moved buildings.

3413.10.1 (IEBC 509.2) Application. Relocated buildings shall comply with the provisions of Section 3421.

SECTION 3414 (IEBC CHAPTER 6) **REPAIRS**

3414.1 (IEBC 601.1) Scope. Repairs as described in Section 3413.3 shall comply with the requirements of this section. Repairs to historic buildings need only comply with Section 3420.

3414.2 (IEBC 601.2) Conformance. The work shall not make the building less conforming than it was before the repair was undertaken.

3414.3 (IEBC [B] 601.3) Flood hazard areas. In flood hazard areas, repairs that constitute substantial improvement shall require that the building comply with Section 1612.

3414.4 (IEBC 602.1) Existing building materials. Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the building official to render the building or structure unsafe or dangerous.

3414.5 (IEBC 602.2) New and replacement materials. Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall

be permitted for repairs and alterations, provided no dangerous or unsafe condition is created. Hazardous materials, such as asbestos and lead-based paint, shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

3414.6 (IEBC 602.3) Glazing in hazardous locations. Replacement glazing in hazardous locations shall comply with the safety glazing requirements of Chapter 24.

Exception: Glass block walls, louvered windows, and jalousies repaired with like materials.

3414.7 (IEBC 603.1) Fire protection. Repairs shall be done in a manner that maintains the level of fire protection provided.

3414.8 (IEBC 604.1) Means of egress. Repairs shall be done in a manner that maintains the level of protection provided for the means of egress.

3414.9 (IEBC 605.1) Accessibility. Repairs shall be done in a manner that maintains the level of accessibility provided.

3414.10 (IEBC [B] 606.1) Structural repairs. Structural repairs shall be in compliance with this section and shall not make the building less conforming than it was before the repair was undertaken. Regardless of the extent of structural or nonstructural damage, dangerous conditions shall be eliminated. Regardless of the scope of repair, new structural members and connections used for repair or rehabilitation shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

3414.10.1 (IEBC [B] 606.2.1) Repairs for less than substantial structural damage. For damage less than substantial structural damage, the damaged elements shall be permitted to be restored to their predamage condition.

3414.10.2 (IEBC [B] 606.2.2) Substantial structural damage to vertical elements of the lateral force-resisting system. A building that has sustained substantial structural damage to the vertical elements of its lateral force-resisting system shall be evaluated in accordance with Section 3414.10.2.1, and either repaired in accordance with Section 3414.10.2.2 or repaired and rehabilitated in accordance with Section 3414.10.2.3, depending on the results of the evaluation.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B, or C whose substantial structural damage was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.

3414.10.2.1 (IEBC [B] 606.2.2.1) Evaluation. The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the building official. The evaluation shall establish whether the damaged building, if repaired to its predamage state, would comply with the provisions of this code for load combinations that include wind or earthquake effects, except that the seismic forces shall be the reduced Chapter 16-level seismic forces.

3414.10.2.2 (IEBC [B] 606.2.2.2) Extent of repair for compliant buildings. If the evaluation establishes that the building in its predamage condition complies with the provisions of Section 3414.10.2.1, then the damaged elements shall be permitted to be restored to their predamage condition.

3414.10.2.3 (IEBC [B] 606.2.3) Extent of repair for noncompliant buildings. If the evaluation does not establish that the building in its predamage condition complies with the provisions of Section 3414.10.2.1, then the building shall be rehabilitated to comply with the provisions of this section. The wind loads for the

repair and rehabilitation shall be those required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be in accordance with this code. The seismic loads for this rehabilitation design shall be those required by the building code in effect at the time of original construction, but not less than the reduced Chapter 16-level seismic forces.

3414.10.3 (IEBC [B] 606.2.3) Substantial structural damage to gravity load-carrying components. Gravity load-carrying components that have sustained *substantial structural damage* shall be rehabilitated to comply with the applicable provisions for dead and live loads in this code. Snow loads shall be considered if the *substantial structural damage* was caused by or related to snow load effects. Undamaged gravity load-carrying components that receive dead, live or snow loads from rehabilitated components shall also be rehabilitated if required to comply with the design loads of the *rehabilitation* design.

3414.10.3.1 (IEBC [B] 606.2.3.1) Lateral force-resisting elements. Regardless of the level of damage to gravity elements of the lateral force-resisting system, if substantial structural damage to gravity load-carrying components was caused primarily by wind or seismic effects, then the building shall be evaluated in accordance with Section 3414.10.2.1 and, if noncompliant, rehabilitated in accordance with Section 3414.10.2.3.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B, or C whose substantial structural damage was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.

3414.10.4 (IEBC [B] 606.2.4) Flood hazard areas. In *flood hazard areas*, buildings that have sustained *substantial damage* shall be brought into compliance with Section 1612.

SECTION 3415 (IEBC CHAPTER 7)
LEVEL 1 ALTERATIONS

3415.1 (IEBC 701.1) Scope. Level 1 *alterations* as described in Section 3413.4 shall comply with the requirements of this section. Level 1 *alterations* to *historic buildings* shall comply with this section, except as modified in Section 3420.

3415.2 (IEBC 701.2) Conformance. An *existing building* or portion thereof shall not be altered such that the building becomes less safe than its existing condition.

Exception: Where the current level of safety or sanitation is proposed to be reduced, the portion altered shall conform to the requirements of this code.

3415.3 (IEBC [B] 701.3) Flood hazard areas. In *flood hazard areas*, *alterations* that constitute *substantial improvement* shall require that the building comply with Section 1612.

3415.4 (IEBC 702.1) Interior finishes. All newly installed interior wall and ceiling finishes shall comply with Chapter 8.

3415.5 (IEBC 702.4) Materials and methods. All new work shall comply with the materials and methods requirements in this code that specify material standards, detail of installation and connection, joints, penetrations, and continuity of any element, component, or system in the building.

3415.6 (IEBC 703.1) Fire protection. *Alterations* shall be done in a manner that maintains the level of fire protection provided.

3415.7 (IEBC 704.1) Means of egress. Alterations shall be done in a manner that maintains the level of protection provided for the means of egress.

3415.8 (IEBC 705.1) Accessibility. A facility that is altered shall comply with the applicable provisions in Sections 3415.8.1 through 3418.14 and Chapter 11 unless it is technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent that is technically feasible. A facility that is constructed or altered to be accessible shall be maintained accessible during occupancy.

Exceptions:

1. The altered element or space is not required to be on an accessible route unless required by Section 3418.15.
2. Accessible means of egress are not required to be provided in existing facilities.
3. Type B dwelling or sleeping units required by Section 1107 are not required to be provided in existing facilities undergoing less than a Level 3 alteration.
4. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall meet the provisions for Type B dwelling units.

3415.8.1 (IEBC 705.1.1) Entrances. Where an alteration includes alterations to an entrance, and the facility has an accessible entrance on an accessible route, the altered entrance is not required to be accessible unless required by Section 3415.8.15. Signs complying with Section 1110 shall be provided.

3415.8.2 (IEBC 705.1.2) Elevators. Altered elements of existing elevators shall comply with ASME A17.1/CSA B44 and ICC A117.1. Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.

3415.8.3 (IEBC 705.1.3) Platform lifts. Platform (wheelchair) lifts complying with ICC A117.1 and installed in accordance with ASME A18.1 shall be permitted as a component of an accessible route.

3415.8.4 (IEBC 705.1.4) Ramps. Where steeper slopes than allowed by Section 1010.3 are necessitated by space limitations, the slope of ramps in or providing access to existing facilities shall comply with Table 3415.8.4.

TABLE 3415.8.4 (IEBC TABLE 705.1.4)
RAMPS

<u>SLOPE</u>	<u>MAXIMUM RISE</u>
<u>Steeper than 1:10 but not steeper than 1:8</u>	<u>3 inches</u>
<u>Steeper than 1:12 but not steeper than 1:10</u>	<u>6 inches</u>

For SI: 1 inch = 25.4 mm.

3415.8.5 (IEBC 705.1.5) Dining areas. An accessible route to raised or sunken dining areas or to outdoor seating areas is not required provided that the same services and decor are provided in an accessible space usable by any occupant and not restricted to use by people with a disability.

3415.8.6 (IEBC 705.1.6) Performance areas. Where it is technically infeasible to alter performance areas to be on an accessible route, at least one of each type of performance area shall be made accessible.

3415.8.7 (IEBC 705.1.7) Jury boxes and witness stands. In alterations, accessible wheelchair spaces are not required to be located within the defined area of raised jury boxes or witness stands and shall be permitted to be located outside these spaces where ramp or lift access poses a hazard by restricting or projecting into a required means of egress.

3415.8.8 (IEBC 705.1.8) Accessible dwelling or sleeping units. Where Group I-1, I-2, I-3, R-1, R-2 or R-4 dwelling or sleeping units are being altered, the requirements of Section 1107 for accessible units and Chapter 9 for visible alarms apply only to the quantity of the spaces being altered.

3415.8.9 (IEBC 705.1.9) Type A dwelling or sleeping units. Where more than 20 Group R-2 dwelling or sleeping units are being altered, the requirements of Section 1107 for Type A units and Chapter 9 for visible alarms apply only to the quantity of the spaces being altered.

3415.8.10 (IEBC 705.1.10) Toilet rooms. Where it is technically infeasible to alter existing toilet and bathing rooms to be accessible, an accessible family or assisted-use toilet or bathing room constructed in accordance with Section 1109.2.1 is permitted. The family or assisted-use toilet or bathing room shall be located on the same floor and in the same area as the existing toilet or bathing rooms.

3415.8.11 (IEBC 705.1.11) Dressing, fitting and locker rooms. Where it is *technically infeasible* to provide accessible dressing, fitting, or locker rooms at the same location as similar types of rooms, one accessible room on the same level shall be provided. Where separate sex facilities are provided, accessible rooms for each sex shall be provided. Separate sex facilities are not required where only unisex rooms are provided.

3415.8.12 (IEBC 705.1.12) Fuel dispensers. Operable parts of replacement fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

3415.8.13 (IEBC 705.1.13) Thresholds. The maximum height of thresholds at doorways shall be 3/4 inch (19.1 mm). Such thresholds shall have beveled edges on each side.

3415.8.14 (IEBC 705.1.14) Extent of application. An *alteration* of an existing element, space, or area of a *facility* shall not impose a requirement for greater accessibility than that which would be required for new construction. *Alterations* shall not reduce or have the effect of reducing accessibility of a *facility* or portion of a *facility*.

3415.8.15 (IEBC 705.2) Alterations affecting an area containing a primary function. Where an *alteration* affects the accessibility to a, or contains an area of, *primary function*, the route to the *primary function* area shall be accessible. The accessible route to the *primary function* area shall include toilet facilities or drinking fountains serving the area of *primary function*.

Exceptions:

1. The costs of providing the accessible route are not required to exceed 20 percent of the costs of the alterations affecting the area of *primary function*.
2. This provision does not apply to *alterations* limited solely to windows, hardware, operating controls, electrical outlets and signs.
3. This provision does not apply to *alterations* limited solely to mechanical systems, electrical systems, installation or *alteration* of fire protection systems and abatement of hazardous materials.
4. This provision does not apply to *alterations* undertaken for the primary purpose of increasing the accessibility of a *facility*.
5. This provision does not apply to altered areas limited to Type B dwelling and sleeping units.

3415.9 (IEBC [B] 706.1) Structural. Where *alteration* work includes replacement of equipment that is supported by the building or where a reroofing permit is required, the provisions of this section shall apply.

3415.9.1 (IEBC [B] 706.2) Addition or replacement of roofing or replacement of equipment. Where addition or replacement of roofing or replacement of equipment results in additional dead loads, structural

components supporting such reroofing or equipment shall comply with the gravity load requirements of this code.

Exceptions:

1. Structural elements where the additional dead load from the roofing or equipment does not increase the force in the element by more than 5 percent.
2. Buildings constructed in accordance with the conventional light-frame construction methods of this code and where the dead load from the roofing or equipment is not increased by more than 5 percent.
3. Addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m²) or less over an existing, single layer of roof covering.

3415.9.2(IEBC [B] 706.3) Additional requirements for reroof permits. The requirements of this section shall apply to *alteration* work requiring reroof permits.

3415.9.2.1 (IEBC [B] 706.3.1) Bracing for unreinforced masonry bearing wall parapets. Where a permit is issued for reroofing for more than 25 percent of the roof area of a building assigned to Seismic Design Category D, E or F that has parapets constructed of unreinforced masonry, the work shall include installation of parapet bracing to resist the reduced Chapter 16-level seismic forces as specified in Section 3401.6.4.2, unless an evaluation demonstrates compliance of such items.

3415.9.2.2 (IEBC [B] 706.3.2) Roof diaphragms resisting wind loads in high-wind regions. Where roofing materials are removed from more than 50 percent of the roof diaphragm or section of a building located where the basic wind speed is greater than 90 mph or in a special wind region, as defined in Section 1609, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated for the wind loads specified in this code, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting at least 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in this code.

SECTION 3416 (IEBC CHAPTER 8)
LEVEL 2 ALTERATIONS

3416.1 (IEBC 801.1) Scope. Level 2 *alterations* as described in Section 3413.5 shall comply with the requirements of this section.

Exception: Buildings in which the reconfiguration is exclusively the result of compliance with the accessibility requirements of Section 3415.8.15 shall be permitted to comply with Section 3415.

3416.2 (IEBC 801.2) Alteration Level 1 compliance. In addition to the requirements of this section, all work shall comply with the requirements of Section 3415.

3416.3 (IEBC 801.3) Compliance. All new construction elements, components, systems, and spaces shall comply with the requirements of this code.

Exceptions:

1. Windows may be added without requiring compliance with the light and ventilation requirements of this code.
2. The length of dead-end corridors in newly constructed spaces shall only be required to comply with the provisions of Section 3416.7.5.
3. The minimum ceiling height of the newly created habitable and occupiable spaces and corridors shall be 7 feet (2134 mm).

3416.4 (IEBC 802.1) Special use and occupancy. Alteration of buildings classified as special use and occupancy as described in Chapter 4 shall comply with the requirements of Section 3416.1.

3416.5 (IEBC 803.1) Building elements and materials. The requirements of this section are limited to work areas in which Level 2 alterations are being performed, and shall apply beyond the work area where specified.

3416.5.1 (IEBC 803.2) Vertical openings. Existing vertical openings shall comply with the provisions of Sections 3416.5.1.1, 3416.5.1.2 and 3416.5.1.3.

3416.5.1.1 (IEBC 803.2.1) Existing vertical openings. All existing interior vertical openings connecting two or more floors shall be enclosed with approved assemblies having a fire-resistance rating of not less than 1 hour with approved opening protectives.

Exceptions:

1. Where vertical opening enclosure is not required by this code or the *International Fire Code*.
2. Interior vertical openings other than stairways may be blocked at the floor and ceiling of the work area by installation of not less than 2 inches (51 mm) of solid wood or equivalent construction.
3. The enclosure shall not be required where:
 - 3.1. Connecting the main floor and mezzanines; or
 - 3.2. All of the following conditions are met:
 - 3.2.1. The communicating area has a low hazard occupancy or has a moderate hazard occupancy that is protected throughout by an automatic sprinkler system.
 - 3.2.2. The lowest or next to the lowest level is a street floor.
 - 3.2.3. The entire area is open and unobstructed in a manner such that it may be assumed that a fire in any part of the interconnected spaces will be readily obvious to all of the occupants.
 - 3.2.4. Exit capacity is sufficient to provide egress simultaneously for all occupants of all levels by considering all areas to be a single floor area for the determination of required exit capacity.
 - 3.2.5. Each floor level, considered separately, has at least one-half of its individual required exit capacity provided by an exit or exits leading directly out of that level without having to traverse another communicating floor level or be exposed to the smoke or fire spreading from another communicating floor level.
4. In Group A occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories.
5. In Group B occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories. This enclosure, or the enclosure specified in Section 3416.5.1.1, shall not be required in the following locations:
 - 5.1. Buildings not exceeding 3,000 square feet (279 m²) per floor.
 - 5.2. Buildings protected throughout by an approved automatic fire sprinkler system.
6. In Group E occupancies, the enclosure shall not be required for vertical openings not exceeding three stories when the building is protected throughout by an approved automatic fire sprinkler system.
7. In Group F occupancies, the enclosure shall not be required in the following locations:
 - 7.1. Vertical openings not exceeding three stories.
 - 7.2. Special purpose occupancies where necessary for manufacturing operations and direct access is provided to at least one protected stairway.
 - 7.3. Buildings protected throughout by an approved automatic sprinkler system.
8. In Group H occupancies, the enclosure shall not be required for vertical openings not exceeding three stories where necessary for manufacturing operations and every floor level has direct access to at least two remote enclosed stairways or other approved exits.

9. In Group M occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories. This enclosure, or the enclosure specified in Section 3416.5.1.1, shall not be required in the following locations:
 - 9.1. Openings connecting only two floor levels.
 - 9.2. Occupancies protected throughout by an approved automatic sprinkler system.
10. In Group R-1 occupancies, the enclosure shall not be required for vertical openings not exceeding three stories in the following locations:
 - 10.1. Buildings protected throughout by an approved automatic sprinkler system.
 - 10.2. Buildings with less than 25 dwelling units or sleeping units where every sleeping room above the second floor is provided with direct access to a fire escape or other approved second exit by means of an approved exterior door or window having a sill height of not greater than 44 inches (1118 mm) and where:
 - 10.2.1. Any exit access corridor exceeding 8 feet (2438 mm) in length that serves two means of egress, one of which is an unprotected vertical opening, shall have at least one of the means of egress separated from the vertical opening by a 1-hour fire barrier; and
 - 10.2.2. The building is protected throughout by an automatic fire alarm system, installed and supervised in accordance with Chapter 9.
11. In Group R-2 occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories. This enclosure, or the enclosure specified in Section 3416.5.1.1, shall not be required in the following locations:
 - 11.1. Vertical openings not exceeding two stories with not more than four dwelling units per floor.
 - 11.2. Buildings protected throughout by an approved automatic sprinkler system.
 - 11.3. Buildings with not more than four dwelling units per floor where every sleeping room above the second floor is provided with direct access to a fire escape or other approved second exit by means of an approved exterior door or window having a sill height of not greater than 44 inches (1118 mm) and the building is protected throughout by an automatic fire alarm system complying with Section 3416.6.4.
12. One- and two-family dwellings.
13. Group S occupancies where connecting not more than two floor levels or where connecting not more than three floor levels and the structure is equipped throughout with an approved automatic sprinkler system.
14. Group S occupancies where vertical opening protection is not required for open parking garages and ramps.

3416.5.1.2 (IEBC 803.2.2) Supplemental shaft and floor opening enclosure requirements. Where the work area on any floor exceeds 50 percent of that floor area, the enclosure requirements of Section 3416.5.1 shall apply to vertical openings other than stairways throughout the floor.

Exception: Vertical openings located in tenant spaces that are entirely outside the work area.

3416.5.1.3 (IEBC 803.2.3) Supplemental stairway enclosure requirements. Where the work area on any floor exceeds 50 percent of that floor area, stairways that are part of the means of egress serving the work area shall, at a minimum, be enclosed with smoke-tight construction on the highest work area floor and all floors below.

Exception: Where stairway enclosure is not required by this code or the *International Fire Code*.

3416.5.2 (IEBC 803.3) Smoke barriers. Smoke barriers in Group I-2 occupancies shall be installed where required by Sections 3416.5.2.1 and 3416.5.2.2.

3416.5.2.1 (IEBC 803.3.1) Compartmentation. Where the work area is on a story used for sleeping rooms for more than 30 patients, the story shall be divided into not less than two compartments by smoke barrier walls complying with Section 3416.5.2.2 such that each compartment does not exceed 22,500

square feet (2093 m²), and the travel distance from any point to reach a door in the required smoke barrier shall not exceed 200 feet (60 960 mm).

Exception: Where neither the length nor the width of the smoke compartment exceeds 150 feet (45 720 mm), the travel distance to reach the smoke barrier door shall not be limited.

3416.5.2.2 (IEBC 803.3.2) Fire-resistance rating. The smoke barriers shall be fire-resistance rated for 30 minutes and constructed in accordance with Section 709.

3416.5.3 (IEBC 803.4) Interior finish. The interior finish of walls and ceilings in exits and corridors in any work area shall comply with the requirements of Chapter 8.

Exception: Existing interior finish materials that do not comply with the interior finish requirements of Chapter 8 shall be permitted to be treated with an approved fire-retardant coating in accordance with the manufacturer's instructions to achieve the required rating.

3416.5.3.1 (IEBC 803.4.1) Supplemental interior finish requirements. Where the work area on any floor exceeds 50 percent of the floor area, Section 3416.5.3 shall also apply to the interior finish in exits and corridors serving the work area throughout the floor.

Exception: Interior finish within tenant spaces that are entirely outside the work area.

3416.5.4 (IEBC 803.5) Guards. The requirements of Sections 3416.5.4.1 and 3416.5.4.2 shall apply in all work areas.

3416.5.4.1 (IEBC 803.5.1) Minimum requirement. Every portion of a floor, such as a balcony or a loading dock, that is more than 30 inches (762 mm) above the floor or grade below and is not provided with guards, or those in which the existing guards are judged to be in danger of collapsing, shall be provided with guards.

3416.5.4.2 (IEBC 803.5.2) Design. Where there are no guards or where existing guards must be replaced, the guards shall be designed and installed in accordance with this code.

3416.6 (IEBC 804.1) Fire protection. The requirements of this section shall be limited to work areas in which Level 2 alterations are being performed, and where specified they shall apply throughout the floor on which the work areas are located or otherwise beyond the work area.

3416.6.1 (IEBC 804.1.1) Corridor ratings. Where an approved automatic sprinkler system is installed throughout the story, the required fire-resistance rating for any corridor located on the story shall be permitted to be reduced in accordance with this code. In order to be considered for a corridor rating reduction, such system shall provide coverage for the stairwell landings serving the floor and the intermediate landings immediately below.

3416.6.2 (IEBC 804.2) Automatic sprinkler systems. Automatic sprinkler systems shall be provided in accordance with the requirements of Sections 3416.6.2.1 through 3416.6.2.5. Installation requirements shall be in accordance with Chapter 9.

3416.6.2.1 (IEBC 804.2.1) High-rise buildings. In high-rise buildings, work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with automatic sprinkler protection in the entire work area where the work area is located on a floor that has a sufficient sprinkler water supply system from an existing standpipe or a sprinkler riser serving that floor.

3416.6.2.1.1 (IEBC 804.2.1.1) Supplemental automatic sprinkler system requirements. Where the work area on any floor exceeds 50 percent of that floor area, Section 3416.6.2.1 shall apply to the entire floor on which the work area is located.

Exception: Tenant spaces that are entirely outside the *work area*.

3416.6.2.2 (IEBC 804.2.2) Groups A, B, E, F-1, H, I, M, R-1, R-2, R-4, S-1 and S-2. In buildings with occupancies in Groups A, B, E, F-1, H, I, M, R-1, R-2, R-4, S-1 and S-2, work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with automatic sprinkler protection where all of the following conditions occur:

1. The *work area* is required to be provided with automatic sprinkler protection in accordance with Chapter 9 as applicable to new construction; and
2. The *work area* exceeds 50 percent of the floor area.

Exceptions:

1. Work areas in Group R occupancies three stories or less in height.
2. If the building does not have sufficient municipal water supply for design of a fire sprinkler system available to the floor without installation of a new fire pump, work areas shall be protected by an automatic smoke detection system throughout all occupiable spaces other than sleeping units or individual dwelling units that activates the occupant notification system in accordance with Sections 907.4, 907.5 and 907.6.

3416.6.2.2.1 (IEBC 804.2.2.1) Mixed uses. In work areas containing mixed uses, one or more of which requires automatic sprinkler protection in accordance with Section 3416.6.2.2, such protection shall not be required throughout the *work area* provided that the uses requiring such protection are separated from those not requiring protection by fire-resistance-rated construction having a minimum 2-hour rating for Group H and a minimum 1-hour rating for all other occupancy groups.

3416.6.2.3 (IEBC 804.2.3) Windowless stories. Work located in a story without windows, as determined in accordance with Section 903.2.11.1, shall be sprinklered where the *work area* is required to be sprinklered under the provisions of this code for newly constructed buildings and the building has a sufficient municipal water supply without installation of a new fire pump.

3416.6.2.4 (IEBC 804.2.4) Other required automatic sprinkler systems. In buildings and areas listed in Table 903.2.11.6, *work areas* that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with an automatic sprinkler system under the following conditions:

1. The *work area* is required to be provided with an automatic sprinkler system in accordance with this code applicable to new construction; and
2. The building has sufficient municipal water supply for design of an automatic sprinkler system available to the floor without installation of a new fire pump.

3416.6.2.5 (IEBC 804.2.5) Supervision. Fire sprinkler systems required by this section shall be supervised by one of the following methods:

1. Approved central station system in accordance with NFPA 72;
2. Approved proprietary system in accordance with NFPA 72;
3. Approved remote station system of the jurisdiction in accordance with NFPA 72; or
4. When approved by the *building official*, approved local alarm service that will cause the sounding of an alarm in accordance with NFPA 72.

Exception: Supervision is not required for the following:

1. Underground gate valve with roadway boxes.
2. Halogenated extinguishing systems.
3. Carbon dioxide extinguishing systems.

4. Dry- and wet-chemical extinguishing systems.
5. Automatic sprinkler systems installed in accordance with NFPA 13R where a common supply main is used to supply both domestic and automatic sprinkler systems and a separate shutoff valve for the automatic sprinkler system is not provided.

3416.6.3 (IEBC 804.3) Standpipes. Where the *work area* includes exits or corridors shared by more than one tenant and is located more than 50 feet (15 240 mm) above or below the lowest level of fire department access, a standpipe system shall be provided. Standpipes shall have an approved fire department connection with hose connections at each floor level above or below the lowest level of fire department access. Standpipe systems shall be installed in accordance with Chapter 9.

Exceptions:

1. No pump shall be required provided that the standpipes are capable of accepting delivery by fire department apparatus of a minimum of 250 gallons per minute (gpm) at 65 pounds per square inch (psi) (946 L/m at 448KPa) to the topmost floor in buildings equipped throughout with an automatic sprinkler system or a minimum of 500 gpm at 65 psi (1892 L/m at 448KPa) to the topmost floor in all other buildings. Where the standpipe terminates below the topmost floor, the standpipe shall be designed to meet (gpm/psi) (L/m/KPa) requirements of this exception for possible future extension of the standpipe.
2. The interconnection of multiple standpipe risers shall not be required.

3416.6.4 (IEBC 804.4) Fire alarm and detection. An approved fire alarm system shall be installed in accordance with Sections 3416.6.4.1 through 3416.6.4.3. Where automatic sprinkler protection is provided in accordance with Section 3416.6.2 and is connected to the building fire alarm system, automatic heat detection shall not be required.

An approved automatic fire detection system shall be installed in accordance with the provisions of this code and NFPA 72. Devices, combinations of devices, appliances, and equipment shall be approved. The automatic fire detectors shall be smoke detectors, except that an approved alternative type of detector shall be installed in spaces such as boiler rooms, where products of combustion are present during normal operation in sufficient quantity to actuate a smoke detector.

3416.6.4.1 (IEBC 804.4.1) Occupancy requirements. A fire alarm system shall be installed in accordance with Sections 3416.6.4.1.1 through 3416.6.4.1.7. Existing alarm-notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm-notification appliances within the *work area* shall be provided and automatically activated.

Exceptions:

1. Occupancies with an existing, previously approved fire alarm system.
2. Where selective notification is permitted, alarm notification appliances shall be automatically activated in the areas selected.

3416.6.4.1.1 (IEBC 804.4.1.1) Group E. A fire alarm system shall be installed in *work areas* of Group E occupancies as required by Chapter 9 for existing Group E occupancies.

3416.6.4.1.2 (IEBC 804.4.1.2) Group I-1. A fire alarm system shall be installed in *work areas* of Group I-1 residential care/assisted living facilities as required by Chapter 9 for existing Group I-1 occupancies.

3416.6.4.1.3 (IEBC 804.4.1.3) Group I-2. A fire alarm system shall be installed in *work areas* of Group I-2 occupancies as required by Chapter 9 for existing Group I-2 occupancies.

3416.6.4.1.4 (IEBC 804.4.1.4) Group I-3. A fire alarm system shall be installed in *work areas* of Group I-3 occupancies as required by Chapter 9 for existing Group I-3 occupancies.

3416.6.4.1.5 (IEBC 804.4.1.5) Group R-1. A fire alarm system shall be installed in Group R-1 occupancies as required by Chapter 9 for existing Group R-1 occupancies.

3416.6.4.1.6 (IEBC 804.4.1.6) Group R-2. A fire alarm system shall be installed in *work areas* of Group R-2 apartment buildings as required by Chapter 9 for existing Group R-2 occupancies.

3416.6.4.1.7 (IEBC 804.4.1.7) Group R-4. A fire alarm system shall be installed in *work areas* of Group R-4 residential care/assisted living facilities as required by Chapter 9 for existing Group R-4 occupancies.

3416.6.4.2 (IEBC 804.4.2) Supplemental fire alarm system requirements. Where the *work area* on any floor exceeds 50 percent of that floor area, Section 3416.6.4.1 shall apply throughout the floor.

Exception: Alarm-initiating and notification appliances shall not be required to be installed in tenant spaces outside of the *work area*.

3416.6.4.3 (IEBC 804.4.3) Smoke alarms. Individual sleeping units and individual dwelling units in any *work area* in Group R and I-1 occupancies shall be provided with smoke alarms in accordance with Chapter 9.

Exception: Interconnection of smoke alarms outside of the *work area* shall not be required.

3416.7 (IEBC 805.1) Means of egress. The requirements of this section shall be limited to *work areas* that include exits or corridors shared by more than one tenant within the *work area* in which Level 2 *alterations* are being performed, and where specified they shall apply throughout the floor on which the *work areas* are located or otherwise beyond the *work area*.

3416.7.1 (IEBC 805.2) General. The means of egress shall comply with the requirements of this section.

Exceptions:

1. Where the *work area* and the means of egress serving it complies with NFPA 101.
2. Means of egress conforming to the requirements of the building code under which the building was constructed shall be considered compliant means of egress if, in the opinion of the *building official*, they do not constitute a distinct hazard to life.

3416.7.2 (IEBC 805.3) Number of exits. The number of exits shall be in accordance with Sections 3416.7.2.1 through 3416.7.2.5.

3416.7.2.1 (IEBC 805.3.1) Minimum number. Every story utilized for human occupancy on which there is a *work area* that includes exits or corridors shared by more than one tenant within the *work area* shall be provided with the minimum number of exits based on the occupancy and the occupant load in accordance with Chapter 10. In addition, the exits shall comply with Sections 3416.7.2.2 and 3416.7.2.3.

3416.7.2.2 (IEBC 805.3.1.1) Single-exit buildings. Only one exit is required from buildings and spaces of the following occupancies:

1. In Group A, B, E, F, M, U and S occupancies, a single exit is permitted in the story at the level of exit discharge when the occupant load of the story does not exceed 50 and the exit access travel distance does not exceed 75 feet (22 860 mm).
2. Group B, F-2, and S-2 occupancies not more than two stories in height that are not greater than 3,500 square feet per floor (326 m²), when the exit access travel distance does not exceed 75 feet (22 860 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.
3. Open parking structures where vehicles are mechanically parked.
4. In community residences for the developmentally disabled, the maximum occupant load excluding staff is 12.

5. Groups R-1 and R-2 not more than two stories in height, when there are not more than four dwelling units per floor and the exit access travel distance does not exceed 50 feet (15 240 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.
6. In multilevel dwelling units in buildings of occupancy Group R-1 or R-2, an exit shall not be required from every level of the dwelling unit provided that one of the following conditions is met:
 - 6.1. The travel distance within the dwelling unit does not exceed 75 feet (22 860 mm); or
 - 6.2. The building is not more than three stories in height and all third-floor space is part of one or more dwelling units located in part on the second floor; and no habitable room within any such dwelling unit shall have a travel distance that exceeds 50 feet (15 240 mm) from the outside of the habitable room entrance door to the inside of the entrance door to the dwelling unit.
7. In Group R-2, H-4, H-5 and I occupancies and in rooming houses and child care centers, a single exit is permitted in a one-story building with a maximum occupant load of 10 and the exit access travel distance does not exceed 75 feet (22 860 mm).
8. In buildings of Group R-2 occupancy that are equipped throughout with an automatic fire sprinkler system, a single exit shall be permitted from a basement or story below grade if every dwelling unit on that floor is equipped with an approved window providing a clear opening of at least 5 square feet (0.47 m²) in area, a minimum net clear opening of 24 inches (610 mm) in height and 20 inches (508 mm) in width, and a sill height of not more than 44 inches (1118 mm) above the finished floor.
9. In buildings of Group R-2 occupancy of any height with not more than four dwelling units per floor; with a smokeproof enclosure or outside stair as an exit; and with such exit located within 20 feet (6096 mm) of travel to the entrance doors to all dwelling units served thereby.
10. In buildings of Group R-3 occupancy equipped throughout with an automatic fire sprinkler system, only one exit shall be required from basements or stories below grade.

3416.7.2.3 (IEBC 805.3.1.2) Fire escapes allowed. When more than one exit is required, an existing or newly constructed fire escape complying with Section 3416.7.2.3.1 shall be accepted as providing one of the required means of egress.

3416.7.2.3.1 (IEBC 805.3.1.2.1) Fire escape access and details. Fire escapes shall comply with all of the following requirements:

1. Occupants shall have unobstructed access to the fire escape without having to pass through a room subject to locking.
2. Access to a new fire escape shall be through a door, except that windows shall be permitted to provide access from single dwelling units or sleeping units in Group R-1, R-2 and I-1 occupancies or to provide access from spaces having a maximum occupant load of 10 in other occupancy classifications.
 - 2.1. The window shall have a minimum net clear opening of 5.7 square feet (0.53 m²) or 5 square feet (0.46 m²) where located at grade.
 - 2.2. The minimum net clear opening height shall be 24 inches (610 mm) and net clear opening width shall be 20 inches (508 mm).
 - 2.3. The bottom of the clear opening shall not be greater than 44 inches (1118 mm) above the floor.
 - 2.4. The operation of the window shall comply with the operational constraints of this code.
3. Newly constructed fire escapes shall be permitted only where exterior stairs cannot be utilized because of lot lines limiting the stair size or because of the sidewalks, alleys, or roads at grade level.
4. Openings within 10 feet (3048 mm) of fire escape stairs shall be protected by fire assemblies having minimum 3/4 -hour fire-resistance ratings.

Exception: Opening protection shall not be required in buildings equipped throughout with an approved automatic sprinkler system.

5. In all buildings of Group E occupancy, up to and including the 12th grade, buildings of Group I occupancy, rooming houses and childcare centers, ladders of any type are prohibited on fire escapes used as a required means of egress.

3416.7.2.3.2 (IEBC 805.3.1.2.2) Construction. The fire escape shall be designed to support a live load of 100 pounds per square foot (4788 Pa) and shall be constructed of steel or other approved noncombustible materials. Fire escapes constructed of wood not less than nominal 2 inches (51 mm) thick are permitted on buildings of Type V construction. Walkways and railings located over or supported by combustible roofs in buildings of Types III and IV construction are permitted to be of wood not less than nominal 2 inches (51 mm) thick.

3416.7.2.3.3 (IEBC 805.3.1.2.3) Dimensions. Stairs shall be at least 22 inches (559 mm) wide with risers not more than, and treads not less than, 8 inches (203 mm). Landings at the foot of stairs shall not be less than 40 inches (1016 mm) wide by 36 inches (914 mm) long and located not more than 8 inches (203 mm) below the door.

3416.7.2.4 (IEBC 805.3.2) Mezzanines. Mezzanines in the work area and with an occupant load of more than 50 or in which the travel distance to an exit exceeds 75 feet (22 860 mm) shall have access to at least two independent means of egress.

Exception: Two independent means of egress are not required where the travel distance to an exit does not exceed 100 feet (30 480 mm) and the building is protected throughout with an automatic sprinkler system.

3416.7.2.5 (IEBC 805.3.3) Main entrance—Group A. All buildings of Group A with an occupant load of 300 or more shall be provided with a main entrance capable of serving as the main exit with an egress capacity of at least one-half of the total occupant load. The remaining exits shall be capable of providing one-half of the total required exit capacity.

Exception: Where there is no well-defined main exit or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the building provided that the total width of egress is not less than 100 percent of the required width.

3416.7.3 (IEBC 805.4) Egress doorways. Egress doorways in any work area shall comply with Sections 3416.7.3.1 through 3416.7.3.5.

3416.7.3.1 (IEBC 805.4.1) Two egress doorways required. Work areas shall be provided with two egress doorways in accordance with the requirements of Sections 3416.7.3.1.1 and 3416.7.3.1.2.

3416.7.3.1.1 (IEBC 805.4.1.1) Occupant load and travel distance. In any work area, all rooms and spaces having an occupant load greater than 50 or in which the travel distance to an exit exceeds 75 feet (22 860 mm) shall have a minimum of two egress doorways.

Exceptions:

1. Storage rooms having a maximum occupant load of 10.
2. Where the work area is served by a single exit in accordance with Section 3416.7.2.2.

3416.7.3.1.2 (IEBC 805.4.1.2) Group I-2. In buildings of Group I-2 occupancy, any patient sleeping room or suite of patient rooms greater than 1,000 square feet (93 m²) within the work area shall have a minimum of two egress doorways.

3416.7.3.2 (IEBC 805.4.2) Door swing. In the work area and in the egress path from any work area to the exit discharge, all egress doors serving an occupant load greater than 50 shall swing in the direction of exit travel.

3416.7.3.2.1 (IEBC 805.4.2.1) Supplemental requirements for door swing. Where the *work area* exceeds 50 percent of the floor area, door swing shall comply with Section 3416.7.3.2 throughout the floor.

Exception: Means of egress within or serving only a tenant space that is entirely outside the *work area*.

3416.7.3.3 (IEBC 805.4.3) Door closing. In any *work area*, all doors opening onto an exit passageway at grade or an exit stair shall be self-closing or automatic-closing by listed closing devices.

Exceptions:

1. Where exit enclosure is not required by other provisions of this code.
2. Means of egress within or serving only a tenant space that is entirely outside the *work area*.

3416.7.3.3.1 (IEBC 805.4.3.1) Supplemental requirements for door closing. Where the *work area* exceeds 50 percent of the floor area, doors shall comply with Section 3416.7.3.3 throughout the exit stair from the *work area* to, and including, the level of exit discharge.

3416.7.3.4 (IEBC 805.4.4) Panic hardware. In any *work area*, and in the egress path from any *work area* to the exit discharge, in buildings or portions thereof of Group A assembly occupancies with an occupant load greater than 100, all required exit doors equipped with latching devices shall be equipped with approved panic hardware.

3416.7.3.4.1 (IEBC 805.44.1) Supplemental requirements for panic hardware. Where the *work area* exceeds 50 percent of the floor area, panic hardware shall comply with Section 3416.7.3.4 throughout the floor.

Exception: Means of egress within a tenant space that is entirely outside the *work area*.

3416.7.3.5 (IEBC 805.4.5) Emergency power source in Group I-3. *Work areas* in buildings of Group I-3 occupancy having remote power unlocking capability for more than 10 locks shall be provided with an emergency power source for such locks. Power shall be arranged to operate automatically upon failure of normal power within 10 seconds and for a duration of not less than 1 hour.

3416.7.4 (IEBC 805.5) Openings in corridor walls. Openings in corridor walls in any *work area* shall comply with Sections 3416.7.4.1 through 3416.7.4.4.

Exception: Openings in corridors where such corridors are not required to be rated in accordance with other provisions of this code.

3416.7.4.1 (IEBC 805.5.1) Corridor doors. Corridor doors in the *work area* shall not be constructed of hollow core wood and shall not contain louvers. All dwelling unit or sleeping unit corridor doors in *work areas* in buildings of Groups R-1, R-2, and I-1 shall be at least 1-3/8-inch (35 mm) solid core wood or approved equivalent and shall not have any glass panels, other than approved wired glass or other approved glazing material in metal frames. All dwelling unit or sleeping unit corridor doors in *work areas* in buildings of Groups R-1, R-2, and I-1 shall be equipped with approved door closers. All replacement doors shall be 1-3/4-inch (45 mm) solid bonded wood core or approved equivalent, unless the existing frame will accommodate only a 1-3/8-inch (35 mm) door.

Exceptions:

1. Corridor doors within a dwelling unit or sleeping unit.
2. Existing doors meeting the requirements of Appendix N of the *International Existing Building Code, Guidelines on Fire Ratings of Archaic Materials and Assemblies*, for a rating of 15 minutes or more shall be accepted as meeting the provisions of this requirement.

3. Existing doors in buildings protected throughout with an approved automatic sprinkler system shall be required only to resist smoke, be reasonably tight fitting, and shall not contain louvers.
4. In group homes with a maximum of 15 occupants and that are protected with an approved automatic detection system, closing devices may be omitted.
5. Door assemblies having a fire protection rating of at least 20 minutes.

3416.7.4.2 (IEBC 805.5.2) Transoms. In all buildings of Group I-1, R-1 and R-2 occupancy, all transoms in corridor walls in work areas shall either be glazed with 1/4-inch (6.4 mm) wired glass set in metal frames or other glazing assemblies having a fire protection rating as required for the door and permanently secured in the closed position or sealed with materials consistent with the corridor construction.

3416.7.4.3 (IEBC 805.5.3) Other corridor openings. In any work area, any other sash, grille, or opening in a corridor and any window in a corridor not opening to the outside air shall be sealed with materials consistent with the corridor construction.

3416.7.4.3.1 (IEBC 805.5.3.1) Supplemental requirements for other corridor openings. Where the work area exceeds 50 percent of the floor area, Section 3416.7.4.3 shall be applicable to all corridor windows, grills, sashes, and other openings on the floor.

Exception: Means of egress within or serving only a tenant space that is entirely outside the work area.

3416.7.4.4 (IEBC 805.5.4) Supplemental requirements for corridor openings. Where the work area on any floor exceeds 50 percent of the floor area, the requirements of Sections 3416.7.4.1 through 3416.7.4.3 shall apply throughout the floor.

3416.7.5 (IEBC 805.6) Dead-end corridors. Dead-end corridors in any work area shall not exceed 35 feet (10 670 mm).

Exceptions:

1. Where dead-end corridors of greater length are permitted by Chapter 10.
2. In other than Group A and H occupancies, the maximum length of an existing dead-end corridor shall be 50 feet (15 240 mm) in buildings equipped throughout with an automatic fire alarm system installed in accordance with Chapter 9.
3. In other than Group A and H occupancies, the maximum length of an existing dead-end corridor shall be 70 feet (21 356 mm) in buildings equipped throughout with an automatic sprinkler system installed in accordance with Chapter 9.
4. In other than Group A and H occupancies, the maximum length of an existing, newly constructed, or extended dead-end corridor shall not exceed 50 feet (15 240 mm) on floors equipped with an automatic sprinkler system installed in accordance with Chapter 9.

3416.7.6 (IEBC 805.7) Means-of-egress lighting. Means-of-egress lighting shall be in accordance with this section, as applicable.

3416.7.6.1 (IEBC 805.7.1) Artificial lighting required. Means of egress in all work areas shall be provided with artificial lighting in accordance with the requirements of this code.

3416.7.6.2 (IEBC 805.7.2) Supplemental requirements for means-of egress lighting. Where the work area on any floor exceeds 50 percent of that floor area, means of egress throughout the floor shall comply with Section 3416.7.6.1.

Exception: Means of egress within or serving only a tenant space that is entirely outside the work area.

3416.7.7 (IEBC 805.8) Exit signs. Exit signs shall be in accordance with this section, as applicable.

3416.7.7.1 (IEBC 805.8.1) Work areas. Means of egress in all work areas shall be provided with exit signs in accordance with Chapter 10.

3416.7.7.2 (IEBC 805.8.2) Supplemental requirements for exit signs. Where the *work area* on any floor exceeds 50 percent of that floor area, means of egress throughout the floor shall comply with Section 3416.7.7.1.

Exception: Means of egress within a tenant space that is entirely outside the *work area*.

3416.7.8 (IEBC 805.9) Handrails. The requirements of Sections 3416.7.8.1 and 3416.7.8.2 shall apply to handrails from the *work area* floor to, and including, the level of exit discharge.

3416.7.8.1 (IEBC 805.9.1) Minimum requirement. Every required exit stairway that is part of the means of egress for any *work area* and that has three or more risers and is not provided with at least one handrail, or in which the existing handrails are judged to be in danger of collapsing, shall be provided with handrails for the full length of the run of steps on at least one side. All exit stairways with a required egress width of more than 66 inches (1676 mm) shall have handrails on both sides.

3416.7.8.2 (IEBC 805.9.2) Design. Handrails required in accordance with Section 3416.7.8.1 shall be designed and installed in accordance with the provisions of Chapter 10.

3416.7.9 (IEBC 805.10) Guards. The requirements of Sections 3416.7.9.1 and 3416.7.9.2 shall apply to guards from the *work area* floor to, and including, the level of exit discharge but shall be confined to the egress path of any *work area*.

3416.7.9.1 (IEBC 805.10.1) Minimum requirement. Every open portion of a stair, landing, or balcony that is more than 30 inches (762 mm) above the floor or grade below and is not provided with guards, or those portions in which existing guards are judged to be in danger of collapsing, shall be provided with guards.

3416.7.9.2 (IEBC 805.10.2) Design. Guards required in accordance with Section 3416.7.9.1 shall be designed and installed in accordance with this code.

3416.8 (IEBC 806.1) Accessibility. A building, *facility*, or element that is altered shall comply with this section and Section 3415.8.

3416.8.1 (IEBC 806.2) Stairs and escalators in existing buildings. In *alterations* where an escalator or stair is added where none existed previously, an accessible route shall be provided in accordance with Sections 1104.4 and 1104.5.

3416.8.2 (IEBC 806.3) Accessible dwelling units and sleeping units. Where Group I-1, I-2, I-3, R-1, R-2 or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 for accessible units and Chapter 9 for visible alarms apply only to the quantity of spaces being added.

3416.8.3 (IEBC 806.4) Type A dwelling or sleeping units. Where more than 20 Group R-2 dwelling or sleeping units are being added, the requirements of Section 1107 for Type A units and Chapter 9 for visible alarms apply only to the quantity of the spaces being added.

3416.8.4 (IEBC 806.5) Type B dwelling or sleeping units. Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 for Type B units and Chapter 9 for visible alarms apply only to the quantity of the spaces being added.

3416.9 (IEBC [B] 807.1) Structural. Structural elements and systems within buildings undergoing Level 2 *alterations* shall comply with this section.

3416.9.1 (IEBC [B] 807.2) New structural elements. New structural elements in alterations, including connections and anchorage, shall comply with Chapter 16.

3416.9.2 (IEBC [B] 807.3) Minimum design loads. The minimum design loads on existing elements of a structure that do not support additional loads as a result of an alteration shall be the loads applicable at the time the building was constructed.

3416.9.3 (IEBC [B] 807.4) Existing structural elements carrying gravity loads. Alterations shall not reduce the capacity of existing gravity load-carrying structural elements unless it is demonstrated that the elements have the capacity to carry the applicable design gravity loads required by Chapter 16. Existing structural elements supporting any additional gravity loads as a result of the alterations, including the effects of snow drift, shall comply with Chapter 16.

Exceptions:

1. Structural elements whose stress is not increased by more than 5 percent.
2. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the existing building and its alteration comply with the conventional light-frame construction methods of Chapter 16.

3416.9.4 (IEBC [B] 807.5) Existing structural elements resisting lateral loads. Alterations affecting the demands or capacities of existing elements of the lateral load-resisting system shall be evaluated using the wind provisions of Chapter 16 and the reduced Chapter 16-level seismic forces. Any existing lateral load-resisting structural elements whose demand-capacity ratio with the alteration considered is more than 10 percent greater than its demand-capacity ratio with the alteration ignored shall be brought into compliance with those wind and seismic provisions. In addition, the alteration shall not create a structural irregularity prohibited by ASCE 7 unless the entire structure complies with Section 3401.6.4.2. For the purposes of this section, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacity shall account for the cumulative effects of additions and alterations since the original construction.

3416.9.5 (IEBC [B] 807.6) Voluntary lateral force-resisting system alterations. Alterations of existing structural elements and additions of new structural elements that are initiated for the purpose of increasing the lateral force-resisting strength or stiffness of an existing structure and that are not required by other sections of this code shall not be required to be designed for forces conforming to Chapter 16, provided that an engineering analysis is submitted to show that:

1. The capacity of existing structural elements required to resist forces is not reduced;
2. The lateral loading to existing structural elements is not increased either beyond its capacity or more than 10 percent;
3. New structural elements are detailed and connected to the existing structural elements as required by Chapter 16;
4. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by Chapter 16; and
5. A dangerous condition as defined in this code is not created. Voluntary alterations to lateral force-resisting systems conducted in accordance with Appendix A of the International Existing Building Code and the referenced standards of this code shall be permitted.

SECTION 3417 (IEBC CHAPTER 9)
LEVEL 3 ALTERATIONS

3417.1 (IEBC 901.1) Scope. Level 3 alterations as described in Section 3413.6 shall comply with the requirements of this section.

3417.2 (IEBC 901.2) Compliance. In addition to the provisions of this section, work shall comply with all of the requirements of Sections 3415 and 3416. The requirements of Sections 3416.5, 3416.6, and 3416.7 shall apply within all *work areas* whether or not they include exits and corridors shared by more than one tenant and regardless of the occupant load.

Exception: Buildings in which the reconfiguration of space affecting exits or shared egress access is exclusively the result of compliance with the accessibility requirements of Section 3415.8.15 shall not be required to comply with this section.

3417.3 (IEBC 902.1) High-rise buildings. High rise buildings shall comply with the requirements of Sections 3417.3.1 and 3417.3.2.

3417.3.1 (IEBC 902.1.1) Recirculating air or exhaust systems. When a floor is served by a recirculating air or exhaust system with a capacity greater than 15,000 cubic feet per minute (701 m³/s), that system shall be equipped with approved smoke and heat detection devices installed in accordance with the *International Mechanical Code*.

3417.3.2 (IEBC 902.1.2) Elevators. Where there is an elevator or elevators for public use, at least one elevator serving the *work area* shall comply with this section. Existing elevators with a travel distance of 25 feet (7620 mm) or more above or below the main floor or other level of a building and intended to serve the needs of emergency personnel for fire-fighting or rescue purposes shall be provided with emergency operation in accordance with ASME A17.3. New elevators shall be provided with Phase I emergency recall operation and Phase II emergency in-car operation in accordance with ASME A17.1.

3417.4 (IEBC 902.2) Boiler and furnace equipment rooms. Boiler and furnace equipment rooms adjacent to or within the following facilities shall be enclosed by 1-hour fire-resistance-rated construction: day nurseries, children's shelter facilities, residential childcare facilities, and similar facilities with children below the age of 2-1/2 years or that are classified as Group I-2 occupancies, shelter facilities, residences for the developmentally disabled, group homes, teaching family homes, transitional living homes, rooming and boarding houses, hotels, and multiple dwellings.

Exceptions:

1. Furnace and boiler equipment of low-pressure type, operating at pressures of 15 pounds per square inch gauge (psig) (103.4 KPa) or less for steam equipment or 170 psig (1171 KPa) or less for hot water equipment, when installed in accordance with manufacturer recommendations.
2. Furnace and boiler equipment of residential R-3 type with 200,000 British thermal units (Btu) (2.11 × 10⁸ J) per hour input rating or less is not required to be enclosed.
3. Furnace rooms protected with automatic sprinkler protection.

3417.5 (IEBC 903.1) Existing shafts and vertical openings. Existing stairways that are part of the means of egress shall be enclosed in accordance with Section 3416.5.1.1 from the highest *work area* floor to, and including, the level of exit discharge and all floors below.

3417.6 (IEBC 903.2) Fire partitions in Group R-3. Fire separation in Group R-3 occupancies shall be in accordance with Section 3417.6.1.

3417.6.1 (IEBC 903.2.1) Separation required. Where the *work area* is in any attached dwelling unit in Group R-3 or any multiple single-family dwelling (townhouse), walls separating the dwelling units that are not continuous from the foundation to the underside of the roof sheathing shall be constructed to provide a continuous fire separation using construction materials consistent with the existing wall or complying with the requirements for new structures. All work shall be performed on the side of the dwelling unit wall that is part of the *work area*.

Exception: Where alterations or repairs do not result in the removal of wall or ceiling finishes exposing the structure, walls are not required to be continuous through concealed floor spaces.

3417.7 (IEBC 903.3) Interior finish. Interior finish in exits serving the work area shall comply with Section 3416.5.3 between the highest floor on which there is a work area to the floor of exit discharge.

3417.8 (IEBC 904.1) Automatic sprinkler systems. Automatic sprinkler systems shall be provided in all work areas when required by Section 3416.6.2 or this section.

3417.8.1 (IEBC 904.1.1) High-rise buildings. In high-rise buildings, work areas shall be provided with automatic sprinkler protection where the building has a sufficient municipal water supply system to the site. Where the work area exceeds 50 percent of floor area, sprinklers shall be provided in the specified areas where sufficient municipal water supply for design and installation of a fire sprinkler system is available at the site.

3417.8.2 (IEBC 904.1.2) Rubbish and linen chutes. Rubbish and linen chutes located in the work area shall be provided with automatic sprinkler system protection or an approved automatic fire-extinguishing system where protection of the rubbish and linen chute would be required under the provisions of Chapter 9 for new construction.

3417.9 (IEBC 904.2) Fire alarm and detection systems. Fire alarm and detection systems complying with Sections 3416.6.4.1.1 and 3416.6.4.3 shall be provided throughout the building in accordance with Chapter 9.

3417.9.1 (IEBC 904.2.1) Manual fire alarm systems. Where required by other provisions of this code, a manual fire alarm system shall be provided throughout the work area. Alarm notification appliances shall be provided on such floors and shall be automatically activated as required by Chapter 9.

Exceptions:

1. Alarm-initiating and notification appliances shall not be required to be installed in tenant spaces outside of the work area.
2. Visual alarm notification appliances are not required, except where an existing alarm system is upgraded or replaced or where a new fire alarm system is installed.

3417.9.2 (IEBC 904.2.2) Automatic fire detection. Where required by this code for new buildings, automatic fire detection systems shall be provided throughout the work area.

3417.10 (IEBC 905.1) Means of egress. The means of egress shall comply with the requirements of Section 3416.7 except as specifically required in Sections 3417.10.1 and 3417.10.2.

3417.10.1 (IEBC 905.2) Means-of-egress lighting. Means of egress from the highest work area floor to the floor of exit discharge shall be provided with artificial lighting within the exit enclosure in accordance with the requirements of Chapter 10.

3417.10.2 (IEBC 905.3) Exit signs. Means of egress from the highest work area floor to the floor of exit discharge shall be provided with exit signs in accordance with the requirements of Chapter 10.

3417.11 (IEBC 906.1) Accessibility. A building, facility or element that is altered shall comply with this section and Sections 3415.8 and 3416.8.

3417.11.1 (IEBC 906.2) Type B dwelling or sleeping units. Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered or added, the requirements of Section 1107 for Type B units and Chapter 9 for visible alarms apply only to the quantity of the spaces being altered or added.

3417.12 (IEBC [B] 907.1) Structural. Where buildings are undergoing Level 3 *alterations* including structural *alterations*, the provisions of this section shall apply.

3417.12.1 (IEBC [B] 907.2) New structural elements. New structural elements shall comply with Section 3416.9.1.

3417.12.2 (IEBC [B] 907.3) Existing structural elements carrying gravity loads. Existing structural elements carrying gravity loads shall comply with Section 3416.9.3.

3417.12.3 (IEBC [B] 907.4) Existing structural elements resisting lateral loads. All existing elements of the lateral force-resisting system shall comply with this section.

Exceptions:

1. Buildings of Group R occupancy with no more than five dwelling or sleeping units used solely for residential purposes that are altered based on the conventional light-frame construction methods of Chapter 16.
2. Where such *alterations* involve only the lowest story of a building and the *change of occupancy* provisions of Section 3418 do not apply, only the lateral force-resisting components in and below that story need comply with this section.

3417.12.3.1 (IEBC [B] 907.4.1) Evaluation and analysis. An engineering evaluation and analysis that establishes the structural adequacy of the altered structure shall be prepared by a registered design professional and submitted to the *building official*.

3417.12.3.2 (IEBC [B] 907.4.2) Substantial structural alteration. Where more than 30 percent of the total floor and roof areas of the building or structure have been or are proposed to be involved in structural *alteration* within a five-year period, the evaluation and analysis shall demonstrate that the altered building or structure complies with Chapter 16 for wind loading and with reduced Chapter 16-level seismic forces. The areas to be counted toward the 30 percent shall be those areas tributary to the vertical load-carrying components, such as joists, beams, columns, walls and other structural components that have been or will be removed, added or altered, as well as areas such as mezzanines, penthouses, roof structures and in-filled courts and shafts.

3417.12.3.3 (IEBC [B] 907.4.3) Limited structural alteration. Where the work does not involve a substantial structural *alteration*, the existing elements of the lateral load-resisting system shall comply with Section 3416.9.4.

3417.12.3.4 (IEBC [B] 907.4.4) Wall anchors for concrete and masonry buildings. For any building assigned to Seismic Design Category D, E or F with a structural system consisting of concrete or reinforced masonry walls with a flexible roof diaphragm or unreinforced masonry walls with any type of roof diaphragm, the alteration work shall include installation of wall anchors at the roof line to resist the reduced Chapter 16-level seismic forces, unless an evaluation demonstrates compliance of existing wall anchorage.

3417.12.3.5 (IEBC [B] 907.4.5) Bracing for unreinforced masonry parapets. Parapets constructed of unreinforced masonry in buildings assigned to Seismic Design Category D, E or F shall have bracing installed as needed to resist the reduced Chapter 16-level seismic forces, unless an evaluation demonstrates compliance of such items.

**SECTION 3418 (IEBC CHAPTER 10)
CHANGE OF OCCUPANCY**

3418.1 (IEBC 1001.1) Scope. The provisions of this section shall apply where a *change of occupancy* occurs, including:

1. Where the occupancy classification is not changed; or
2. Where there is a change in occupancy classification or the occupancy group designation changes.

3418.2 (IEBC 1001.2) Change in occupancy with no change of occupancy classification. A change in occupancy with no change in occupancy classification shall not be made to any structure that will subject the structure to any special provisions of this code, including the provisions of Sections 3418.5 through 3418.14, without the approval of the *building official*. A certificate of occupancy shall be issued where it has been determined that the requirements for the change in occupancy have been met.

3418.2.1 (IEBC 1001.2.1) Repair and alteration with no change of occupancy classification. Any repair or alteration work undertaken in connection with a change of occupancy that does not involve a change in occupancy classification shall conform to the applicable requirements for the work as classified in Section 3413 and to the requirements of Sections 3418.5 through 3418.14.

Exception: As modified in Section 3420.21 for *historic buildings*.

3418.3 (IEBC 1001.3) Change of occupancy classification. Where the occupancy classification of a building changes, the provisions of Sections 3418.5 through 3418.15 shall apply. This includes a change of occupancy classification within a group as well as a change of occupancy classification from one group to a different group.

3418.3.1 (IEBC 1001.3.1) Partial change of occupancy classification. Where a portion of an existing building is changed to a new occupancy classification, Section 3418.1.15 shall apply.

3418.4 (IEBC 1001.4) Certificate of occupancy required. A certificate of occupancy shall be issued where a change of occupancy occurs that results in a different occupancy classification.

3418.5 (IEBC 1002.1) Special use and occupancy. Where the character or use of an existing building or part of an existing building is changed to one of the following special use or occupancy categories, the building shall comply with all of the applicable requirements of this code:

1. Covered and open mall buildings.
2. Atriums.
3. Motor vehicle-related occupancies.
4. Aircraft-related occupancies.
5. Motion picture projection rooms.
6. Stages and platforms.
7. Special amusement buildings.
8. Incidental use areas.
9. Hazardous materials.
10. Ambulatory care facilities.

3418.6 (IEBC 1002.2) Underground buildings. An underground building in which there is a change of use shall comply with the requirements of this code applicable to underground structures.

3418.7 (IEBC 1003.1) Building elements and materials. Building elements and materials in portions of buildings undergoing a change in occupancy classification shall comply with Section 3418.15.

3418.8 (IEBC 1004.1) Fire protection. Fire protection requirements of Section 3418.15 shall apply where a building or portions thereof undergo a change in occupancy classification.

3418.9 (IEBC 1005.1) Means of egress. Means of egress in portions of buildings undergoing a change in occupancy classification shall comply with Section 3418.15.

3418.10 (IEBC 1006.1) Accessibility. Accessibility in portions of buildings undergoing a change in occupancy classification shall comply with Section 3418.15.11.

3418.11 (IEBC [B] 1007.1) Gravity loads. Buildings or portions thereof subject to a *change of occupancy* where such change in the nature of occupancy results in higher uniform or concentrated loads based on Table 1607.1 shall comply with the gravity load provisions of this code.

Exception: Structural elements whose stress is not increased by more than 5 percent.

3418.12 (IEBC [B] 1007.2) Snow and wind loads. Buildings and structures subject to a *change of occupancy* where such change in the nature of occupancy results in higher wind or snow risk categories based on Table 1604.5 shall be analyzed and shall comply with the applicable wind or snow load provisions of this code.

Exception: Where the new occupancy with a higher risk category is less than or equal to 10 percent of the total building floor area. The cumulative effect of the area of occupancy changes shall be considered for the purposes of this exception.

3418.13 (IEBC [B] 1007.3) Seismic loads. Existing buildings with a *change of occupancy* shall comply with the seismic provisions of Sections 3418.13.1 and 3418.13.2.

3418.13.1 (IEBC [B] 1007.3.1) Compliance with Chapter 16 level seismic forces. Where a building or portion thereof is subject to a *change of occupancy* that results in the building being assigned to a higher risk category based on Table 1604.5; or where such *change of occupancy* results in a reclassification of a building to a higher hazard category as shown in Table 3418.15.7; or where a change of a Group M occupancy to a Group A, E, I-1, R-1, R-2 or R-4 occupancy with two-thirds or more of the floors involved in Level 3 *alteration work*, the building shall comply with the requirements for Chapter 16 level seismic forces as specified in Section 3401.6.4.1 for the new risk category.

Exceptions:

1. Group M occupancies being changed to Group A, E, I-1, R-1, R-2 or R-4 occupancies for buildings less than six stories in height and in Seismic Design Category A, B or C.
2. Where approved by the *building official*, specific detailing provisions required for a new structure are not required to be met where it can be shown that an equivalent level of performance and seismic safety is obtained for the applicable risk category based on the provision for reduced Chapter 16 level seismic forces as specified in Section 3401.6.4.2.
3. Where the area of the new occupancy with a higher hazard category is less than or equal to 10 percent of the total building floor area and the new occupancy is not classified as Risk Category IV. For the purposes of this exception, buildings occupied by two or more occupancies not included in the same Risk category, shall be subject to the provisions of Section 1604.5.1. The cumulative effect of the area of occupancy changes shall be considered for the purposes of this exception.
4. Unreinforced masonry bearing wall buildings in Risk Category III when assigned to Seismic Design Category A or B shall be allowed to be strengthened to meet the requirements of Appendix Chapter A1 of the *International Existing Building Code* [Guidelines for the Seismic Retrofit of Existing Buildings (GSREB)].

3418.13.2 (IEBC [B] 1007.3.2) Access to Risk Category IV. Where a *change of occupancy* is such that compliance with Section 3418.13.1 is required and the building is assigned to Risk Category IV, the operational access to the building shall not be through an adjacent structure, unless that structure conforms to the requirements for Risk Category IV structures. Where operational access is less than 10 feet (3048 mm) from either an interior lot line or from another structure, access protection from potential falling debris shall be provided by the owner of the Risk Category IV structure.

3418.14 (IEBC 1011.1) Light and ventilation. Light and ventilation shall comply with the requirements of this code for the new occupancy.

3418.15 (IEBC 1012.1) Change of occupancy classification. The provisions of this section shall apply to buildings or portions thereof undergoing a change of occupancy classification. This includes a change of occupancy classification within a group as well as a change of occupancy classification from one group to a different group. Such buildings shall also comply with Sections 3418.5 through 3418.14.

3418.15.1 (IEBC 1012.1.1) Compliance with Section 3417. The requirements of Section 3417 shall be applicable throughout the building for the new occupancy classification based on the separation conditions set forth in Sections 3418.15.1.1 and 3418.15.1.2.

3418.15.1.1 (IEBC 1012.1.1.1) Change of occupancy classification without separation. Where a portion of an *existing building* is changed to a new occupancy classification and that portion is not separated from the remainder of the building with fire barriers having a fire-resistance rating as required for the separate occupancy, the entire building shall comply with all of the requirements of Section 3417 applied throughout the building for the most restrictive occupancy classification in the building and with the requirements of this section.

3418.15.1.2 (IEBC 1012.1.1.2) Change of occupancy classification with separation. Where a portion of an *existing building* that is changed to a new occupancy classification and that portion is separated from the remainder of the building with fire barriers having a fire-resistance rating as required for the separate occupancy, that portion shall comply with all of the requirements of Section 3417 for the new occupancy classification and with the requirements of this section.

3418.15.2 (IEBC 1012.1.2) Fire protection and interior finish. The provisions of Sections 3418.15.5 and 3418.15.6 for fire protection and interior finish, respectively, shall apply to all buildings undergoing a change of occupancy classification.

3418.15.3 (IEBC 1012.1.3) Change of occupancy classification based on hazard category. The relative degree of hazard between different occupancy classifications shall be determined in accordance with the categories specified in Tables 3418.15.7, 3415.15.8 and 3418.15.9. Such a determination shall be the basis for the application of Sections 3418.15.7 through 3418.15.10.

3418.15.4 (IEBC 1012.1.4) Accessibility. All buildings undergoing a change of occupancy classification shall comply with Section 3418.15.11.

3418.15.5 (IEBC 1012.2) Fire protection systems. Fire protection systems shall be provided in accordance with Sections 3418.15.5.1 and 3418.15.5.2.

3418.15.5.1 (IEBC 1012.2.1) Fire sprinkler system. Where a change in occupancy classification occurs that requires an automatic fire sprinkler system to be provided based on the new occupancy in accordance with Chapter 9, such system shall be provided throughout the area where the *change of occupancy* occurs.

3418.15.5.2 (IEBC 1012.2.2) Fire alarm and detection system. Where a change in occupancy classification occurs that requires a fire alarm and detection system to be provided based on the new occupancy in accordance with Chapter 9, such system shall be provided throughout the area where the *change of occupancy* occurs. Existing alarm notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm notification appliances shall be provided throughout the area where the *change of occupancy* occurs and shall be automatically activated.

3418.15.6 (IEBC 1012.3) Interior finish. In areas of the building undergoing the change of occupancy classification, the interior finish of walls and ceilings shall comply with the requirements for the new occupancy classification.

3418.15.7 (IEBC 1012.4) Means of egress, general. Hazard categories in regard to life safety and means of egress shall be in accordance with Table 3418.5.7.

**TABLE 3418.15.7 (IEBC TABLE 1012.4)
MEANS OF EGRESS HAZARD CATEGORIES**

<u>RELATIVE HAZARD</u>	<u>OCCUPANCY CLASSIFICATIONS</u>
1 (Highest Hazard)	H
2	I-2, I-3, I-4
3	A, E, I-1, M, R-1, R-2, R-4
4	B, F-1, R-3, S-1
5 (Lowest Hazard)	F-2, S-2, U

3418.15.7.1 (IEBC 1012.4.1) Means of egress for change to higher hazard category. When a change of occupancy classification is made to a higher hazard category (lower number) as shown in Table 3418.15.7, the means of egress shall comply with the requirements of Chapter 10.

Exceptions:

1. Stairways shall be enclosed in compliance with the applicable provisions of Section 3417.5.
2. Existing stairways including handrails and guards complying with the requirements of Section 3417 shall be permitted for continued use subject to approval of the *building official*.
3. Any stairway replacing an existing stairway within a space where the pitch or slope cannot be reduced because of existing construction shall not be required to comply with the maximum riser height and minimum tread depth requirements.
4. Existing corridor walls constructed on both sides of wood lath and plaster in good condition or 1/2-inch-thick (12.7 mm) gypsum wallboard shall be permitted. Such walls shall either terminate at the underside of a ceiling of equivalent construction or extend to the underside of the floor or roof next above.
5. Existing corridor doorways, transoms and other corridor openings shall comply with the requirements in Sections 3416.7.4.1, 3416.7.4.2 and 3416.7.4.3.
6. Existing dead-end corridors shall comply with the requirements in Section 805.6.
7. An existing operable window with clear opening area no less than 4 square feet (0.38 m²) and minimum opening height and width of 22 inches (559 mm) and 20 inches (508 mm), respectively, shall be allowed as an emergency escape and rescue opening.

3418.15.7.2 (IEBC 1012.4.2) Means of egress for change of use to equal or lower hazard category. When a change of occupancy classification is made to an equal or lesser hazard category (higher number) as shown in Table 3418.15.7, existing elements of the means of egress shall comply with the requirements of Section 3417.10 for the new occupancy classification. Newly constructed or configured means of egress shall comply with the requirements of Chapter 10.

Exception: Any stairway replacing an existing stairway within a space where the pitch or slope cannot be reduced because of existing construction shall not be required to comply with the maximum riser height and minimum tread depth requirements.

3418.15.7.3 (IEBC 1012.4.3) Egress capacity. Egress capacity shall meet or exceed the occupant load as specified for the new occupancy.

3418.15.7.4 (IEBC 1012.4.4) Handrails. Existing stairways shall comply with the handrail requirements of Section 3416.7.8 in the area of the change of occupancy classification.

3418.15.7.5 (IEBC 1012.4.5) Guards. Existing guards shall comply with the requirements in Section 3416.7.9 in the area of the change of occupancy classification.

3418.15.8 (IEBC 1012.5) Heights and areas. Hazard categories in regard to height and area shall be in accordance with Table 3418.15.8.

**TABLE 3418.15.8 (IEBC TABLE 1012.5)
HEIGHTS AND AREAS HAZARD CATEGORIES**

<u>RELATIVE HAZARD</u>	<u>OCCUPANCY CLASSIFICATIONS</u>
<u>1 (Highest Hazard)</u>	<u>H</u>
<u>2</u>	<u>A-1, A-2, A-3, A-4, I, R-1, R-2, R-4</u>
<u>3</u>	<u>E, F-1, S-1, M</u>
<u>4 (Lowest Hazard)</u>	<u>B, F-2, S-2, A-5, R-3, U</u>

3418.15.8.1 (IEBC 1012.5.1) Height and area for change to higher hazard category. When a change of occupancy classification is made to a higher hazard category as shown in Table 3418.15.8, heights and areas of buildings and structures shall comply with the requirements of Chapter 5 for the new occupancy classification.

Exception: In other than Groups H, F-1 and S-1, in lieu of fire walls, use of fire barriers having a fire-resistance rating of not less than that specified in Table 706.4, constructed in accordance with Section 707, shall be permitted to meet area limitations required for the new occupancy in buildings protected throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

3418.15.8.1.1 (IEBC 1012.5.1.1) Fire wall alternative. In other than Groups H, F-1 and S-1, fire barriers and horizontal assemblies constructed in accordance with Sections 707 and 711, respectively, shall be permitted to be used in lieu of fire walls to subdivide the building into separate buildings for the purpose of complying with the area limitations required for the new occupancy where all of the following conditions are met:

1. The buildings are protected throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
2. The maximum allowable area between fire barriers, horizontal assemblies, or any combination thereof shall not exceed the maximum allowable area determined in accordance with Chapter 5 without an increase allowed for an automatic sprinkler system in accordance with Section 506.
3. The fire-resistance rating of the fire barriers and horizontal assemblies shall not be less than that specified for fire walls in Table 706.4.

Exception: Where horizontal assemblies are used to limit the maximum allowable area, the required fire-resistance rating of the horizontal assemblies shall be permitted to be reduced by 1 hour provided the height and number of stories increases allowed for an automatic sprinkler system by Section 504.2 are not used for the buildings.

3418.15.8.2 (IEBC 1012.5.2) Height and area for change to equal or lesser hazard category. When a change of occupancy classification is made to an equal or lesser hazard category as shown in Table 3418.15.8, the height and area of the *existing building* shall be deemed acceptable.

3418.15.8.3 (IEBC 1012.5.3) Fire barriers. When a change of occupancy classification is made to a higher hazard category as shown in Table 3418.15.8, fire barriers in separated mixed use buildings shall comply with the fire-resistance requirements of this code.

Exception: Where the fire barriers are required to have a 1-hour fire-resistance rating, existing wood lath and plaster in good condition or existing 1/2-inch-thick (12.7 mm) gypsum wallboard shall be permitted.

3418.15.9 (IEBC 1012.6) Exterior wall fire-resistance ratings. Hazard categories in regard to fire-resistance ratings of exterior walls shall be in accordance with Table 3418.15.9.

**TABLE 3418.15.9 (IEBC TABLE 1012.6)
EXPOSURE OF EXTERIOR WALLS HAZARD CATEGORIES**

<u>RELATIVE HAZARD</u>	<u>OCCUPANCY CLASSIFICATIONS</u>
1 (Highest Hazard)	H
2	F-1, M, S-1
3	A, B, E, I, R
4 (Lowest Hazard)	F-2, S-2, U

3418.15.9.1 (IEBC 1012.6.1) Exterior wall rating for change of occupancy classification to a higher hazard category. When a change of occupancy classification is made to a higher hazard category as shown in Table 3418.15.9, exterior walls shall have fire resistance and exterior opening protectives as required by this code.

Exception: A 2-hour fire-resistance rating shall be allowed where the building does not exceed three stories in height and is classified as one of the following groups: A-2 and A-3 with an occupant load of less than 300, B, F, M or S.

3418.15.9.2 (IEBC 1012.6.2) Exterior wall rating for change of occupancy classification to an equal or lesser hazard category. When a change of occupancy classification is made to an equal or lesser hazard category as shown in Table 3418.15.9, existing exterior walls, including openings, shall be accepted.

3418.15.9.3 (IEBC 1012.6.3) Opening protectives. Openings in exterior walls shall be protected as required by this code. Where openings in the exterior walls are required to be protected because of their distance from the lot line, the sum of the area of such openings shall not exceed 50 percent of the total area of the wall in each story.

Exceptions:

1. Where this code permits openings in excess of 50 percent.
2. Protected openings shall not be required in buildings of Group R occupancy that do not exceed three stories in height and that are located not less than 3 feet (914 mm) from the lot line.
3. Where exterior opening protectives are required, an automatic sprinkler system throughout may be substituted for opening protection.
4. Exterior opening protectives are not required when the change of occupancy group is to an equal or lower hazard classification in accordance with Table 3418.15.9.

3418.15.10 (IEBC 1012.7) Enclosure of vertical shafts. Enclosure of vertical shafts shall be in accordance with Sections 3418.15.10.1 through 3418.15.10.4.

3418.15.10.1 (IEBC 1012.7.1) Minimum requirements. Vertical shafts shall be designed to meet the requirements of this code for atriums or this section.

3418.15.10.2 (IEBC 1012.7.2) Stairways. When a change of occupancy classification is made to a higher hazard category as shown in Table 3418.15.7, interior stairways shall be enclosed as required by this code.

Exceptions:

1. In other than Group I occupancies, an enclosure shall not be required for openings serving only one adjacent floor and that are not connected with corridors or stairways serving other floors.
2. Unenclosed existing stairways need not be enclosed in a continuous vertical shaft if each story is separated from other stories by 1-hour fire-resistance-rated construction or approved

wired glass set in steel frames and all exit corridors are sprinklered. The openings between the corridor and the occupant space shall have at least one sprinkler head above the openings on the tenant side. The sprinkler system shall be permitted to be supplied from the domestic water supply systems, provided the system is of adequate pressure, capacity, and sizing for the combined domestic and sprinkler requirements.

3. Existing penetrations of stairway enclosures shall be accepted if they are protected in accordance with this code.

3418.15.10.3 (IEBC 1012.7.3) Other vertical shafts. Interior vertical shafts other than stairways, including but not limited to elevator hoistways and service and utility shafts, shall be enclosed as required by this code when there is a change of use to a higher hazard category as specified in Table 3418.15.7.

Exceptions:

1. Existing 1-hour interior shaft enclosures shall be accepted where a higher rating is required.
2. Vertical openings, other than stairways, in buildings of other than Group I occupancy and connecting less than six stories shall not be required to be enclosed if the entire building is provided with an approved automatic sprinkler system.

3418.15.10.4 (IEBC 1012.7.4) Openings. All openings into existing vertical shaft enclosures shall be protected by fire assemblies having a fire protection rating of not less than 1 hour and shall be maintained self-closing or shall be automatic-closing by actuation of a smoke detector. All other openings shall be fire protected in an approved manner. Existing fusible link-type automatic door-closing devices shall be permitted in all shafts except stairways if the fusible link rating does not exceed 135°F (57°C).

3418.15.11 (IEBC 1012.8) Accessibility. Existing buildings that undergo a change of group or occupancy classification shall comply with this section.

Exception: Type B dwelling or sleeping units required by Section 1107 are not required to be provided in existing buildings and facilities undergoing a *change of occupancy* in conjunction with less than a Level 3 *alteration*.

3418.15.11.1 (IEBC 1012.8.1) Partial change in occupancy. Where a portion of the building is changed to a new occupancy classification, any *alteration* shall comply with Sections 3415.8, 3416.8 and 3417.11, as applicable.

3418.15.11.2 (IEBC 1012.8.2) Complete change of occupancy. Where an entire building undergoes a *change of occupancy*, it shall comply with Section 3418.15.11.1 and shall have all of the following accessible features:

1. At least one accessible building entrance.
2. At least one accessible route from an accessible building entrance to *primary function areas*.
3. Signage complying with Section 1110.
4. Accessible parking, where parking is provided.
5. At least one accessible passenger loading zone, where loading zones are provided.
6. At least one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.

Where it is *technically infeasible* to comply with the new construction standards for any of these requirements for a change of group or occupancy, the above items shall conform to the requirements to the maximum extent technically feasible.

Exception: The accessible features listed in Items 1 through 6 are not required for an accessible route to Type B units.

SECTION 3419 (IEBC CHAPTER 11)
ADDITIONS

3419.1 (IEBC 1101.1) Scope. An addition to a building or structure shall comply with this code as adopted for new construction without requiring the existing building or structure to comply with any requirements of this code or of these provisions, except as required by this section. Where an addition impacts the existing building or structure, that portion shall comply with this code.

3419.2 (IEBC 1101.2) Creation or extension of nonconformity. An addition shall not create or extend any nonconformity in the existing building to which the addition is being made with regard to accessibility, structural strength, fire safety, means of egress.

3419.3 (IEBC 1101.3) Other work. Any repair or alteration work within an existing building to which an addition is being made shall comply with the applicable requirements for the work as classified in Section 3413.

3419.4 (IEBC 1102.1) Height limitations. No addition shall increase the height of an existing building beyond that permitted under the applicable provisions of Chapter 5 for new buildings.

3419.5 (IEBC 1102.2) Area limitations. No addition shall increase the area of an existing building beyond that permitted under the applicable provisions of Chapter 5 for new buildings unless fire separation as required by this code is provided.

Exception: In-filling of floor openings and nonoccupiable appendages such as elevator and exit stair shafts shall be permitted beyond that permitted by this code.

3419.6 (IEBC 1102.3) Fire protection systems. Existing fire areas increased by the addition shall comply with Chapter 9.

3419.7 (IEBC [B] 1103.1) Structural. Additions to existing buildings or structures are new construction and shall comply with this code.

3419.7.1 (IEBC [B] 1103.2) Additional gravity loads. Existing structural elements supporting any additional gravity loads as a result of additions shall comply with this code.

Exceptions:

1. Structural elements whose stress is not increased by more than 5 percent.
2. Buildings of Group R occupancy with no more than five dwelling units or sleeping units used solely for residential purposes where the existing building and the addition comply with the conventional light-frame construction methods of this code.

3419.7.2 (IEBC [B] 1103.3) Lateral force-resisting system. The lateral force-resisting system of existing buildings to which additions are made shall comply with Sections 3419.7.2.1, 3419.7.2.2 and 3419.7.2.3.

Exceptions:

1. Buildings of Group R occupancy with no more than five dwelling or sleeping units used solely for residential purposes where the existing building and the addition comply with the conventional light-frame construction methods of this code.
2. In other existing buildings where the lateral-force story shear in any story is not increased by more than 10 percent cumulative.

3419.7.2.1 (IEBC [B] 1103.3.1) Vertical addition. Any element of the lateral force-resisting system of an existing building subjected to an increase in vertical or lateral loads from the vertical addition shall comply

with the wind provisions of Chapter 16 and the IBC-level seismic forces specified in Section 3401.6.4.1 of this code.

3419.7.2.2 (IEBC [B] 1103.3.2) Horizontal addition. Where horizontal additions are structurally connected to an existing structure, all lateral force-resisting elements of the existing structure affected by such addition shall comply with the wind provisions of Chapter 16 and the IBC level seismic forces specified in Section 3401.6.4.1 of this code.

3419.7.2.3 (IEBC [B] 1103.3.3) Voluntary addition of structural elements to improve the lateral force-resisting system. Voluntary addition of structural elements to improve the lateral force-resisting system of an existing building shall comply with Section 3416.9.5.

3419.7.3 (IEBC [B] 1103.4) Snow drift loads. Any structural element of an existing building subjected to additional loads from the effects of snow drift as a result of an addition shall comply with this code.

Exceptions:

1. Structural elements whose stress is not increased by more than 5 percent.
2. Buildings of Group R occupancy with no more than five dwelling units or sleeping units used solely for residential purposes where the existing building and the addition comply with the conventional light-frame construction methods of this code.

3419.7.4 (IEBC [B] 1103.5) Flood hazard areas. Additions and foundations in flood hazard areas shall comply with the following requirements:

1. For horizontal additions that are structurally interconnected to the existing building:
 - 1.1. If the addition and all other proposed work, when combined, constitute substantial improvement, the existing building and the addition shall comply with Section 1612.
 - 1.2. If the addition constitutes substantial improvement, the existing building and the addition shall comply with Section 1612.
2. For horizontal additions that are not structurally interconnected to the existing building:
 - 2.1. The addition shall comply with Section 1612.
 - 2.2. If the addition and all other proposed work, when combined, constitute substantial improvement, the existing building and the addition shall comply with Section 1612.
3. For vertical additions and all other proposed work that, when combined, constitute substantial improvement, the existing building shall comply with Section 1612.
4. For a new, replacement, raised, or extended foundation, if the foundation work and all other proposed work, when combined, constitute substantial improvement, the existing building shall comply with Section 1612.

3419.8 (IEBC [B] 1104.1) Smoke alarms in existing portions of Group R and I-1 buildings. Where an addition is made to a building or structure of a Group R or I-1 occupancy, the existing building shall be provided with smoke alarms as required by Section 1103.8 of the International Fire Code.

3419.9 (IEBC [B] 1105.1) Accessibility. Accessibility provisions for new construction shall apply to additions. An addition that affects the accessibility to, or contains an area of, primary function shall comply with the requirements of Sections 3415.8, 3416.8 and 3417.11, as applicable.

SECTION 3420 (IEBC CHAPTER 12)
HISTORIC BUILDINGS

3420.1 (IEBC 1201.1) Scope. It is the intent of this section to provide means for the preservation of historic buildings. Historical buildings shall comply with the provisions of this section relating to their repair, alteration, relocation and change of occupancy.

3420.2 (IEBC [B] 1201.2) Report. A historic building undergoing repair, alteration, or change of occupancy shall be investigated and evaluated. If it is intended that the building meet the requirements of this section, a written report shall be prepared and filed with the building official by a registered design professional when such a report is necessary in the opinion of the building official. Such report shall identify each required safety feature that is in compliance with this section and where compliance with other sections of these provisions would be damaging to the contributing historic features. For buildings assigned to Seismic Design Category D, E or F, a structural evaluation describing, at a minimum, the vertical and horizontal elements of the lateral force-resisting system and any strengths or weaknesses therein shall be prepared. Additionally, the report shall describe each feature that is not in compliance with these provisions and shall demonstrate how the intent of these provisions is complied with in providing an equivalent level of safety.

3420.3 (IEBC 1201.3) Special occupancy exceptions—museums. When a building in Group R-3 is also used for Group A, B, or M purposes such as museum tours, exhibits, and other public assembly activities, or for museums less than 3,000 square feet (279 m²), the building official may determine that the occupancy is Group B when life-safety conditions can be demonstrated in accordance with Section 3420.2. Adequate means of egress in such buildings, which may include a means of maintaining doors in an open position to permit egress, a limit on building occupancy to an occupant load permitted by the means of egress capacity, a limit on occupancy of certain areas or floors, or supervision by a person knowledgeable in the emergency exiting procedures, shall be provided.

3420.4 (IEBC [B] 1201.4) Flood hazard areas. In flood hazard areas, if all proposed work, including repairs, work required because of a change of occupancy, and alterations, constitutes substantial improvement, then the existing building shall comply with Section 1612.

Exception: If an historic building will continue to be an historic building after the proposed work is completed, then the proposed work is not considered a substantial improvement. For the purposes of this exception, an historic building is:

1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places;
2. Determined by the Secretary of the U.S. Department of Interior to contribute to the historical significance of a registered historic district or a district preliminarily determined to qualify as a historic district; or
3. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.

3420.5 (IEBC 1202.1) Repairs. Repairs to any portion of an historic building or structure shall be permitted with original or like materials and original methods of construction, subject to the provisions of this section. Hazardous materials, such as asbestos and lead-based paint, shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

3420.6 (IEBC 1202.2) Unsafe conditions. Conditions determined by the building official to be unsafe shall be remedied. No work shall be required beyond what is required to remedy the unsafe conditions.

3420.7 (IEBC 1202.3) Relocated buildings. Foundations of relocated historic buildings and structures shall comply with this code. Relocated historic buildings shall otherwise be considered an historic building for the purposes of this code. Relocated historic buildings and structures shall be sited so that exterior wall and opening requirements comply with this code.

3420.8 (IEBC 1202.4) Replacement. Replacement of existing or missing features using original materials shall be permitted. Partial replacement for repairs that match the original in configuration, height, and size shall be permitted. Replacement glazing in hazardous locations shall comply with the safety glazing requirements of Chapter 24.

Exception: Glass block walls, louvered windows, and jalousies repaired with like materials.

3420.9 (IEBC 1203.2) Fire extinguishing systems. Every *historic building* that does not conform to the construction requirements specified in this code for the occupancy or use and that constitutes a distinct fire hazard as defined herein shall be provided with an approved automatic fire-extinguishing system as determined appropriate by the *building official*. However, an automatic fire-extinguishing system shall not be used to substitute for, or act as an alternative to, the required number of exits from any *facility*.

3420.10 (IEBC 1203.3) Means of egress. Existing door openings and corridor and stairway widths less than those specified elsewhere in this code may be approved, provided that, in the opinion of the *building official*, there is sufficient width and height for a person to pass through the opening or traverse the means of egress. When approved by the *building official*, the front or main exit doors need not swing in the direction of the path of exit travel, provided that other approved means of egress having sufficient capacity to serve the total occupant load are provided.

3420.11 (IEBC 1203.4) Transoms. In fully sprinklered buildings of Group R-1, R-2 or R-3 occupancy, existing transoms in corridors and other fire-resistance-rated walls may be maintained if fixed in the closed position. A sprinkler shall be installed on each side of the transom.

3420.12 (IEBC 1203.5) Interior finishes. The existing finishes of walls and ceilings shall be accepted when it is demonstrated that they are the historic finishes.

3420.13 (IEBC 1203.6) Stairway enclosure. In buildings of three stories or less, exit enclosure construction shall limit the spread of smoke by the use of tight-fitting doors and solid elements. Such elements are not required to have a fire-resistance rating.

3420.14 (IEBC 1203.7) One-hour fire-resistant assemblies. Where 1-hour fire-resistance-rated construction is required by these provisions, it need not be provided, regardless of construction or occupancy, where the existing wall and ceiling finish is wood or metal lath and plaster.

3420.15 (IEBC 1203.8) Glazing in fire-resistance-rated systems. Historic glazing materials are permitted in interior walls required to have a 1-hour fire-resistance rating where the opening is provided with approved smoke seals and the area affected is provided with an automatic sprinkler system.

3420.16 (IEBC 1203.9) Stairway railings. Grand stairways shall be accepted without complying with the handrail and guard requirements. Existing handrails and guards at all stairs shall be permitted to remain, provided they are not structurally *dangerous*.

3420.17 (IEBC 1203.10) Guards. Guards shall comply with Sections 3420.17.1 and 3420.17.2.

3420.17.1 (IEBC 1203.10.1) Height. Existing guards shall comply with the requirements of Section 3414.9.

3420.17.2 (IEBC 1203.10.2) Guard openings. The spacing between existing intermediate railings or openings in existing ornamental patterns shall be accepted. Missing elements or members of a guard may be replaced in a manner that will preserve the historic appearance of the building or structure.

3420.18 (IEBC 1203.11) Exit signs. Where exit sign or egress path marking location would damage the historic character of the building, alternative exit signs are permitted with approval of the *building official*. Alternative signs shall identify the exits and egress path.

3420.19 (IEBC 1203.12) Automatic fire-extinguishing systems. Every historical building that cannot be made to conform to the construction requirements specified in this code for the occupancy or use and that constitutes a distinct fire hazard shall be deemed to be in compliance if provided with an approved automatic fire-extinguishing system.

Exception: When the *building official* approves an alternative life-safety system.

3420.20 (IEBC 1204.1) Accessibility requirements. The provisions of Sections 3415.8, 3416.8 and 3417.11, as applicable, shall apply to facilities designated as historic structures that undergo *alterations*, unless *technically infeasible*. Where compliance with the requirements for accessible routes, entrances or toilet rooms would threaten or destroy the historic significance of the building or *facility*, as determined by the *building official*, the alternative requirements of Sections 3420.20.1 through 3420.20.4 for that element shall be permitted.

Exception: Type B dwelling or sleeping units required by Section 1107 are not required to be provided in historical buildings.

3420.20.1 (IEBC 1204.1.1) Site arrival points. At least one main entrance shall be accessible.

3420.20.2 (IEBC 1204.1.2) Multilevel buildings and facilities. An accessible route from an accessible entrance to public spaces on the level of the accessible entrance shall be provided.

3420.20.3 (IEBC 1204.1.3) Entrances. At least one main entrance shall be accessible.

Exceptions:

1. If a main entrance cannot be made accessible, an accessible nonpublic entrance that is unlocked while the building is occupied shall be provided; or
2. If a main entrance cannot be made accessible, a locked accessible entrance with a notification system or remote monitoring shall be provided.

3420.20.4 (IEBC 1204.1.4) Toilet and bathing facilities. Where toilet rooms are provided, at least one accessible family or assisted-use toilet room complying with Section 1109.2.1 shall be provided.

3420.21 (IEBC 1205.1) Change of occupancy. *Historic buildings* undergoing a *change of occupancy* shall comply with the applicable provisions of Section 3418, except as specifically permitted in this section. When Section 3418 requires compliance with specific requirements of Sections 3415, 3416 or 3417 and when those requirements are subject to the exceptions in Section 3419.4 through 3419.6, the same exceptions shall apply to this section.

3420.21.1 (IEBC 1205.2) Building area. The allowable floor area for *historic buildings* undergoing a *change of occupancy* shall be permitted to exceed by 20 percent the allowable areas specified in Chapter 5.

3420.21.2 (IEBC 1205.3) Location on property. Historic structures undergoing a change of use to a higher hazard category in accordance with Section 3418.15.9 may use alternative methods to comply with the fire-resistance and exterior opening protective requirements. Such alternatives shall comply with Section 3420.2.

3420.21.3 (IEBC 1205.4) Occupancy separation. Required occupancy separations of 1 hour may be omitted when the building is provided with an approved automatic sprinkler system throughout.

3420.21.4 (IEBC 1205.5) Roof covering. Regardless of occupancy or use group, roof-covering materials not less than Class C shall be permitted where a fire-retardant roof covering is required.

3420.21.5 (IEBC 1205.6) Means of egress. Existing door openings and corridor and stairway widths less than those that would be acceptable for non-historic buildings under these provisions shall be approved, provided that, in the opinion of the *building official*, there is sufficient width and height for a person to pass through the opening or traverse the exit and that the capacity of the exit system is adequate for the occupant load, or where other operational controls to limit occupancy are approved by the *building official*.

3420.21.6 (IEBC 1205.7) Door swing. When approved by the *building official*, existing front doors need not swing in the direction of exit travel, provided that other approved exits having sufficient capacity to serve the total occupant load are provided.

3420.21.7 (IEBC 1205.8) Transoms. In corridor walls required by these provisions to be fire-resistance rated, existing transoms may be maintained if fixed in the closed position, and fixed wired glass set in a steel frame or other approved glazing shall be installed on one side of the transom.

Exception: Transoms conforming to Section 3420.11 shall be accepted.

3420.21.8 (IEBC 1205.9) Finishes. Where interior finish materials are required to have a flame spread index of Class C or better, existing nonconforming materials shall be surfaced with approved fire-retardant paint or finish.

Exception: Existing nonconforming materials need not be surfaced with an approved fire-retardant paint or finish where the building is equipped throughout with an automatic sprinkler system installed in accordance with this code and the nonconforming materials can be substantiated as being historic in character.

3420.21.9 (IEBC 1205.10) One-hour fire-resistant assemblies. Where 1-hour fire-resistance-rated construction is required by these provisions, it need not be provided, regardless of construction or occupancy, where the existing wall and ceiling finish is wood lath and plaster.

3420.21.10 (IEBC 1205.11) Stairs and railings. Existing stairways shall comply with the requirements of these provisions. The *building official* shall grant alternatives for stairways and railings if alternative stairways are found to be acceptable or are judged to meet the intent of these provisions. Existing stairways shall comply with Section 3420.9 through 3420.19.

Exception: For buildings less than 3,000 square feet (279 m²), existing conditions are permitted to remain at all stairs and rails.

3420.21.11 (IEBC 1205.12) Exit signs. The *building official* may accept alternative exit sign locations where such signs would damage the historic character of the building or structure. Such signs shall identify the exits and exit path.

3420.21.12 (IEBC [B] 1205.13) Exit stair live load. Existing historic stairways in buildings changed to a Group R-1 or R-2 occupancy shall be accepted where it can be shown that the stairway can support a 75-pounds-per-square-foot (366 kg/m²) live load.

3420.21.13 (IEBC 1205.14) Natural light. When it is determined by the *building official* that compliance with the natural light requirements of Section 3418.14 will lead to loss of historic character or historic materials in the building, the existing level of natural lighting shall be considered acceptable.

3420.21.14 (IEBC 1205.15) Accessibility requirements. The provisions of Section 3418.15.11 shall apply to facilities designated as historic structures that undergo a *change of occupancy*, unless *technically infeasible*. Where compliance with the requirements for accessible routes, ramps, entrances, or toilet rooms would threaten or destroy the historic significance of the building or *facility*, as determined by the authority having jurisdiction, the alternative requirements of Sections 3420.1 through 3420.20.4 for those elements shall be permitted.

Exception: Type B dwelling or sleeping units required by Section 1107 are not required to be provided in historical buildings.

3420.22 (IEBC [B] 1206.1) Structural. *Historic buildings* shall comply with the applicable structural provisions for the work as classified in Section 3413.

Exception: The *building official* shall be authorized to accept existing floors and approve operational controls that limit the live load on any such floor.

3420.22.1 (IEBC [B] 1206.2) Dangerous conditions. Conditions determined by the *building official* to be *dangerous* shall be remedied. No work shall be required beyond what is required to remedy the *dangerous* condition.

SECTION 3421 (IEBC CHAPTER 13) **RELOCATED OR MOVED BUILDINGS**

3421.1 (IEBC 1301.1) Relocated or moved buildings. This section provides requirements for relocated or moved structures.

3421.2 (IEBC 1301.2) Conformance. The building shall be safe for human occupancy as determined by the *International Fire Code* and the *International Property Maintenance Code*. Any *repair, alteration, or change of occupancy* undertaken within the moved structure shall comply with the requirements of this code applicable to the work being performed. Any field-fabricated elements shall comply with the requirements of this code.

3421.3 (IEBC 1302.1) Location on the lot. The building shall be located on the lot in accordance with the requirements of this code.

3421.4 (IEBC [B] 1302.2) Foundation. The foundation system of relocated buildings shall comply with this code.

3421.4.1 (IEBC [B] 1302.2.1) Connection to the foundation. The connection of the relocated building to the foundation shall comply with this code.

3421.5 (IEBC [B] 1302.3) Wind loads. Buildings shall comply with the wind provisions of this code.

Exceptions:

1. Detached one- and two-family dwellings and Group U occupancies where wind loads at the new location are not higher than those at the previous location.
2. Structural elements whose stress is not increased by more than 10 percent.

3421.6 (IEBC [B] 1302.4) Seismic loads. Buildings shall comply with seismic provisions of this code at the new location as applicable.

Exceptions:

1. Structures in Seismic Design Categories A and B and detached one- and two-family dwellings in Seismic Design Categories A, B and C where the seismic loads at the new location are not higher than those at the previous location.
2. Structural elements whose stress is not increased by more than 10 percent.

3421.7 (IEBC [B] 1302.5) Snow loads. Structures shall comply with snow loads of this code where snow loads at the new location are higher than those at the previous location.

Exception: Structural elements whose stress is not increased by more than 5 percent.

3421.8 (IEBC [B] 1302.6) Flood hazard areas. If relocated or moved into a *flood hazard area*, structures shall comply with Section 1612.

3421.9 (IEBC [B] 1302.7) Required inspection and repairs. The *building official* is authorized to inspect, or to require approved professionals to inspect at the expense of the owner, the various structural

parts of a relocated building to verify that structural components and connections have not sustained structural damage. Any repairs required by the *building official* as a result of such inspection shall be made prior to the final approval.

SECTION K112 (IEBC SECTION 607) **REPAIRS**

Electrical

K112.1 (IEBC 607.1) Repairs. Existing electrical wiring and equipment undergoing *repair* shall be allowed to be repaired or replaced with like material.

K112.1.1 (IEBC 607.1.1) Receptacles. Replacement of electrical receptacles shall comply with the applicable requirements of Section 406.3(D) of NFPA 70.

K112.1.2 (IEBC 607.1.2) Plug fuses. Plug fuses of the Edison-base type shall be used for replacements only where there is no evidence of over fusing or tampering per applicable requirements of Section 240.51(B) of NFPA 70.

K112.1.3 (IEBC 607.1.3) Nongrounding-type receptacles. For replacement of nongrounding-type receptacles with grounding type receptacles and for branch circuits that do not have an equipment grounding conductor in the branch circuitry, the grounding conductor of a grounding-type receptacle outlet shall be permitted to be grounded to any accessible point on the grounding electrode system or to any accessible point on the grounding electrode conductor in accordance with Section 250.130(C) of NFPA 70.

K112.1.4 (IEBC 607.1.4) Group I-2 receptacles. Non-“hospital grade” receptacles in patient bed locations of Group I-2 shall be replaced with “hospital grade” receptacles, as required by NFPA 99 and Article 517 of NFPA 70.

K112.1.5 (IEBC 607.1.5) Grounding of appliances. Frames of electric ranges, wall-mounted ovens, counter-mounted cooking units, clothes dryers and outlet or junction boxes that are part of the existing branch circuit for these appliances shall be permitted to be grounded to the grounded circuit conductor in accordance with Section 250.140 of NFPA 70.

SECTION K113 (IEBC SECTION 808) **LEVEL 2 ALTERATIONS**

Electrical

K113.1 (IEBC 808.1) New installations. All newly installed electrical equipment and wiring relating to work done in any *work area* shall comply with the materials and methods requirements of Section 3415.

Exception: Electrical equipment and wiring in newly installed partitions and ceilings shall comply with all applicable requirements of NFPA 70.

K113.2 (IEBC 808.2) Existing installations. Existing wiring in all work areas in Group A-1, A-2, A-5, H and I occupancies shall be upgraded to meet the materials and methods requirements of Section 3415.

K113.3 (IEBC 808.3) Residential occupancies. In Group R-2, R-3 and R-4 occupancies, the requirements of Sections K113.3.1 through K113.3.7 shall be applicable only to work areas located within a dwelling unit.

K113.3.1 (IEBC 808.3.1) Enclosed areas. All enclosed areas, other than closets, kitchens, basements, garages, hallways, laundry areas, utility areas, storage areas and bathrooms shall have a minimum of two duplex receptacle outlets or one duplex receptacle outlet and one ceiling or wall-type lighting outlet.

K113.3.2 (IEBC 808.3.2) Kitchens. Kitchen areas shall have a minimum of two duplex receptacle outlets.

K113.3.3 (IEBC 808.3.3) Laundry areas. Laundry areas shall have a minimum of one duplex receptacle outlet located near the laundry equipment and installed on an independent circuit.

K113.3.4 (IEBC 808.3.4) Ground fault circuit interruption. Newly installed receptacle outlets shall be provided with ground fault circuit interruption as required by NFPA 70.

K113.3.5 (IEBC 808.3.5) Minimum lighting outlets. At least one lighting outlet shall be provided in every bathroom, hallway, stairway, attached garage, and detached garage with electric power, and to illuminate outdoor entrances and exits.

K113.3.6 (IEBC 808.3.6) Utility rooms and basements. At least one lighting outlet shall be provided in utility rooms and basements where such spaces are used for storage or contain equipment requiring service.

K113.3.7 (IEBC 808.37) Clearance for equipment. Clearance for electrical service equipment shall be provided in accordance with the NFPA 70.

SECTION K114 (IEBC SECTION 1008) **CHANGE OF OCCUPANCY**

Electrical

K114.1 (IEBC 1008.1) Special occupancies. Where the occupancy of an *existing building* or part of an *existing building* is changed to one of the following special occupancies as described in NFPA 70, the electrical wiring and equipment of the building or portion thereof that contains the proposed occupancy shall comply with the applicable requirements of NFPA 70 whether or not a *change of occupancy* group is involved:

1. Hazardous locations.
2. Commercial garages, repair, and storage.
3. Aircraft hangars.
4. Gasoline dispensing and service stations.
5. Bulk storage plants.
6. Spray application, dipping, and coating processes.
7. Health care facilities.
8. Places of assembly.
9. Theaters, audience areas of motion picture and television studios, and similar locations.
10. Motion picture and television studios and similar locations.
11. Motion picture projectors.
12. Agricultural buildings.

K114.2 (IEBC 1008.2) Unsafe conditions. Where the occupancy of an *existing building* or part of an *existing building* is changed, all unsafe conditions shall be corrected without requiring that all parts of the electrical system comply with NFPA 70.

K114.3 (IEBC 1008.3) Service upgrade. Where the occupancy of an *existing building* or part of an *existing building* is changed, electrical service shall be upgraded to meet the requirements of NFPA 70 for the new occupancy.

K114.4 (IEBC 1008.4) Number of electrical outlets. Where the occupancy of an *existing building* or part of an *existing building* is changed, the number of electrical outlets shall comply with NFPA 70 for the new occupancy.

Reason: This proposal copies the IEBC's work area compliance method into IBC Chapter 34, making the IBC's provisions for existing buildings complete. The IEBC has 3 methods of compliance for existing buildings— work area, prescriptive and performance. Two of these methods are copied directly from the IBC into the IEBC. The IBC, on the contrary, contains only 2 of the methods, lacking the work area method. This proposal copies the work area method into the IBC with no substantive changes to the IEBC provisions. They are merely copied into the IBC, with associated changes in numbering and other editorial and administrative revisions.

This proposal divides Chapter 34 into 4 parts. Part 1 is administrative, scoping and definitions—an arrangement similar to IBC Chapter 1. Part 1 includes existing Section 3401, 3402, and a new Section 3401.6, specifying that one of the 3 compliance methods must be chosen. Two new definitions from the IEBC are added—"change of occupancy" and "work area".

Part 2 includes existing Sections 3403 through 3411, which comprise the performance compliance method, the term used in the IEBC to describe this method. No changes to this compliance method are proposed.

Part 3 includes existing Section 3412, the performance compliance method, without any changes.

Part 4 is the work area method—each chapter of the IEBC is converted into a separate section.

The provisions of the IEBC work area method that are beyond the scope of the IBC are not included in this code change. For instance, this code change does not include provisions related to mechanical or plumbing systems, or energy conservation. The provisions related to electrical systems and equipment, however, are proposed to be added to IBC Appendix K.

The only change to the other IBC compliance methods is that new Section 3401.6.4 specifies seismic design and evaluation procedures that would apply to all compliance methods. It does not change what seismic design forces would be applied, but only specifies the procedures to be used in doing the design. Section 3401.6.4 specifies that either Chapter 16, ASCE 31 or ASCE 41 are to be the basis for seismic evaluations and design. Section 3401.6.4.1 clarifies how Chapter 16 is to be applied. These two changes will provide needed additional guidance for designers and code officials. Section 3401.6.4.2 specifies reduced seismic forces that can be used where the code specifically allows them. It is important to note that these reduced forces are only specifically allowed in the work area method.

Cost Impact: The code change proposal will not increase the cost of construction.

G202-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

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G203 – 12

202, 3401.1, 3410.1, 3410.2 (NEW); [IEBC (B0 401.1, 409.1, 409.2 (NEW))]

Proponent: Carl F. Baldassarra, P.E., FSFPE, Chair, ICC Code Technology Committee (CTC)

Revise as follows:

RELOCATABLE BUILDING. A partially or completely assembled building constructed and designed to be reused multiple times and transported to different building sites.

3401.1 (IEBC [B] 401.1) Scope. The provisions of this chapter shall control the *alteration, repair, addition* and change of occupancy, and the relocation of existing buildings and structures.

Exception: Existing *bleachers*, grandstands and folding and telescopic seating shall comply with ICC 300.

3410.1 (IEBC [B] 409.1) Conformance. Structures moved into or within the jurisdiction shall comply with the provisions of this code for new structures.

Exception: Existing relocatable buildings moved into or within the jurisdiction shall be permitted to comply with the provisions of Chapter 13 of the International Existing Building Code.

3410.2 (IEBC [B] 401.2) Additions and Alterations. Additions and alterations made to relocatable buildings shall comply with the applicable provisions of Section 3403 and 3404 or the International Existing Building Code.

Reason: Unlike site-built buildings, which are typically intended to remain on their original site for the life of the building, relocatable modular buildings are designed and intended for relocation, reuse and/or repurposing. Many states have statutes that govern the building and relocating of relocatable modular buildings. For those that do not have state mandated requirements, much confusion and inconsistency exists about the requirements for relocatable modular buildings as existing buildings.

The Modular Building Institute (MBI) (www.modular.org) estimates that there are over 600,000 code compliant relocatable buildings in use in North America today. While it is impossible to determine the exact amount owned by the public at large, MBI estimates that public school districts across North America collectively own and operate about 180,000 relocatable classrooms with the industry owning and leasing an additional 120,000. Additionally, the industry owns and leases approximately 280,000 relocatable buildings for various other business occupancies, including construction site offices and temporary sales offices.

The Code Technology Committee Study Group on Relocatable Modular Buildings identified a number of unique characteristics of relocatable modular buildings that are unlike site-built buildings and compared them to the IBC and the IEBC. Their findings are as follows:

- There are provisions of the IBC that are not applicable/appropriate to relocatable modular buildings. Specifically, there is an unintended conflict between the IBC Section 3410, and the intent of the IEBC that cannot be realistically applied to relocatable modular buildings.
- There are sections of the conflicting code sections that cannot be applied to both site-built and relocatable modular buildings, specifically related to construction documents, inspection, and relocation.

Both the IBC and the IEBC are unclear on how to treat these buildings, particularly when they are relocated to a new site. In the absence of clear definitions and requirements that are specific to both new and existing relocatable modular buildings, many code officials attempt to apply similar, but non-related sections of the building code intended for site built buildings to the relocatable modular industry. There are unique attributes to relocatable modular buildings that warrant their own requirements in a new chapter in this code.

CTC has submitted two proposals on the subject of relocatable modular buildings. One proposal to Section 3112 for new construction and this proposal for existing buildings which are relocated. This proposal includes:

- The definition has been distilled from industry publications and definitions found in state statutes that govern modular (industrialized) buildings. This definition was also approved in the 2012 IGCC.
- An exception to IBC 3410 for relocatable buildings (currently treats all moved buildings as “new” buildings) with a pointer to Chapter 13 of IEBC. Moved relocatable modular buildings are to be treated as existing buildings.
- Relocatables undergoing additions or alterations shall comply with the appropriate section of the IEBC, which also applies to site built buildings. This section clarifies that there is no difference between the requirements for modular buildings and site built buildings when either undergoes construction for alteration or addition.

Moving this document forward through the ICC code development process will help the modular building industry comply with the intent of the code, provide a clear and consistent path for enforcement professionals, and for compliance by owners of relocatable buildings who wish to re-use or repurpose their existing buildings.

The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

Cost Impact: This code change proposal will not increase the cost of construction.

G203-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

202-RELOCATABLE BUILDING-G-BALDASSARRA-CTC

G204 – 12

3401.1

Proponent: David Bonowitz, David Bonowitz S.E., representing NCSEA Code Advisory Committee, Existing Buildings Subcommittee (dbonowitz@att.net)

Revise as follows:

3401.1 Scope. The provisions of this chapter shall control the *alteration, repair, addition, moving*, and change of occupancy of existing buildings and structures.

Exception: Existing *bleachers*, grandstands and folding and telescopic seating shall comply with ICC 300.

Reason: Chapter 34 includes Section 3410 for Moved Structures.

Cost Impact: The proposed changes will not increase the cost of construction.

G204-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3401.1-G-BONOWITZ.doc

G205 – 12

Part I

3401.1.2 (NEW)

Part II

3401.3, 3401.1.3 through 3401.3.4 (NEW),

Part III

3401.5 (NEW), 3403.2, 3404.2, 3505.5 (IEBC [B] 402.2, 403.2, 404.5)

Part IV

3401.6

Part V

3401.6 (New)

Part VI

3406, 3407, 3411 (IEBC [B] 405,406, 410)

Part VII

3403 (IEBC [B] 402)

Part VIII

3404 (IEBC [B] 403)

Part IX

3405 (IEBC [B] 404)

Part X

202 (New)

Part XI

3408, 3409, 3410 (IEBC [B] 407, 408, 409)

Part XII

3404.1 (NEW) through 3412.1.8 (NEW)

Proponent: David S. Collins, The Preview Group, Inc., representing The American Institute of Architects

THIS IS A 12 PART CODE CHANGE PROPOSAL. ALL 12 PARTS OF THE PROPOSAL WILL BE HEARD BY THE IBC GENERAL COMMITTEE.

PART I – IBC GENERAL

Add new text as follows:

3401.1 Scope. The provisions of this chapter shall control the *alteration, repair, addition* and change of occupancy of existing buildings and structures.

Exception: Existing *bleachers*, grandstands and folding and telescopic seating shall comply with ICC 300.

3401.1.2 Intent. The intent of this code is to provide flexibility to permit the use of alternative approaches to achieve compliance with minimum requirements to safeguard the public health, safety and welfare insofar as they are affected by the repair, alteration, change of occupancy, addition and relocation of existing buildings.

PART II – IBC GENERAL

Revise as follows:

3401.3 Compliance. ~~Alterations, repairs, additions and changes of occupancy to, or relocation of, existing buildings and structures shall comply with the provisions for alterations, repairs, additions and changes of occupancy or relocation, respectively, in the International Energy Conservation Code, International Fire Code, International Fuel Gas Code, International Mechanical Code, International Plumbing Code, International Property Maintenance Code, International Private Sewage Disposal Code, International Residential Code and NFPA 70. Where provisions of the other codes conflict with provisions of this Chapter, the provisions of this Chapter shall take precedence.~~

3401.3 Compliance. The repair, alteration, change of occupancy, addition or relocation of all existing buildings shall comply with the applicable provisions of Section 3401 and one of the methods listed in Sections 3401.3.2 through 3401.3.4. Application of a method shall be the sole basis for assessing the compliance of work performed under a single permit unless otherwise approved by the code official. Sections 3401.3.2 through 3401.3.4 shall not be applied in combination with each other.

3401.3.1 Compliance with laws at the time the building was constructed. Subject to the approval of the code official, alterations complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building is undergoing more than a limited structural alteration as prescribed in Section 907.4.3. New structural members added as part of the alteration shall comply with the International Building Code. Alterations of existing buildings in flood hazard areas shall comply with Section 3401.5.

3401.3.2 Prescriptive compliance method. Repairs, alterations, additions and changes of occupancy complying with Section 3403 of this code in buildings complying with the International Fire Code.

3401.3.3 Work area compliance method. Repairs, alterations, additions, changes in occupancy and relocated buildings complying with the applicable requirements of Sections 3404 to 3412 of this code.

3401.3.4 Performance compliance method. Repairs, alterations, additions, changes in occupancy and relocated buildings complying with Section 3413 of this code.

PART III – IBC GENERAL

Revise as follows:

3401.5 Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3, any repairs, alterations and additions that constitutes substantial improvement of the existing structure, as defined in Section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in flood hazard areas established in Section 1612.3, any additions that do not constitute substantial improvement of the existing structure, as defined in Section 1612.2, are not required to comply with the flood design requirements for new construction.

The code official shall not grant modifications to provisions related to flood resistance unless a determination is made that:

1. The applicant has presented good and sufficient cause that the unique characteristics of the size, configuration or topography of the site render compliance with the flood-resistant construction provisions inappropriate.
2. Failure to grant the modification would result in exceptional hardship.

3. The granting of the modification will not result in increased flood heights, additional threats to public safety, extraordinary public expense nor create nuisances, cause fraud on or victimization of the public or conflict with existing laws or ordinances.
4. The modification is the minimum necessary to afford relief, considering the flood hazard.
5. A written notice will be provided to the applicant specifying, if applicable, the difference between the design flood elevation and the elevation to which the building is to be built, stating that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced floor elevation and that construction below the design flood elevation increases risks to life and property.

3403.2 (IEBC [B] 402.2) Flood hazard areas. For buildings and structures in *flood hazard areas* established in Section 1612.3, any ~~addition~~ that constitutes ~~substantial improvement~~ of the existing structure, as defined in Section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in *flood hazard areas* established in Section 1612.3, any additions that do not constitute ~~substantial improvement~~ of the existing structure, as defined in Section 1612.2, are not required to comply with the flood design requirements for new construction.

3404.2 (IEBC [B] 403.2) Flood hazard areas. For buildings and structures in *flood hazard areas* established in Section 1612.3, any ~~alteration~~ that constitutes ~~substantial improvement~~ of the existing structure, as defined in Section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the ~~existing structure~~ shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in *flood hazard areas* established in Section 1612.3, any ~~alterations~~ that do not constitute ~~substantial improvement~~ of the existing structure, as defined in Section 1612.2, are not required to comply with the flood design requirements for new construction.

3405.5 (IEBC [B] 404.5) Flood hazard areas. For buildings and structures in *flood hazard areas* established in Section 1612.3, any ~~repair~~ that constitutes ~~substantial improvement~~ of the existing structure, as defined in Section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in *flood hazard areas* established in Section 1612.3, any ~~repairs~~ that do not constitute ~~substantial improvement~~ or ~~repair~~ of ~~substantial damage~~ of the existing structure, as defined in Section 1612.2, are not required to comply with the flood design requirements for new construction.

PART IV – IBC GENERAL

Delete without substitution:

3401.6 Alternative compliance. Work performed in accordance with the *International Existing Building Code* shall be deemed to comply with the provisions of this chapter.

PART V – IBC GENERAL

Add new text as follows:

3401.6 Structural requirements. Where this chapter requires consideration of the structural system of an existing building subject to repair, alteration, change of occupancy, addition or relocation of existing buildings, the structure shall be made to comply with this section. (IEBC 301.1)

3401.6.1 New structural elements. New structural elements in alterations, including connections and anchorage, shall comply with the International Building Code.

3401.6.2 Minimum design loads. The minimum design loads on existing elements of a structure that do not support additional loads as a result of an alteration shall be the loads applicable at the time the building was constructed.

3401.6.3 Existing structural elements carrying gravity loads. Alterations shall not reduce the capacity of existing gravity load-carrying structural elements unless it is demonstrated that the elements have the capacity to carry the applicable design gravity loads required in Chapter 16. Existing structural elements supporting any additional gravity loads as a result of the alterations, including the effects of snow drift, shall comply with the International Building Code. (IBC 3404.3, IEBC 807.4)

Exceptions:

1. Structural elements whose stress is not increased by more than 5 percent.
2. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the existing building and its alteration comply with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.

3401.6.4 Existing structural elements resisting lateral loads. Additions or alterations affecting existing structural elements resisting lateral loads shall comply with this section. Where the existing seismic force-resisting system is a type that can be designated ordinary, values of R, W0, and Cd for the existing seismic force-resisting system shall be those specified by this code for an ordinary system unless it is demonstrated that the existing system will provide performance equivalent to that of a detailed, intermediate or special system.

3401.6.4.1 Additions. Where an addition is structurally independent of the existing structure, existing lateral load-carrying structural elements shall be permitted to remain unaltered. Where the addition is not structurally independent of the existing structure, the existing structure and its addition acting together as a single structure shall be shown to meet the requirements of Sections 1609 and 1613.

Exception: Any existing lateral load-carrying structural element whose demand-capacity ratio with the addition considered is no more than 10 percent greater than its demand-capacity ratio with the addition ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction.

3401.6.4.2 Alterations. Alterations affecting the demands or capacities of existing elements of the lateral load-resisting system shall be evaluated using the wind provisions in Section 1609 and the reduced IBC-level seismic forces per Section 1604.10. Any existing lateral load-resisting structural elements whose demand-capacity ratio with the alteration considered is more than 10 percent greater than its demand-capacity ratio with the alteration ignored shall be brought into compliance with those wind and seismic provisions. In addition, the alteration shall not create a structural irregularity prohibited by ASCE 7 unless the entire structure complies with Section 3401.4.5.5. For the purposes of this section, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacity shall account for the cumulative effects of additions and alterations since the original construction. (3403.4 IBC, 807.5 IEBC)

3401.6.4.3 Voluntary lateral force-resisting system alterations. Alterations of existing structural elements and additions of new structural elements that are initiated for the purpose of increasing the lateral force-resisting strength or stiffness of an existing structure and that are not required by other sections of this code shall not be required to be designed for forces conforming to the International Building Code, provided that an engineering analysis is submitted including all of the following:

- 1 The capacity of existing structural elements required to resist forces is not reduced;
- 2 The lateral loading to existing structural elements is not increased either beyond its capacity or more than 10 percent;
- 3 New structural elements are detailed and connected to the existing structural elements as required by the International Building Code;
- 4 New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by the International Building Code; and
- 5 A dangerous condition as defined in this code is not created. Voluntary alterations to lateral force-resisting systems conducted in accordance with Appendix A and the referenced standards of this code shall be permitted. (IBC 3404.5, IEBC 807.6)

3401.6.4.4 Compliance with reduced IBC level seismic forces. Where seismic evaluation and design is permitted to meet reduced International Building Code seismic force levels, the procedures used shall be in accordance with one of the following:

1. The International Building Code using 75 percent of the prescribed forces. Values of R, W0 and Cd used for analysis shall be as specified in Section 301.1.4.1 of this code.
2. Structures or portions of structures that comply with the requirements of the applicable chapter in Appendix A as specified in Items 2.1 through 2.5 and subject to the limitations of the respective Appendix A Chapters shall be deemed to comply with this section.
 - 2.1. The seismic evaluation and design of unreinforced masonry bearing wall buildings in Risk Category I or II are permitted to be based on the procedures specified in Appendix Chapter A1.
 - 2.2. Seismic evaluation and design of the wall anchorage system in reinforced concrete and reinforced masonry wall buildings with flexible diaphragms in Risk Category I or II are permitted to be based on the procedures specified in Chapter A2.
 - 2.3. Seismic evaluation and design of cripple walls and sill plate anchorage in residential buildings of light-frame wood construction in Risk Category I or II are permitted to be based on the procedures specified in Chapter A3.
 - 2.4. Seismic evaluation and design of soft, weak, or open-front wall conditions in multiunit residential buildings of wood construction in Risk Category I or II are permitted to be based on the procedures specified in Chapter A4.
 - 2.5. Seismic evaluation and design of concrete buildings in all risk categories are permitted to be based on the procedures specified in Chapter A5.
3. Compliance with ASCE 31 based on the applicable performance level as shown in Table 3401.1.4.5.5. It shall be permitted to use the BSE-1 earthquake hazard level as defined in ASCE 41 and subject to the limitations in Item 4 below.
4. Compliance with ASCE 41 using the BSE-1 Earthquake Hazard Level and the performance level shown in Table 3401.6.4.4. The design spectral response acceleration parameters SXS and SX1 specified in ASCE 41 shall not be taken less than 75 percent of the respective design spectral response acceleration parameters SDS and SD1 defined by the International Building Code.

(IEBC Table 301.1.4.2)

**TABLE 3401.6.4.4 (IEBC TABLE 301.1.4.2)
PERFORMANCE CRITERIA FOR REDUCED CHAPTER 16-LEVEL SEISMIC FORCES OCCUPANCY**

<u>RISK CATEGORY</u> <u>(Based on IBC Table 1604.5)</u>	<u>PERFORMANCE LEVEL FOR</u> <u>USE WITH ASCE 31</u>	<u>PERFORMANCE LEVEL FOR</u> <u>USE WITH ASCE 41 BSE-1</u> <u>EARTHQUAKE HAZARD</u> <u>LEVEL</u>
<u>I</u>	<u>Life safety (LS)</u>	<u>Life safety (LS)</u>
<u>II</u>	<u>Life safety (LS)</u>	<u>Life safety (LS)</u>
<u>III</u>	<u>Notes a, b</u>	<u>Note a</u>
<u>IV</u>	<u>Immediate occupancy (IO)</u>	<u>Life safety (LS)</u>

- a. ~~Acceptance criteria for Risk Category III shall be taken as 80 percent of the acceptance criteria specified for Risk Category II performance levels, but need not be less than the acceptance criteria specified for Risk Category IV levels.~~
- b. ~~For Risk Category III, the ASCE 31 screening phase checklists shall be based on the life safety performance level.~~
- a. ~~Acceptance criteria for Risk Category III shall be taken as 80 percent of the acceptance criteria specified for Risk Category II performance levels, but need not be less than the acceptance criteria specified for Risk Category IV levels.~~
- b. ~~For Risk Category III, the ASCE 31 screening phase checklists shall be based on the life safety performance level.~~
(IBC 3401.4.3, IEBC 301.1.4.2)

PART VI – IBC GENERAL

Revise as follows:

~~SECTION 3411 (IEBC [B] 410)~~ ~~ACCESSIBILITY FOR EXISTING BUILDINGS~~

3401.7 Accessibility for existing buildings. Accessibility for existing buildings shall be in accordance with Sections 3401.7.1 through 3401.7.9.4.

3411.1(IEBC [B] 410.1)– 3401.7.1 Scope. The provisions of Sections 3411.1 through ~~3411.9~~ 3401.7.1 through 3401.7.9 apply to maintenance, change of occupancy, additions and alterations to existing buildings, including those identified as historic buildings.

3411.2 (IEBC [B] 410.2)– 3401.7.2 Maintenance of facilities. A facility that is constructed or altered to be accessible shall be maintained accessible during occupancy.

3411.3 (IEBC [B] 410.3)– 3401.7.3 Extent of application. An alteration of an existing facility shall not impose a requirement for greater accessibility than that which would be required for new construction. Alterations shall not reduce or have the effect of reducing accessibility of a facility or portion of a facility.

3411.4 (IEBC [B] 410.4)– 3401.7.4 Change of occupancy. Existing buildings that undergo a change of group or occupancy shall comply with this section.

Exception: Type B dwelling units or sleeping units required by Section 1107 of this code are not required to be provided in existing buildings and facilities undergoing a change of occupancy in conjunction with alterations where the work area is 50 percent or less of the aggregate area of the building.

3411.4.1 (IEBC [B] 410.4.1)– 3401.7.4.1 Partial change in occupancy. Where a portion of the building is changed to a new occupancy classification, any alterations shall comply with Sections 3401.7.6, 3401.7.7 and 3401.7.8.

3411.4.2 (IEBC [B] 410.4.2)– 3401.7.4.2 Complete change of occupancy. Where an entire building undergoes a change of occupancy, it shall comply with Section 3401.7.4.1 and shall have all of the following accessible features:

1. At least one accessible building entrance.
2. At least one accessible route from an accessible building entrance to primary function areas.
3. Signage complying with Section 1110.
4. Accessible parking, where parking is being provided.
5. At least one accessible passenger loading zone, when loading zones are provided.
6. At least one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.

Where it is technically infeasible to comply with the new construction standards for any of these requirements for a change of group or occupancy, the above items shall conform to the requirements to the maximum extent technically feasible.

Exception: The accessible features listed in Items 1 through 6 are not required for an accessible route to Type B units.

~~3411.5 (IEBC [B] 410.5)~~ 3401.7.5 Additions. Provisions for new construction shall apply to additions. An addition that affects the accessibility to, or contains an area of, a primary function shall comply with the requirements in Section 3401.7.7.

~~3411.6 (IEBC [B] 410.6)~~ 3401.7.6 Alterations. A facility that is altered shall comply with the applicable provisions in Chapter 11 of this code, unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.

Exceptions:

1. The altered element or space is not required to be on an accessible route, unless required by Section 3401.7.7.
2. Accessible means of egress required by Chapter 10 are not required to be provided in existing facilities.
3. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provision for a Type B dwelling unit.
4. Type B dwelling or sleeping units required by Section 1107 of this code are not required to be provided in existing buildings and facilities undergoing a change of occupancy in conjunction with alterations where the work area is 50 percent or less of the aggregate area of the building.

~~3411.7 (IEBC [B] 410.7)~~ 3401.7.7 Alterations affecting an area containing a primary function.

Where an alteration affects the accessibility to, or contains an area of primary function, the route to the primary function area shall be accessible. The accessible route to the primary function area shall include toilet facilities or drinking fountains serving the area of primary function.

Exceptions:

1. The costs of providing the accessible route are not required to exceed 20 percent of the costs of the alterations affecting the area of primary function.
2. This provision does not apply to alterations limited solely to windows, hardware, operating controls, electrical outlets and signs.
3. This provision does not apply to alterations limited solely to mechanical systems, electrical systems, installation or alteration of fire protection systems and abatement of hazardous materials.
4. This provision does not apply to alterations undertaken for the primary purpose of increasing the accessibility of a facility.
5. This provision does not apply to altered areas limited to Type B dwelling and sleeping units.

~~3411.8 (IEBC [B] 410.8)~~ 3401.7.8 Scoping for alterations. The provisions of Sections 3401.7.8.1 through 3401.7.8.14 shall apply to alterations to existing buildings and facilities.

~~3411.8.1 (IEBC [B] 410.8.1)~~ 3401.7.8.1 Entrances. Accessible entrances shall be provided in accordance with Section 1105.

Exception: Where an alteration includes alterations to an entrance, and the facility has an accessible entrance, the altered entrance is not required to be accessible, unless required by Section 3401.7.7. Signs complying with Section 1110 shall be provided.

~~3411.8.2 (IEBC [B] 410.8.2)~~ 3401.7.8.2 Elevators. Altered elements of existing elevators shall comply with ASME A17.1 and ICC A117.1. Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.

~~3411.8.3 (IEBC [B] 410.8.3)~~ **3401.7.8.3 Platform lifts.** Platform (wheelchair) lifts complying with ICC A117.1 and installed in accordance with ASME A18.1 shall be permitted as a component of an accessible route.

~~3411.8.4 (IEBC [B] 410.8.4)~~ **3401.7.8.4 Stairs and escalators in existing buildings.** In alterations, change of occupancy or additions where an escalator or stair is added where none existed previously and major structural modifications are necessary for installation, an accessible route shall be provided between the levels served by the escalator or stairs in accordance with Sections 1104.4 and 1104.5.

~~3411.8.5 (IEBC [B] 410.8.5)~~ **3401.7.8.5 Ramps.** Where slopes steeper than allowed by Section 1010.2 are necessitated by space limitations, the slope of ramps in or providing access to existing facilities shall comply with Table 3401.7.8.5.

**TABLE 3411.8.5 3401.7.8.5
RAMPS**

SLOPE	MAXIMUM RISE
Steeper than 1:10 but not steeper than 1:8	3 inches
Steeper than 1:12 but not steeper than 1:10	6 inches

For SI: 1 inch = 25.4 mm.

~~3411.8.6 (IEBC [B] 410.8.6)~~ **3401.7.8.6 Performance areas.** Where it is technically infeasible to alter performance areas to be on an accessible route, at least one of each type of performance area shall be made accessible.

~~3411.8.7 (IEBC [B] 410.8.7)~~ **3401.7.8.7 Accessible dwelling or sleeping units.** Where Group I-1, I-2, I-3, R-1, R-2 or R-4 dwelling or sleeping units are being altered or added, the requirements of Section 1107 for Accessible units apply only to the quantity of spaces being altered or added.

~~3411.8.8 (IEBC [B] 410.8.8)~~ **3401.7.8.8 Type A dwelling or sleeping units.** Where more than 20 Group R-2 dwelling or sleeping units are being altered or added, the requirements of Section 1107 for Type A units apply only to the quantity of the spaces being altered or added.

~~3411.8.9 (IEBC [B] 410.8.9)~~ **3401.7.8.9 Type B dwelling or sleeping units.** Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 for Type B units apply only to the quantity of the spaces being added. Where Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered and where the work area is greater than 50 percent of the aggregate area of the building, the requirements of Section 1107 for Type B units apply only to the quantity of the spaces being altered.

~~3411.8.10 (IEBC [B] 410.8.10)~~ **3401.7.8.10 Jury boxes and witness stands.** In alterations, accessible wheelchair spaces are not required to be located within the defined area of raised jury boxes or witness stands and shall be permitted to be located outside these spaces where the ramp or lift access restricts or projects into the means of egress.

~~3411.8.11 (IEBC [B] 410.8.11)~~ **3401.7.8.11 Toilet rooms.** Where it is technically infeasible to alter existing toilet and bathing rooms to be accessible, an accessible family or assisted-use toilet or bathing room constructed in accordance with Section 1109.2.1 is permitted. The family or assisted-use toilet or bathing room shall be located on the same floor and in the same area as the existing toilet or bathing rooms.

~~3411.8.12 (IEBC [B] 410.8.12)~~ **3401.7.8.12 Dressing, fitting and locker rooms.** Where it is technically infeasible to provide accessible dressing, fitting or locker rooms at the same location as similar types of rooms, one accessible room on the same level shall be provided. Where separate-sex facilities are provided, accessible rooms for each sex shall be provided. Separate-sex facilities are not required where only unisex rooms are provided.

~~3411.8.13 (IEBC [B] 410.8.13)~~ **3401.7.8.13 Fuel dispensers.** Operable parts of replacement fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

~~3411.8.14 (IEBC [B] 410.8.14)~~ **3401.7.8.14 Thresholds.** The maximum height of thresholds at doorways shall be 3/4 inch (19.1 mm). Such thresholds shall have beveled edges on each side.

~~3411.9 (IEBC [B] 410.9)~~ **3401.7.9 Historic buildings.** These provisions shall apply to facilities designated as historic structures that undergo alterations or a change of occupancy, unless technically infeasible. Where compliance with the requirements for accessible routes, entrances or toilet rooms would threaten or destroy the historic significance of the facility, as determined by the applicable governing authority, the alternative requirements of Sections 3401.7.9.1 through 3401.7.9.4 for that element shall be permitted.

Exception: Type B dwelling or sleeping units required by Section 1107 are not required to be provided in historical buildings.

~~3411.9.1 (IEBC [B] 410.9.1)~~ **3401.7.9.1 Site arrival points.** At least one accessible route from a site arrival point to an accessible entrance shall be provided.

~~3411.9.2 (IEBC [B] 410.9.2)~~ **3401.7.9.2 Multilevel buildings and facilities.** An accessible route from an accessible entrance to public spaces on the level of the accessible entrance shall be provided.

~~3411.9.3 (IEBC [B] 410.9.3)~~ **3401.7.9.3 Entrances.** At least one main entrance shall be accessible.

Exceptions:

1. If a main entrance cannot be made accessible, an accessible nonpublic entrance that is unlocked while the building is occupied shall be provided; or
2. If a main entrance cannot be made accessible, a locked accessible entrance with a notification system or remote monitoring shall be provided.

Signs complying with Section 1110 shall be provided at the primary entrance and the accessible entrance.

~~3411.9.4 (IEBC [B] 410.9.4)~~ **3401.7.9.4 Toilet and bathing facilities.** Where toilet rooms are provided, at least one accessible family or assisted-use toilet room complying with Section 1109.2.1 shall be provided.

**SECTION 3406 (IEBC [B] 405)
FIRE ESCAPES**

~~3406.1 (IEBC [B] 405.1)~~ **3401.8.1 Fire escapes Where permitted.** Fire escapes shall be permitted only as provided for in Sections 3401.8.1.1 through 3401.8.1.4.

~~3406.1.1 (IEBC [B] 405.1.1)~~ **3401.8.1.1 New buildings.** Fire escapes shall not constitute any part of the required means of egress in new buildings.

~~3406.1.2 (IEBC [B] 405.1.2)~~ **3401.8.1.2 Existing fire escapes.** Existing fire escapes shall be continued to be accepted as a component in the means of egress in existing buildings only.

~~3406.1.3 (IEBC [B] 405.1.3)~~ **3401.8.1.3 New fire escapes.** New fire escapes for existing buildings shall be permitted only where exterior stairs cannot be utilized due to lot lines limiting stair size or due to the sidewalks, alleys or roads at grade level. New fire escapes shall not incorporate ladders or access by windows.

~~3406.1.4 (IEBC [B] 405.1.4)~~ **3401.8.1.4 Limitations.** Fire escapes shall comply with this section and shall not constitute more than 50 percent of the required number of exits nor more than 50 percent of the required exit capacity.

~~3406.2 (IEBC [B] 405.2)~~ **3401.8.2 Location.** Where located on the front of the building and where projecting beyond the building line, the lowest landing shall not be less than 7 feet (2134 mm) or more than 12 feet (3658 mm) above grade, and shall be equipped with a counterbalanced stairway to the street. In alleyways and thoroughfares less than 30 feet (9144 mm) wide, the clearance under the lowest landing shall not be less than 12 feet (3658 mm).

~~3406.3 (IEBC [B] 405.3)~~ **3401.8.3 Construction.** The fire escape shall be designed to support a live load of 100 pounds per square foot (4788 Pa) and shall be constructed of steel or other approved noncombustible materials. Fire escapes constructed of wood not less than nominal 2 inches (51 mm) thick are permitted on buildings of Type V construction. Walkways and railings located over or supported by combustible roofs in buildings of Type III and IV construction are permitted to be of wood not less than nominal 2 inches (51 mm) thick.

~~3406.4 (IEBC [B] 405.4)~~ **3401.8.4 Dimensions.** Stairs shall be at least 22 inches (559 mm) wide with risers not more than, and treads not less than, 8 inches (203 mm) and landings at the foot of stairs not less than 40 inches (1016 mm) wide by 36 inches (914 mm) long, located not more than 8 inches (203 mm) below the door.

~~3406.5 (IEBC [B] 405.5)~~ **3401.8.5 Opening protectives.** Doors and windows along the fire escape shall be protected with ¾-hour opening protectives.

SECTION 3407 (IEBC [B] 406) GLASS REPLACEMENT

~~3407.1 (IEBC [B] 406.1)~~ **3401.9 Glass Replacement.** The installation or replacement of glass shall be as required for new installations.

PART VII- IBC GENERAL

Revise as follows:

SECTION 3403 (IEBC [B] 402) ADDITIONS

3403.1 Prescriptive Compliance. The provisions of this section control the alteration, repair, addition and change of occupancy or relocation of existing buildings and structures, including historic buildings and structures when using the prescriptive compliance method as permitted in Section 3401.3.3.

~~3403.1 (IEBC [B] 402.1)~~ **General 3403.1.1 Additions.** *Additions* to any building or structure shall comply with the requirements of this code for new construction. *Alterations* to the existing building or structure shall be made to ensure that the existing building or structure together with the *addition* are no less conforming with the provisions of this code than the existing building or structure was prior to the *addition*. An existing building together with its *additions* shall comply with the height and area provisions of Chapter 5.

~~3403.3 (IEBC [B] 402.3)~~ **Existing structural elements carrying gravity load.** Any existing gravity load-carrying structural element for which an *addition* and its related alterations cause an increase in design gravity load of more than 5 percent shall be strengthened, supplemented, replaced or otherwise altered as needed to carry the increased gravity load required by this code for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased shall be considered an altered element subject to the requirements of Section 3404.3. Any existing element

that will form part of the lateral load path for any part of the ~~addition~~ shall be considered an existing lateral load-carrying structural element subject to the requirements of Section 3403.4.

3403.3.1 (IEBC [B] 402.3.3.1) — Design live load. Where the ~~addition~~ does not result in increased design live load, existing gravity load-carrying structural elements shall be permitted to be evaluated and designed for live loads ~~approved~~ prior to the ~~addition~~. If the ~~approved~~ live load is less than that required by Section 1607, the area designed for the ~~nonconforming~~ live load shall be posted with placards of ~~approved~~ design indicating the ~~approved~~ live load. Where the ~~addition~~ does result in increased design live load, the live load required by Section 1607 shall be used.

3403.4 (IEBC [B] 402.3.4) — Existing structural elements carrying lateral load. Where the ~~addition~~ is structurally independent of the ~~existing structure~~, existing lateral load-carrying structural elements shall be permitted to remain unaltered. Where the ~~addition~~ is not structurally independent of the ~~existing structure~~, the ~~existing structure~~ and its ~~addition~~ acting together as a single structure shall be shown to meet the requirements of Sections 1609 and 1613.

Exception: Any existing lateral load-carrying structural element whose demand-capacity ratio with the ~~addition~~ considered is no more than 10 percent greater than its demand-capacity ratio with the ~~addition~~ ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of ~~additions~~ and ~~alterations~~ since original construction.

3403.5 (IEBC [B] 402.5) 3403.1.1.1 Smoke alarms in existing portions of a building. Where an ~~addition~~ is made to a building or structure of a Group R or I-1 occupancy, the existing building shall be provided with ~~smoke alarms~~ in accordance with Section 1103.8 of the *International Fire Code*.

PART VIII - IBC GENERAL

Revise as follows:

SECTION 3404 (IEBC [B] 403) ALTERATIONS

3404.1 (IEBC [B] 403.1) 3403.1.2 General Alterations. Except as provided by Section 3401.4 or this section, ~~alterations~~ to any building or structure shall comply with the requirements of the code for new construction. ~~Alterations~~ shall be such that the existing building or structure is no less complying with the provisions of this code than the existing building or structure was prior to the ~~alteration~~.

Exceptions:

1. An existing *stairway* shall not be required to comply with the requirements of Section 1009 where the existing space and construction does not allow a reduction in pitch or slope.
2. *Handrails* otherwise required to comply with Section 1009.15 shall not be required to comply with the requirements of Section 1012.6 regarding full extension of the *handrails* where such extensions would be hazardous due to plan configuration.

3404.3 (IEBC [B] 403.3) — Existing structural elements carrying gravity load. Any existing gravity load-carrying structural element for which an ~~alteration~~ causes an increase in design gravity load of more than 5 percent shall be strengthened, supplemented, replaced or otherwise altered as needed to carry the increased gravity load required by this code for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the ~~alteration~~ shall be

shown to have the capacity to resist the applicable design gravity loads required by this code for new structures.

~~**3404.3.1 (IEBC [B] 403.3.1) Design live load.** Where the *alteration* does not result in increased design live load, existing gravity load carrying structural elements shall be permitted to be evaluated and designed for live loads *approved* prior to the *alteration*. If the *approved* live load is less than that required by Section 1607, the area designed for the nonconforming live load shall be posted with placards of *approved* design indicating the *approved* live load. Where the *alteration* does result in increased design live load, the live load required by Section 1607 shall be used.~~

~~**3404.4 (IEBC [B] 403.4) Existing structural elements carrying lateral load.** Except as permitted by Section 3404.5, where the *alteration* increases design lateral loads in accordance with Section 1609 or 1613, or where the *alteration* results in a structural irregularity as defined in ASCE 7, or where the *alteration* decreases the capacity of any existing lateral load carrying structural element, the structure of the altered building or structure shall be shown to meet the requirements of Sections 1609 and 1613.~~

~~**Exception:** Any existing lateral load carrying structural element whose demand capacity ratio with the *alteration* considered is no more than 10 percent greater than its demand capacity ratio with the *alteration* ignored shall be permitted to remain unaltered. For purposes of calculating demand capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces per Sections 1609 and 1613. For purposes of this exception, comparisons of demand capacity ratios and calculation of design lateral loads, forces, and capacities shall account for the cumulative effects of *additions* and *alterations* since original construction.~~

~~**3404.5 (IEBC [B] 403.5) Voluntary seismic improvements.** *Alterations* to existing structural elements or additions of new structural elements that are not otherwise required by this chapter and are initiated for the purpose of improving the performance of the seismic force resisting system of an *existing structure* or the performance of seismic bracing or anchorage of existing nonstructural elements shall be permitted, provided that an engineering analysis is submitted demonstrating the following:~~

- ~~1. The altered structure and the altered nonstructural elements are no less conforming with the provisions of this code with respect to earthquake design than they were prior to the alteration.~~
- ~~2. New structural elements are detailed as required for new construction.~~
- ~~3. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required for new construction.~~
- ~~4. The alterations do not create a structural irregularity as defined in ASCE 7 or make an existing structural irregularity more severe.~~

~~**3404.6 (IEBC [B] 403.6) 3403.1.2.1 Smoke alarms.** Individual *sleeping units* and individual *dwelling units* in Group R and I-1 occupancies shall be provided with *smoke alarms* in accordance with Section 1103.8 of the *International Fire Code*.~~

PART IX - IBC GENERAL

Revise as follows:

SECTION 3405 (IEBC [B] 404) REPAIRS

~~**3403.1.3 Repairs.** Repairs to existing buildings shall be in accordance with Sections 3403.1.3 through 3403.1.~~

~~**3405.1(IEBC [B] 404.1) 3403.1.3.1 General.** Buildings and structures, and parts thereof, shall be repaired in compliance with Section 3403.1.3.1 and 3401.2. Work on nondamaged components that is necessary for the required *repair* of damaged components shall be considered part of the *repair* and shall not be subject to the requirements for *alterations* in this chapter. Routine maintenance required by~~

Section 3401.2, ordinary repairs exempt from *permit* in accordance with Section 105.2, and abatement of wear due to normal service conditions shall not be subject to the requirements for *repairs* in this section.

~~3405.2 (IEBC [B] 404.2)~~— 3403.1.3.2 Substantial structural damage to vertical elements of the lateral-force-resisting system. A building that has sustained substantial structural damage to the vertical elements of its lateral-force-resisting system shall be evaluated and repaired in accordance with the applicable provisions of Sections 3403.1.3.2.1 through 3403.1.3.2.3.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B, or C whose *substantial structural damage* was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.

~~3405.2.1 (IEBC [B] 404.2.1)~~— 3403.1.3.2.1 Evaluation. The building shall be evaluated by a *registered design professional*, and the evaluation findings shall be submitted to the *building official*. The evaluation shall establish whether the damaged building, if repaired to its pre-damage state, would comply with the provisions of this code for wind and earthquake loads. Wind loads for this evaluation shall be those prescribed in Section 1609. Earthquake loads for this evaluation, if required, shall be permitted to be 75 percent of those prescribed in Section 1613.

~~3405.2.2 (IEBC [B] 404.2.2)~~— 3403.1.3.2.2 Extent of repair for compliant buildings. If the evaluation establishes compliance of the pre-damage building in accordance with Section 3403.1.3.2.1, then repairs shall be permitted that restore the building to its pre-damage state, based on material properties and design strengths applicable at the time of original construction.

~~3405.2.3 (IEBC [B] 404.2.3)~~— 3403.1.3.2.3 Extent of repair for noncompliant buildings. If the evaluation does not establish compliance of the predamage building in accordance with Section 3403.1.3.2.1, then the building shall be rehabilitated to comply with applicable provisions of this code for load combinations that include wind or seismic loads. The wind loads for the repair shall be as required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be as required by this code. Earthquake loads for this rehabilitation design shall be those required for the design of the pre-damage building, but not less than seventy-five percent of those prescribed in Section 1613. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

~~3405.3 (IEBC [B] 404.3)~~— 3403.1.3.3 Substantial structural damage to gravity load-carrying components. Gravity load-carrying components that have sustained *substantial structural damage* shall be rehabilitated to comply with the applicable provisions of this code for dead and live loads. Snow loads shall be considered if the *substantial structural damage* was caused by or related to snow load effects. Existing gravity load-carrying structural elements shall be permitted to be designed for live loads *approved* prior to the damage. Nondamaged gravity load-carrying components that receive dead, live or snow loads from rehabilitated components shall also be rehabilitated or shown to have the capacity to carry the design loads of the rehabilitation design. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

~~3405.3.1 (IEBC [B] 404.3.1)~~— 3403.1.3.3.1 Lateral force-resisting elements. Regardless of the level of damage to vertical elements of the lateral force-resisting system, if *substantial structural damage* to gravity load-carrying components was caused primarily by wind or earthquake effects, then the building shall be evaluated in accordance with Section 3403.1.3.2.1 and, if noncompliant, rehabilitated in accordance with Section 3403.1.3.2.3.

Exceptions:

1. One- and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.
2. Buildings assigned to Seismic Design Category A, B, or C whose *substantial structural damage* was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.

3405.4 (IEBC [B] 404.4) 3403.1.3.4 Less than substantial structural damage. For damage less than *substantial structural damage, repairs* shall be allowed that restore the building to its pre-damage state, based on material properties and design strengths applicable at the time of original construction. New structural members and connections used for this repair shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

PART X – IBC GENERAL

Add new definitions as follows:

**SECTION 202
DEFINITIONS**

CHANGE OF OCCUPANCY. A change in the purpose or level of activity within a building that involves a change in application of the requirements of this code.

EQUIPMENT OR FIXTURE. Any plumbing, heating, electrical, ventilating, air conditioning, refrigerating, and fire protection equipment, and elevators, dumb waiters, escalators, boilers, pressure vessels and other mechanical facilities or installations that are related to building services. Equipment or fixture shall not include manufacturing, production, or process equipment, but shall include connections from building service to process equipment.

LOAD-BEARING ELEMENT. Any column, girder, beam, joist, truss, rafter, wall, floor or roof sheathing that supports any vertical load in addition to its own weight or any lateral load.

NONCOMBUSTIBLE MATERIAL. A material that, under the conditions anticipated, will not ignite or burn when subjected to fire or heat. Materials that pass ASTM E 136 are considered noncombustible materials.

REHABILITATION. Any work, as described by the categories of work defined herein, undertaken in an existing building.

REHABILITATION, SEISMIC. Work conducted to improve the seismic lateral force resistance of an existing building.

REPAIR. The restoration to good or sound condition of any part of an existing building for the purpose of its maintenance.

SEISMIC LOADING. The forces prescribed herein, related to the response of the structure to earthquake motions, to be used in the analysis and design of the structure and its components.

UNSAFE. Buildings, structures or equipment that are unsanitary, or that are deficient due to inadequate means of egress facilities, inadequate light and ventilation, or that constitute a fire hazard, or in which the structure or individual structural members meet the definition of "Dangerous," or that are otherwise dangerous to human life or the public welfare, or that involve illegal or improper occupancy or inadequate maintenance shall be deemed unsafe. A vacant structure that is not secured against entry shall be deemed unsafe.

WORK AREA. That portion or portions of a building consisting of all reconfigured spaces as indicated on the construction documents. Work area excludes other portions of the building where incidental work entailed by the intended work must be performed and portions of the building where work not initially intended by the owner is specifically required by this code.

PART XI – IBC GENERAL

Revise as follows:

SECTION 3408 (IEBC [B] 407) CHANGE OF OCCUPANCY

3403.6 Change of occupancy. Change of occupancy shall be in accordance with Sections 3403.6.1 through 3403.6.4

3408.1 (IEBC [B] 407.1)– 3403.6.1 Conformance. No change shall be made in the use or occupancy of any building that would place the building in a different division of the same group of occupancies or in a different group of occupancies, unless such building is made to comply with the requirements of this code for such division or group of occupancies. Subject to the approval of the *building official*, the use or occupancy of existing buildings shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without conforming to all the requirements of this code for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.

3408.2 (IEBC [B] 407.2)– 3403.6.2 Certificate of occupancy. A certificate of occupancy shall be issued where it has been determined that the requirements for the new occupancy classification have been met.

3408.3 (IEBC [B] 407.3)– 3403.6.3 Stairways. An existing stairway shall not be required to comply with the requirements of Section 1009 where the existing space and construction does not allow a reduction in pitch or slope.

3408.4 (IEBC [B] 407.4)– 3403.6.4 Seismic. When a change of occupancy results in a structure being reclassified to a higher risk category, the structure shall conform to the seismic requirements for a new structure of the higher risk category.

Exceptions:

1. Specific seismic detailing requirements of Section 1613 for a new structure shall not be required to be met where the seismic performance is shown to be equivalent to that of a new structure. A demonstration of equivalence shall consider the regularity, overstrength, redundancy and ductility of the structure.
2. When a change of use results in a structure being reclassified from Risk Category I or II to Risk Category III and the structure is located where the seismic coefficient, *SDS*, is less than 0.33, compliance with the seismic requirements of Section 1613 are not required.

SECTION 3409 (IEBC [B] 408) HISTORIC BUILDINGS

3403.7 Historic Buildings. Historic buildings shall be in accordance with Sections 3403.7.1 and 3403.7.2

3409.1 (IEBC [B] 408.1)– 3403.7.1 Historic buildings General. The provisions of this code relating to the construction, *repair, alteration, addition*, restoration and movement of structures, and change of occupancy shall not be mandatory for *historic buildings* where such buildings are judged by the *building official* to not constitute a distinct life safety hazard.

3409.2 (IEBC [B] 408.2) 3403.7.2 Flood hazard areas. Within *flood hazard areas* established in accordance with Section 1612.3, where the work proposed constitutes *substantial improvement* as defined in Section 1612.2, the building shall be brought into compliance with Section 1612.

Exception: *Historic buildings* that are:

1. *Listed* or preliminarily determined to be eligible for listing in the National Register of Historic Places;
2. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or
3. Designated as historic under a state or local historic preservation program that is *approved* by the Department of Interior.

SECTION 3410 (IEBC [B] 409) MOVED STRUCTURES

3410.1 (IEBC [B] 409.1) 3403.8 Conformance-Moved structures. Structures moved into or within the jurisdiction shall comply with the provisions of this code for new structures.

PART XII - IBC GENERAL

Add new text as follows

SECTION 3404 **WORK AREA METHOD.**

3404.1 Work area compliance. The provisions of this section and Sections 3405 through 3412 control the alteration, repair, addition and change of occupancy or relocation of existing buildings and structures, including historic buildings and structures when using the work area compliance method as permitted in Section 3401.3.3.

3404.1.1 Work area. The work area, as defined in Chapter 2, shall be identified on the construction documents.

3404.1.2 Occupancy and use. When determining the appropriate application of the referenced sections of this code, the occupancy and use of a building shall be determined in accordance with Section 3401.3 of the International Building Code.

SECTION 3405 **REPAIRS**

3405.1 General. Repairs within the work area shall comply with the applicable requirements of Section 3403.1.3 for repairs. The work shall not make the building less conforming than it was before the repair was undertaken.

3405.1.1 Structural. Structural repairs shall be in compliance with this section and Section 3403.1.3. Repairs to damaged buildings shall comply with this section.

3405.1.2 Flood hazard areas. In flood hazard areas, buildings that have sustained substantial damage shall be brought into compliance with Section 3401.5.

3405.1.3 Electrical. Existing electrical wiring and equipment undergoing repair shall be allowed to be repaired or replaced with like material as required by this section.

3405.1.3.1 Receptacles. Replacement of electrical receptacles shall comply with the applicable requirements of Section 406.3(D) of NFPA 70.

3405.1.3.2 Plug fuses. Plug fuses of the Edison-base type shall be used for replacements only where there is no evidence of over fusing or tampering per applicable requirements of Section 240.51(B) of NFPA 70.

3405.1.3.3 Nongrounding-type receptacles. For replacement of nongrounding-type receptacles with grounding-type receptacles and for branch circuits that do not have an equipment grounding conductor in the branch circuitry, the grounding conductor of a grounding-type receptacle outlet shall be permitted to be grounded to any accessible point on the grounding electrode system or to any accessible point on the grounding electrode conductor in accordance with Section 250.130(C) of NFPA 70.

3405.1.3.4 Group I-2 receptacles. Non-“hospital grade” receptacles in patient bed locations of Group I-2 shall be replaced with “hospital grade” receptacles, as required by NFPA 99 and Article 517 of NFPA 70.

3405.1.3.5 Grounding of appliances. Frames of electric ranges, wall-mounted ovens, counter-mounted cooking units, clothes dryers and outlet or junction boxes that are part of the existing branch circuit for these appliances shall be permitted to be grounded to the grounded circuit conductor in accordance with Section 250.140 of NFPA 70.

3405.1.4 Mechanical systems. Mechanical systems in existing buildings shall be in accordance with Section 3405.1.4.1 through 3405.1.4.2

3405.1.4.1 General. Existing mechanical systems undergoing repair shall not make the building less conforming than it was before the repair was undertaken.

3405.1.4.2 Mechanical draft systems for manually fired appliances and fireplaces. A mechanical draft system shall be permitted to be used with manually fired appliances and fireplaces where such a system complies with all of the following requirements:

1. The mechanical draft device shall be listed and installed in accordance with the manufacturer's installation instructions.
2. A device shall be installed that produces visible and audible warning upon failure of the mechanical draft device or loss of electrical power at any time that the mechanical draft device is turned on. This device shall be equipped with a battery backup if it receives power from the building wiring.
3. A smoke detector shall be installed in the room with the appliance or fireplace. This device shall be equipped with a battery backup if it receives power from the building wiring.

3405.1.5 Plumbing. Plumbing fixtures, supplies and materials in existing buildings shall be in accordance with Sections 3405.1.5.1 through 3405.1.5.2.

3405.1.5.1 Plumbing materials. Plumbing materials and supplies shall not be used for repairs that are prohibited in the International Plumbing Code.

3405.1.5.2 Water closet replacement. The maximum water consumption flow rates and quantities for all replaced water closets shall be 1.6 gallons (6 L) per flushing cycle.

Exception: Blowout-design water closets [3.5 gallons (13 L) per flushing cycle].

SECTION 3406 **LEVEL 1 ALTERATIONS.**

3406.1 General. Level 1 alterations include the removal and replacement or the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that

serve the same purpose shall comply with the requirements of this section. Level 1 alterations to historic buildings shall comply with this chapter, except as modified in Section 3411.

3406.2 Safety. An existing building or portion thereof shall not be altered such that the building becomes less safe than its existing condition. Where the current level of safety or sanitation is proposed to be reduced, the portion altered shall conform to the requirements of the International Building Code.

(INTERIOR FINISHES AND BUILDING MATERIALS ARE COVERED IN SECTION 3401.4)

[FG] 3406.3 International Fuel Gas Code. The following sections of the *International Fuel Gas Code* shall constitute the fuel gas materials and methods requirements for Level 1 alterations.

1. All of Chapter 3, entitled "General Regulations," except Sections 303.7 and 306.
2. All of Chapter 4, entitled "Gas Piping Installations," except Sections 401.8 and 402.3.
 - 2.1. Sections 401.8 and 402.3 shall apply when the work being performed increases the load on the system such that the existing pipe does not meet the size required by code. Existing systems that are modified shall not require resizing as long as the load on the system is not increased and the system length is not increased even if the altered system does not meet code minimums.
3. All of Chapter 5, entitled "Chimneys and Vents."
4. All of Chapter 6, entitled "Specific Appliances."

(FIRE PROTECTION AND MEANS OF EGRESS ARE MEANINGLESS)

3406.4 Accessibility. A facility that is altered shall comply with the applicable provisions in Sections 3401.7

3406.5 Structural. Where alteration work includes replacement of equipment that is supported by the building or where a reroofing permit is required, the provisions of this section shall apply.

3406.5.1 Addition or replacement of roofing or replacement of equipment. Where addition or replacement of roofing or replacement of equipment results in additional dead loads, structural components supporting such reroofing or equipment shall comply with the gravity load requirements of this code.

Exceptions:

1. Structural elements where the additional dead load from the roofing or equipment does not increase the force in the element by more than 5 percent.
2. Buildings constructed in accordance with the *International Residential Code* or the conventional lightframe construction methods of the *International Building Code* and where the dead load from the roofing or equipment is not increased by more than 5 percent.
3. Addition of a second layer of roof covering weighing 3 pounds per square foot (0.1437 kN/m²) or less over an existing, single layer of roof covering.

3406.5.2 Additional requirements for reroof permits. The requirements of this section shall apply to alteration work requiring reroof permits.

3406.5.2.1 Bracing for unreinforced masonry bearing wall parapets. Where a permit is issued for reroofing for more than 25 percent of the roof area of a building assigned to Seismic Design Category D, E or F that has parapets constructed of unreinforced masonry, the work shall include installation of parapet bracing to resist the reduced *International Building Code* level seismic forces as specified in Section 3401.6.4.4 of this code, unless an evaluation demonstrates compliance of such items.

3406.5.2.2 Roof diaphragms resisting wind loads in high-wind regions. Where roofing materials are removed from more than 50 percent of the roof diaphragm or section of a building located where the

basic wind speed is greater than 90 mph or in a special wind region, as defined in Section 1609 of the International Building Code, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated for the wind loads specified in the International Building Code, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting at least 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in the International Building Code.

3406.6 Energy code compliance. Level 1 alterations to existing buildings or structures shall only require the portions of the building altered to comply with energy requirements of the International Energy Conservation Code or International Residential Code.

(ALTERATIONS—LEVEL 2
SECTION 801)

SECTION 3407 **LEVEL 2 ALTERATIONS.**

3407.1 Level 2 alterations. Level 2 alterations shall be in accordance with Sections 3407.1.1 through 3407.11.1.

3407.1.1 Scoping. Level 2 alterations include the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of additional equipment shall comply with the requirements of this section.

3407.1.2 Accessibility. Buildings in which the reconfiguration is exclusively the result of compliance with the accessibility requirements of Section 3401.7 shall be permitted to comply with level 1 alterations per Section 3406.

3407.1.3 Limits to compliance. All new construction elements, components, systems, and spaces shall comply with the requirements of this code for new construction.

Exceptions:

1. Windows may be added without requiring compliance with the light and ventilation requirements.
2. Newly installed electrical equipment shall comply with the requirements of Section 3404.11.
3. The length of dead-end corridors in newly constructed spaces shall only be required to comply with the provisions of Section 3407.6.6.
4. The minimum ceiling height of the newly created habitable and occupiable spaces and corridors shall be 7 feet (2134 mm).

(SECTION 802 SPECIAL USE AND OCCUPANCY)

3407.2 Special use and occupancy. Alteration of buildings classified as special use and occupancy as described in the International Building Code shall comply with the requirements of Section 3407.1.1 and the scoping provisions of Chapter 1 where applicable.

(SECTION 803 BUILDING ELEMENTS AND MATERIALS)

3407.3 Building elements and materials. The requirements of this section are limited to work areas in which Level 2 alterations are being performed, and shall apply beyond the work area where specified.

3407.3.1 Vertical openings. Existing vertical openings shall comply with the provisions of Sections 3407.3.1.1, 3407.3.1.2 and 3407.3.1.3.

3407.3.1.1 Existing vertical openings. All existing interior vertical openings connecting two or more floors shall be enclosed with approved assemblies having a fire-resistance rating of not less than 1 hour with approved opening protectives.

Exceptions:

1. Where vertical opening enclosure is not required by the International Building Code or the International Fire Code.
2. Interior vertical openings other than stairways may be blocked at the floor and ceiling of the work area by installation of not less than 2 inches (51 mm) of solid wood or equivalent construction.
3. The enclosure shall not be required where:
 - 3.1. Connecting the main floor and mezzanines; or
 - 3.2. All of the following conditions are met:
 - 3.2.1. The communicating area has a low hazard occupancy or has a moderate hazard occupancy that is protected throughout by an automatic sprinkler system.
 - 3.2.2. The lowest or next to the lowest level is a street floor.
 - 3.2.3. The entire area is open and unobstructed in a manner such that it may be assumed that a fire in any part of the interconnected spaces will be readily obvious to all of the occupants.
 - 3.2.4. Exit capacity is sufficient to provide egress simultaneously for all occupants of all levels by considering all areas to be a single floor area for the determination of required exit capacity.
 - 3.2.5. Each floor level, considered separately, has at least one-half of its individual required exit capacity provided by an exit or exits leading directly out of that level without having to traverse another communicating floor level or be exposed to the smoke or fire spreading from another communicating floor level.
4. In Group A occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories.
5. In Group B occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories. This enclosure, or the enclosure specified in Section 3407.3.1.1, shall not be required in the following locations:
 - 5.1. Buildings not exceeding 3,000 square feet (279 m²) per floor.
 - 5.2. Buildings protected throughout by an approved automatic fire sprinkler system.
6. In Group E occupancies, the enclosure shall not be required for vertical openings not exceeding three stories when the building is protected throughout by an approved automatic fire sprinkler system.
7. In Group F occupancies, the enclosure shall not be required in the following locations:
 - 7.1. Vertical openings not exceeding three stories.
 - 7.2. Special purpose occupancies where necessary for manufacturing operations and direct access is provided to at least one protected stairway.
 - 7.3. Buildings protected throughout by an approved automatic sprinkler system.
8. In Group H occupancies, the enclosure shall not be required for vertical openings not exceeding three stories where necessary for manufacturing operations and every floor level has direct access to at least two remote enclosed stairways or other approved exits.
9. In Group M occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories. This enclosure, or the enclosure specified in Section 3407.3.1.1, shall not be required in the following locations:
 - 9.1. Openings connecting only two floor levels.
 - 9.2. Occupancies protected throughout by an approved automatic sprinkler system.
10. In Group R-1 occupancies, the enclosure shall not be required for vertical openings not exceeding three stories in the following locations:
 - 10.1. Buildings protected throughout by an approved automatic sprinkler system.
 - 10.2. Buildings with less than 25 dwelling units or sleeping units where every sleeping room above the second floor is provided with direct access to a fire escape or other approved

second exit by means of an approved exterior door or window having a sill height of not greater than 44 inches (1118 mm) and where:

10.2.1. Any exit access corridor exceeding 8 feet (2438 mm) in length that serves two means of egress, one of which is an unprotected vertical opening, shall have at least one of the means of egress separated from the vertical opening by a 1-hour fire barrier; and

10.2.2. The building is protected throughout by an automatic fire alarm system, installed and supervised in accordance with the International Building Code.

11. In Group R-2 occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories. This enclosure, or the enclosure specified in Section 3407.3.1.1, shall not be required in the following locations:

11.1. Vertical openings not exceeding two stories with not more than four dwelling units per floor.

11.2. Buildings protected throughout by an approved automatic sprinkler system.

11.3. Buildings with not more than four dwelling units per floor where every sleeping room above the second floor is provided with direct access to a fire escape or other approved second exit by means of an approved exterior door or window having a sill height of not greater than 44 inches (1118 mm) and the building is protected throughout by an automatic fire alarm system complying with Section 3407.4.3.

12. One- and two-family dwellings.

13. Group S occupancies where connecting not more than two floor levels or where connecting not more than three floor levels and the structure is equipped throughout with an approved automatic sprinkler system.

14. Group S occupancies where vertical opening protection is not required for open parking garages and ramps.

3407.3.1.2 Supplemental shaft and floor opening enclosure requirements. Where the work area on any floor exceeds 50 percent of that floor area, the enclosure requirements of Section 3407.3.1 shall apply to vertical openings other than stairways throughout the floor.

Exception: Vertical openings located in tenant spaces that are entirely outside the work area.

3407.3.1.3 Supplemental stairway enclosure requirements. Where the work area on any floor exceeds 50 percent of that floor area, stairways that are part of the means of egress serving the work area shall, at a minimum, be enclosed with smoke-tight construction on the highest work area floor and all floors below.

Exception: Where stairway enclosure is not required by the International Building Code or the International Fire Code.

3407.3.2 Smoke barriers. Smoke barriers in Group I-2 occupancies shall be installed where required by Sections 3407.3.2.1 and 3407.3.2.2.

3407.3.2.1 Compartmentation. Where the work area is on a story used for sleeping rooms for more than 30 patients, the story shall be divided into not less than two compartments by smoke barrier walls complying with Section 3407.3.2.2 such that each compartment does not exceed 22,500 square feet (2093 m²), and the travel distance from any point to reach a door in the required smoke barrier shall not exceed 200 feet (60 960 mm).

Exception: Where neither the length nor the width of the smoke compartment exceeds 150 feet (45 720 mm), the travel distance to reach the smoke barrier door shall not be limited.

3407.3.2.2 Fire-resistance rating. The smoke barriers shall be fire-resistance rated for 30 minutes and constructed in accordance with the International Building Code.

3407.3.3 Interior finish. The interior finish of walls and ceilings in exits and corridors in any work area shall comply with the requirements of the International Building Code.

Exception: Existing interior finish materials that do not comply with the interior finish requirements of the International Building Code shall be permitted to be treated with an approved fire-retardant coating in accordance with the manufacturer's instructions to achieve the required rating.

3407.3.3.1 Supplemental interior finish requirements. Where the work area on any floor exceeds 50 percent of the floor area, Section 3407.3.3 shall also apply to the interior finish in exits and corridors serving the work area throughout the floor.

Exception: Interior finish within tenant spaces that are entirely outside the work area.

3407.3.4 Guards. The requirements of Sections 3407.3.4.1 and 3407.3.4.2 shall apply in all work areas.

3407.3.4.1 Minimum requirement. Every portion of a floor, such as a balcony or a loading dock, that is more than 30 inches (762 mm) above the floor or grade below and is not provided with guards, or those in which the existing guards are judged to be in danger of collapsing, shall be provided with guards.

3407.3.4.2 Design. Where there are no guards or where existing guards must be replaced, the guards shall be designed and installed in accordance with the International Building Code.

(SECTION 804 FIRE PROTECTION)

3407.4 Fire protection. The requirements of this section shall be limited to work areas in which Level 2 alterations are being performed, and where specified they shall apply throughout the floor on which the work areas are located or otherwise beyond the work area.

3407.4.1 Corridor ratings. Where an approved automatic sprinkler system is installed throughout the story, the required fire-resistance rating for any corridor located on the story shall be permitted to be reduced in accordance with the International Building Code. In order to be considered for a corridor rating reduction, such system shall provide coverage for the stairwell landings serving the floor and the intermediate landings immediately below.

3407.4.2 Automatic sprinkler systems. Automatic sprinkler systems shall be provided in accordance with the requirements of Sections 3407.4.2.1 through 3407.4.2.5. Installation requirements shall be in accordance with the International Building Code.

3407.4.2.1 High-rise buildings. In high-rise buildings, work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with automatic sprinkler protection in the entire work area where the work area is located on a floor that has a sufficient sprinkler water supply system from an existing standpipe or a sprinkler riser serving that floor.

3407.4.2.1.1 Supplemental automatic sprinkler system requirements. Where the work area on any floor exceeds 50 percent of that floor area, Section 3407.4.2.1 shall apply to the entire floor on which the work area is located.

Exception: Tenant spaces that are entirely outside the work area.

3407.4.2.2 Groups A, B, E, F-1, H, I, M, R-1, R-2, R-4, S-1 and S-2. In buildings with occupancies in Groups A, B, E, F-1, H, I, M, R-1, R-2, R-4, S-1 and S-2, work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with automatic sprinkler protection where all of the following conditions occur:

1. The work area is required to be provided with automatic sprinkler protection in accordance with the International Building Code as applicable to new construction; and
2. The work area exceeds 50 percent of the floor area.

Exceptions:

1. Work areas in Group R occupancies three stories or less in height.
2. If the building does not have sufficient municipal water supply for design of a fire sprinkler system available to the floor without installation of a new fire pump, work areas shall be protected by an automatic smoke detection system throughout all occupiable spaces other than sleeping units or individual dwelling units that activates the occupant notification system in accordance with Sections 907.4, 907.5 and 907.6 of the International Building Code.

3407.4.2.2.1 Mixed uses. In work areas containing mixed uses, one or more of which requires automatic sprinkler protection in accordance with Section 3407.4.2.2, such protection shall not be required throughout the work area provided that the uses requiring such protection are separated from those not requiring protection by fire-resistance-rated construction having a minimum 2-hour rating for Group H and a minimum 1-hour rating for all other occupancy groups.

3407.4.2.3 Windowless stories. Work located in a windowless story, as determined in accordance with the International Building Code, shall be sprinklered where the work area is required to be sprinklered under the provisions of the International Building Code for newly constructed buildings and the building has a sufficient municipal water supply without installation of a new fire pump.

3407.4.2.4 Other required automatic sprinkler systems. In buildings and areas listed in Table 903.2.11.6, work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with an automatic sprinkler system under the following conditions:

1. The work area is required to be provided with an automatic sprinkler system in accordance with the International Building Code applicable to new construction; and
2. The building has sufficient municipal water supply for design of an automatic sprinkler system available to the floor without installation of a new fire pump.

3407.4.2.5 Supervision. Fire sprinkler systems required by this section shall be supervised by one of the following methods:

1. Approved central station system in accordance with NFPA 72;
2. Approved proprietary system in accordance with NFPA 72;
3. Approved remote station system of the jurisdiction in accordance with NFPA 72; or
4. When approved by the code official, approved local alarm service that will cause the sounding of an alarm in accordance with NFPA 72.

Exception: Supervision is not required for the following:

1. Underground gate valve with roadway boxes.
2. Halogenated extinguishing systems.
3. Carbon dioxide extinguishing systems.
4. Dry- and wet-chemical extinguishing systems.
5. Automatic sprinkler systems installed in accordance with NFPA 13R where a common supply main is used to supply both domestic and automatic sprinkler systems and a separate shutoff valve for the automatic sprinkler system is not provided.

3407.4.3 Standpipes. Where the work area includes exits or corridors shared by more than one tenant and is located more than 50 feet (15 240 mm) above or below the lowest level of fire department access,

a standpipe system shall be provided. Standpipes shall have an approved fire department connection with hose connections at each floor level above or below the lowest level of fire department access. Standpipe systems shall be installed in accordance with the International Building Code.

Exceptions:

1. No pump shall be required provided that the standpipes are capable of accepting delivery by fire department apparatus of a minimum of 250 gallons per minute (gpm) at 65 pounds per square inch (psi) (946 L/m at 448KPa) to the topmost floor in buildings equipped throughout with an automatic sprinkler system or a minimum of 500 gpm at 65 psi (1892 L/m at 448KPa) to the topmost floor in all other buildings. Where the standpipe terminates below the topmost floor, the standpipe shall be designed to meet (gpm/psi) (L/m/KPa) requirements of this exception for possible future extension of the standpipe.
2. The interconnection of multiple standpipe risers shall not be required.

3407.4.4 Fire alarm and detection. An approved fire alarm system shall be installed in accordance with Sections 3407.4.4.1 through 3407.4.4.3. Where automatic sprinkler protection is provided in accordance with Section 3407.4.2 and is connected to the building fire alarm system, automatic heat detection shall not be required.

An approved automatic fire detection system shall be installed in accordance with the provisions of this code and NFPA 72. Devices, combinations of devices, appliances, and equipment shall be approved. The automatic fire detectors shall be smoke detectors, except that an approved alternative type of detector shall be installed in spaces such as boiler rooms, where products of combustion are present during normal operation in sufficient quantity to actuate a smoke detector.

3407.4.4.1 Occupancy requirements. A fire alarm system shall be installed in accordance with Sections 3407.4.4.1.1 through 3407.4.4.1.7. Existing alarm-notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm-notification appliances within the work area shall be provided and automatically activated.

Exceptions:

1. Occupancies with an existing, previously approved fire alarm system.
2. Where selective notification is permitted, alarm-notification appliances shall be automatically activated in the areas selected.

3407.4.4.1.1 Group E. A fire alarm system shall be installed in work areas of Group E occupancies as required by the International Fire Code for existing Group E occupancies.

3407.4.4.1.2 Group I-1. A fire alarm system shall be installed in work areas of Group I-1 residential care/assisted living facilities as required by the International Fire Code for existing Group I-1 occupancies.

3407.4.4.1.3 Group I-2. A fire alarm system shall be installed in work areas of Group I-2 occupancies as required by the International Fire Code for existing Group I-2 occupancies.

3407.4.4.1.4 Group I-3. A fire alarm system shall be installed in work areas of Group I-3 occupancies as required by the International Fire Code for existing Group I-3 occupancies.

3407.4.4.1.5 Group R-1. A fire alarm system shall be installed in Group R-1 occupancies as required by the International Fire Code for existing Group R-1 occupancies.

3407.4.4.1.6 Group R-2. A fire alarm system shall be installed in work areas of Group R-2 apartment buildings as required by the International Fire Code for existing Group R-2 occupancies.

3407.4.4.1.7 Group R-4. A fire alarm system shall be installed in work areas of Group R-4 residential care/assisted living facilities as required by the International Fire Code for existing Group R-4 occupancies.

3407.4.4.2 Supplemental fire alarm system requirements. Where the work area on any floor exceeds 50 percent of that floor area, Section 3407.4.4 .1 shall apply throughout the floor.

Exception: Alarm-initiating and notification appliances shall not be required to be installed in tenant spaces outside of the work area.

3407.4.4.3 Smoke alarms. Individual sleeping units and individual dwelling units in any work area in Group R and I-1 occupancies shall be provided with smoke alarms in accordance with the International Fire Code.

Exception: Interconnection of smoke alarms outside of the work area shall not be required.

(SECTION 805 MEANS OF EGRESS)

3407.5 Means of egress. Means of egress requirements for work areas in a level 2 alteration shall be in accordance with Sections 3407.5.1 through 3407.5.10.2 .

3407.5.1 Scope. The requirements of this section shall be limited to work areas that include exits or corridors shared by more than one tenant within the work area in which Level 2 alterations are being performed, and where specified they shall apply throughout the floor on which the work areas are located or otherwise beyond the work area.

3407.5.2 General. The means of egress shall comply with the requirements of this section.

Exceptions:

1. Where the work area and the means of egress serving it complies with NFPA 101.
2. Means of egress conforming to the requirements of the building code under which the building was constructed shall be considered compliant means of egress if, in the opinion of the code official, they do not constitute a distinct hazard to life.

3407.5.3 Number of exits. The number of exits shall be in accordance with Sections 3407.5.3.1 through 3407.5.3.3

3407.5.3.1 Minimum number. Every story utilized for human occupancy on which there is a work area that includes exits or corridors shared by more than one tenant within the work area shall be provided with the minimum number of exits based on the occupancy and the occupant load in accordance with the International Building Code. In addition, the exits shall comply with Sections 3407.5.3.1.1 and 3407.5.3.1.2.

3407.5.3.1.1 Single-exit buildings. Only one exit is required from buildings and spaces of the following occupancies:

1. In Group A, B, E, F, M, U and S occupancies, a single exit is permitted in the story at the level of exit discharge when the occupant load of the story does not exceed 50 and the exit access travel distance does not exceed 75 feet (22 860 mm).
2. Group B, F-2, and S-2 occupancies not more than two stories in height that are not greater than 3,500 square feet per floor (326 m²), when the exit access travel distance does not exceed 75 feet (22 860 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.
3. Open parking structures where vehicles are mechanically parked.

4. In community residences for the developmentally disabled, the maximum occupant load excluding staff is 12.
5. Groups R-1 and R-2 not more than two stories in height, when there are not more than four dwelling units per floor and the exit access travel distance does not exceed 50 feet (15 240 mm). The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour.
6. In multilevel dwelling units in buildings of occupancy Group R-1 or R-2, an exit shall not be required from every level of the dwelling unit provided that one of the following conditions is met:
 - 6.1. The travel distance within the dwelling unit does not exceed 75 feet (22 860 mm); or
 - 6.2. The building is not more than three stories in height and all third-floor space is part of one or more dwelling units located in part on the second floor; and no habitable room within any such dwelling unit shall have a travel distance that exceeds 50 feet (15 240 mm) from the outside of the habitable room entrance door to the inside of the entrance door to the dwelling unit.
7. In Group R-2, H-4, H-5 and I occupancies and in rooming houses and child care centers, a single exit is permitted in a one-story building with a maximum occupant load of 10 and the exit access travel distance does not exceed 75 feet (22 860 mm).
8. In buildings of Group R-2 occupancy that are equipped throughout with an automatic fire sprinkler system, a single exit shall be permitted from a basement or story below grade if every dwelling unit on that floor is equipped with an approved window providing a clear opening of at least 5 square feet (0.47 m²) in area, a minimum net clear opening of 24 inches (610 mm) in height and 20 inches (508 mm) in width, and a sill height of not more than 44 inches (1118 mm) above the finished floor.
9. In buildings of Group R-2 occupancy of any height with not more than four dwelling units per floor; with a smokeproof enclosure or outside stair as an exit; and with such exit located within 20 feet (6096 mm) of travel to the entrance doors to all dwelling units served thereby.
10. In buildings of Group R-3 occupancy equipped throughout with an automatic fire sprinkler system, only one exit shall be required from basements or stories below grade.

3407.5.3.1.2 Fire escapes required. When more than one exit is required, an existing or newly constructed fire escape complying with Section 3407.5.3.1.2.1 shall be accepted as providing one of the required means of egress.

3407.5.3.1.2.1 Fire escape access and details. Fire escapes shall comply with all of the following requirements:

1. Occupants shall have unobstructed access to the fire escape without having to pass through a room subject to locking.
2. Access to a new fire escape shall be through a door, except that windows shall be permitted to provide access from single dwelling units or sleeping units in Group R-1, R-2 and I-1 occupancies or to provide access from spaces having a maximum occupant load of 10 in other occupancy classifications.
 - 2.1. The window shall have a minimum net clear opening of 5.7 square feet (0.53 m²) or 5 square feet (0.46 m²) where located at grade.
 - 2.2. The minimum net clear opening height shall be 24 inches (610 mm) and net clear opening width shall be 20 inches (508 mm).
 - 2.3. The bottom of the clear opening shall not be greater than 44 inches (1118 mm) above the floor.
 - 2.4. The operation of the window shall comply with the operational constraints of the International Building Code.
3. Newly constructed fire escapes shall be permitted only where exterior stairs cannot be utilized because of lot lines limiting the stair size or because of the sidewalks, alleys, or roads at grade level.
4. Openings within 10 feet (3048 mm) of fire escape stairs shall be protected by fire assemblies having minimum 3/4-hour fire-resistance ratings.

Exception: Opening protection shall not be required in buildings equipped throughout with an approved automatic sprinkler system.

5. In all buildings of Group E occupancy, up to and including the 12th grade, buildings of Group I occupancy, rooming houses and childcare centers, ladders of any type are prohibited on fire escapes used as a required means of egress.

3407.5.3.1.2.2 Construction. The fire escape shall be designed to support a live load of 100 pounds per square foot (4788 Pa) and shall be constructed of steel or other approved noncombustible materials. Fire escapes constructed of wood not less than nominal 2 inches (51 mm) thick are permitted on buildings of Type V construction. Walkways and railings located over or supported by combustible roofs in buildings of Types III and IV construction are permitted to be of wood not less than nominal 2 inches (51 mm) thick.

3407.5.3.1.2.3 Dimensions. Stairs shall be at least 22 inches (559 mm) wide with risers not more than, and treads not less than, 8 inches (203 mm). Landings at the foot of stairs shall not be less than 40 inches (1016 mm) wide by 36 inches (914 mm) long and located not more than 8 inches (203 mm) below the door.

3407.5.3.2 Mezzanines. Mezzanines in the work area and with an occupant load of more than 50 or in which the travel distance to an exit exceeds 75 feet (22 860 mm) shall have access to at least two independent means of egress.

Exception: Two independent means of egress are not required where the travel distance to an exit does not exceed 100 feet (30 480 mm) and the building is protected throughout with an automatic sprinkler system.

3407.5.3.3 Main entrance—Group A. All buildings of Group A with an occupant load of 300 or more shall be provided with a main entrance capable of serving as the main exit with an egress capacity of at least one-half of the total occupant load. The remaining exits shall be capable of providing one-half of the total required exit capacity.

Exception: Where there is no well-defined main exit or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the building provided that the total width of egress is not less than 100 percent of the required width.

3407.5.4 Egress doorways. Egress doorways in any work area shall comply with Sections 3407.5.4.1 through 3407.5.4.5.

3407.5.4.1 Two egress doorways required. Work areas shall be provided with two egress doorways in accordance with the requirements of Sections 3404.8.4.1.1 and 3404.8.4.1.2.

3407.5.4.1.1 Occupant load and travel distance. In any work area, all rooms and spaces having an occupant load greater than 50 or in which the travel distance to an exit exceeds 75 feet (22 860 mm) shall have a minimum of two egress doorways.

Exceptions:

1. Storage rooms having a maximum occupant load of 10.
2. Where the work area is served by a single exit in accordance with Section 3407.5.3.1.1.

3407.5.4.1.2 Group I-2. In buildings of Group I-2 occupancy, any patient sleeping room or suite of patient rooms greater than 1,000 square feet (93 m²) within the work area shall have a minimum of two egress doorways.

3407.5.4.2 Door swing. In the work area and in the egress path from any work area to the exit discharge, all egress doors serving an occupant load greater than 50 shall swing in the direction of exit travel.

3407.5.4.2.1 Supplemental requirements for door swing. Where the work area exceeds 50 percent of the floor area, door swing shall comply with Section 3407.5.4.2 throughout the floor.

Exception: Means of egress within or serving only a tenant space that is entirely outside the work area.

3407.5.4.3 Door closing. In any work area, all doors opening onto an exit passageway at grade or an exit stair shall be self-closing or automatic-closing by listed closing devices.

Exceptions:

1. Where exit enclosure is not required by the International Building Code.
2. Means of egress within or serving only a tenant space that is entirely outside the work area.

3407.5.4.3.1 Supplemental requirements for door closing. Where the work area exceeds 50 percent of the floor area, doors shall comply with Section 3407.5.4.3 throughout the exit stair from the work area to, and including, the level of exit discharge.

3407.5.4.4 Panic hardware. In any work area, and in the egress path from any work area to the exit discharge, in buildings or portions thereof of Group A assembly occupancies with an occupant load greater than 100, all required exit doors equipped with latching devices shall be equipped with approved panic hardware.

3407.5.4.4.1 Supplemental requirements for panic hardware. Where the work area exceeds 50 percent of the floor area, panic hardware shall comply with Section 3407.5.4.4 throughout the floor.

Exception: Means of egress within a tenant space that is entirely outside the work area.

3407.5.4.5 Emergency power source in Group I-3. Work areas in buildings of Group I-3 occupancy having remote power unlocking capability for more than 10 locks shall be provided with an emergency power source for such locks. Power shall be arranged to operate automatically upon failure of normal power within 10 seconds and for a duration of not less than 1 hour.

3407.5.5 Openings in corridor walls. Openings in corridor walls in any work area shall comply with Sections 3407.5.5.1 through 3407.5.5.4.

Exception: Openings in corridors where such corridors are not required to be rated in accordance with the International Building Code.

3407.5.5.1 Corridor doors. Corridor doors in the work area shall not be constructed of hollow core wood and shall not contain louvers. All dwelling unit or sleeping unit corridor doors in work areas in buildings of Groups R-1, R-2, and I-1 shall be at least 13/8-inch (35 mm) solid core wood or approved equivalent and shall not have any glass panels, other than approved wired glass or other approved glazing material in metal frames. All dwelling unit or sleeping unit corridor doors in work areas in buildings of Groups R-1, R-2, and I-1 shall be equipped with approved door closers. All replacement doors shall be 13/4-inch (45 mm) solid bonded wood core or approved equivalent, unless the existing frame will accommodate only a 13/8-inch (35 mm) door.

Exceptions:

1. Corridor doors within a dwelling unit or sleeping unit.

2. Existing doors meeting the requirements of Guidelines on Fire Ratings of Archaic Materials and Assemblies (IEBC Resource A) for a rating of 15 minutes or more shall be accepted as meeting the provisions of this requirement.
3. Existing doors in buildings protected throughout with an approved automatic sprinkler system shall be required only to resist smoke, be reasonably tight fitting, and shall not contain louvers.
4. In group homes with a maximum of 15 occupants and that are protected with an approved automatic detection system, closing devices may be omitted.
5. Door assemblies having a fire protection rating of at least 20 minutes.

3407.5.5.2 Transoms. In all buildings of Group I-1, R-1 and R-2 occupancy, all transoms in corridor walls in work areas shall either be glazed with 1/4-inch (6.4 mm) wired glass set in metal frames or other glazing assemblies having a fire protection rating as required for the door and permanently secured in the closed position or sealed with materials consistent with the corridor construction.

3407.5.5.3 Other corridor openings. In any work area, any other sash, grille, or opening in a corridor and any window in a corridor not opening to the outside air shall be sealed with materials consistent with the corridor construction.

3407.5.5.3.1 Supplemental requirements for other corridor opening. Where the work area exceeds 50 percent of the floor area, Section 3407.5.5.3 shall be applicable to all corridor windows, grills, sashes, and other openings on the floor.

Exception: Means of egress within or serving only a tenant space that is entirely outside the work area.

3407.5.5.4 Supplemental requirements for corridor openings. Where the work area on any floor exceeds 50 percent of the floor area, the requirements of Sections 3407.5.5.1 through 3407.5.5.3 shall apply throughout the floor.

3407.5.6 Dead-end corridors. Dead-end corridors in any work area shall not exceed 35 feet (10 670 mm).

Exceptions:

1. Where dead-end corridors of greater length are permitted by the International Building Code.
2. In other than Group A and H occupancies, the maximum length of an existing dead-end corridor shall be 50 feet (15 240 mm) in buildings equipped throughout with an automatic fire alarm system installed in accordance with the International Building Code.
3. In other than Group A and H occupancies, the maximum length of an existing dead-end corridor shall be 70 feet (21 356 mm) in buildings equipped throughout with an automatic sprinkler system installed in accordance with the International Building Code.
4. In other than Group A and H occupancies, the maximum length of an existing, newly constructed, or extended dead-end corridor shall not exceed 50 feet (15 240 mm) on floors equipped with an automatic sprinkler system installed in accordance with the International Building Code.

3407.5.7 Means-of-egress lighting. Means-of-egress lighting shall be in accordance with Section 3407.5.7.1 through 3407.5.7.2, as applicable.

3407.5.7.1 Artificial lighting required. Means of egress in all work areas shall be provided with artificial lighting in accordance with the requirements of the International Building Code.

3407.5.7.2 Supplemental requirements for means-of-egress lighting. Where the work area on any floor exceeds 50 percent of that floor area, means of egress throughout the floor shall comply with Section 3407.5.7.1.

Exception: Means of egress within or serving only a tenant space that is entirely outside the work area.

3407.5.8 Exit signs. Exit signs shall be in accordance with Sections 3407.5.8.1 and 3407.5.8.2, as applicable.

3407.5.8.1 Work areas. Means of egress in all work areas shall be provided with exit signs in accordance with the requirements of the International Building Code.

3407.5.8.2 Supplemental requirements for exit signs. Where the work area on any floor exceeds 50 percent of that floor area, means of egress throughout the floor shall comply with Section 3407.5.8.1.

Exception: Means of egress within a tenant space that is entirely outside the work area.

3407.5.9 Handrails. The requirements of Sections 3407.5.9.1 and 3407.5.9.2 shall apply to handrails from the work area floor to, and including, the level of exit discharge.

3407.5.9.1 Minimum requirement. Every required exit stairway that is part of the means of egress for any work area and that has three or more risers and is not provided with at least one handrail, or in which the existing handrails are judged to be in danger of collapsing, shall be provided with handrails for the full length of the run of steps on at least one side. All exit stairways with a required egress width of more than 66 inches (1676 mm) shall have handrails on both sides.

3407.5.9.2 Design. Handrails required in accordance with Section 3407.5.9.1 shall be designed and installed in accordance with the provisions of the International Building Code.

3407.5.10 Guards. The requirements of Sections 3407.5.10.1 and 3407.5.10.2 shall apply to guards from the work area floor to, and including, the level of exit discharge but shall be confined to the egress path of any work area.

3407.5.10.1 Minimum requirement. Every open portion of a stair, landing, or balcony that is more than 30 inches (762 mm) above the floor or grade below and is not provided with guards, or those portions in which existing guards are judged to be in danger of collapsing, shall be provided with guards.

3407.5.10.2 Design. Guards required in accordance with Section 3407.5.10.1 shall be designed and installed in accordance with the International Building Code.

(SECTION 806 ACCESSIBILITY)

3407.6 Accessibility. A building, facility, or element that is altered shall comply with Sections 3407.6.1 through 3407.6.4 and Section 3406.4.

3407.6.1 Stairs and escalators in existing buildings. In alterations where an escalator or stair is added where none existed previously, an accessible route shall be provided in accordance with Sections 1104.4 and 1104.5.

3407.6.2 Accessible dwelling units and sleeping units. Where Group I-1, I-2, I-3, R-1, R-2 or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 of the International Building Code for accessible units and Chapter 9 for visible alarms apply only to the quantity of spaces being added.

3407.6.3 Type A dwelling or sleeping units. Where more than 20 Group R-2 dwelling or sleeping units are being added, the requirements of Section 1107 of the International Building Code for Type A units and Chapter 9 for visible alarms apply only to the quantity of the spaces being added.

3407.6.4 Type B dwelling or sleeping units. Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 of the International Building Code for Type B units and Chapter 9 for visible alarms apply only to the quantity of the spaces being added.

(SECTION 807STRUCTURAL)

3407.7 Structural. Structural elements and systems within buildings undergoing Level 2 alterations shall comply with Sections 3407.7.1 through 3407.7.5

3407.7.1 New structural elements. New structural elements in alterations, including connections and anchorage, shall comply with the International Building Code.

3407.7.2 Minimum design loads. The minimum design loads on existing elements of a structure that do not support additional loads as a result of an alteration shall be the loads applicable at the time the building was constructed.

3407.7.3 Existing structural elements carrying gravity loads. Alterations shall not reduce the capacity of existing gravity load-carrying structural elements unless it is demonstrated that the elements have the capacity to carry the applicable design gravity loads required by the International Building Code. Existing structural elements supporting any additional gravity loads as a result of the alterations, including the effects of snow drift, shall comply with the International Building Code.

Exceptions:

1. Structural elements whose stress is not increased by more than 5 percent.
2. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential purposes where the existing building and its alteration comply with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.

3407.7.4 Existing structural elements resisting lateral loads. Alterations affecting the demands or capacities of existing elements of the lateral load-resisting system shall be evaluated using the wind provisions of the International Building Code and the reduced IBC-level seismic forces. Any existing lateral load-resisting structural elements whose demand-capacity ratio with the alteration considered is more than 10 percent greater than its demand-capacity ratio with the alteration ignored shall be brought into compliance with those wind and seismic provisions. In addition, the alteration shall not create a structural irregularity prohibited by ASCE 7 unless the entire structure complies with Section 3401.6.4.4. For the purposes of this section, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacity shall account for the cumulative effects of additions and alterations since the original construction.

3407.7.5 Voluntary lateral force-resisting system alterations. Alterations of existing structural elements and additions of new structural elements that are initiated for the purpose of increasing the lateral force-resisting strength or stiffness of an existing structure and that are not required by other sections of this code shall not be required to be designed for forces conforming to the International Building Code, provided that an engineering analysis is submitted to show that:

1. The capacity of existing structural elements required to resist forces is not reduced;
2. The lateral loading to existing structural elements is not increased either beyond its capacity or more than 10 percent;
3. New structural elements are detailed and connected to the existing structural elements as required by the International Building Code;
4. New or relocated nonstructural elements are detailed and connected to existing or new structural elements as required by the International Building Code; and

5. A dangerous condition as defined in this code is not created. Voluntary alterations to lateral force-resisting systems conducted in accordance with Appendix A and the referenced standards of this code shall be permitted.

(SECTION 808 ELECTRICAL)

3407.8 Electrical. Electrical equipment and wiring in buildings undergoing a level 2 alteration shall be in accordance with Sections 3407.8.1 through 3407.8.3.

3407.8.1 New installations. All newly installed electrical equipment and wiring relating to work done in any work area shall comply with the materials and methods requirements of Section 3406.1.

Exception: Electrical equipment and wiring in newly installed partitions and ceilings shall comply with all applicable requirements of NFPA 70.

3407.8.2 Existing installations. Existing wiring in all work areas in Group A-1, A-2, A-5, H and I occupancies shall be upgraded to meet the materials and methods requirements of Section 3404.3.

3407.8.3 Residential occupancies. In Group R-2, R-3 and R-4 occupancies and buildings regulated by the International Residential Code, the requirements of Sections 3407.8.3.1 through 3407.8.3.7 shall be applicable only to work areas located within a dwelling unit.

3407.8.3.1 Enclosed areas. All enclosed areas, other than closets, kitchens, basements, garages, hallways, laundry areas, utility areas, storage areas and bathrooms shall have a minimum of two duplex receptacle outlets or one duplex receptacle outlet and one ceiling or wall-type lighting outlet.

3407.8.3.2 Kitchens. Kitchen areas shall have a minimum of two duplex receptacle outlets.

3407.8.3.3 Laundry areas. Laundry areas shall have a minimum of one duplex receptacle outlet located near the laundry equipment and installed on an independent circuit.

3407.8.3.4 Ground fault circuit interruption. Newly installed receptacle outlets shall be provided with ground fault circuit interruption as required by NFPA 70.

3407.8.3.5 Minimum lighting outlets. At least one lighting outlet shall be provided in every bathroom, hallway, stairway, attached garage, and detached garage with electric power, and to illuminate outdoor entrances and exits.

3407.8.3.6 Utility rooms and basements. At least one lighting outlet shall be provided in utility rooms and basements where such spaces are used for storage or contain equipment requiring service.

3407.8.3.7 Clearance for equipment. Clearance for electrical service equipment shall be provided in accordance with the NFPA 70.

(SECTION 809 MECHANICAL)

3407.9 Mechanical. Mechanical ventilation in buildings undergoing a level 2 alteration shall be in accordance with Sections 3407.9.1 through 3407.9.3

3407.9.1 Mechanical. All reconfigured spaces intended for occupancy and all spaces converted to habitable or occupiable space in any work area shall be provided with natural or mechanical ventilation in accordance with the International Mechanical Code.

Exception: Existing mechanical ventilation systems shall comply with the requirements of Section 3407.9.2.

3407.9.2 Altered existing systems. In mechanically ventilated spaces, existing mechanical ventilation systems that are altered, reconfigured, or extended shall provide not less than 5 cubic feet per minute (cfm) (0.0024 m³/s) per person of outdoor air and not less than 15 cfm (0.0071 m³/s) of ventilation air per person; or not less than the amount of ventilation air determined by the Indoor Air Quality Procedure of ASHRAE 62.

3407.9.3 Local exhaust. All newly introduced devices, equipment, or operations that produce airborne particulate matter, odors, fumes, vapor, combustion products, gaseous contaminants, pathogenic and allergenic organisms, and microbial contaminants in such quantities as to affect adversely or impair health or cause discomfort to occupants shall be provided with local exhaust.

(SECTION 810 PLUMBING)

3407.10 Plumbing fixtures. Where the occupant load of the story is increased by more than 20 percent, plumbing fixtures for the story shall be provided in quantities specified in the International Plumbing Code based on the increased occupant load.

(SECTION 811 ENERGY CONSERVATION)

3407.11 Energy conservation. Level 2 alterations to existing buildings or structures are permitted without requiring the entire building or structure to comply with the energy requirements of the International Energy Conservation Code or International Residential Code. The alterations shall conform to the energy requirements of the International Energy Conservation Code or International Residential Code as they relate to new construction only.

(CHAPTER 9 ALTERATIONS—LEVEL 3, SECTION 901 GENERAL)

SECTION 3408 **LEVEL 3 ALTERATIONS**

3408.1 General. Level 3 alterations shall comply with Sections 3408.1.1 through 3408.9

3408.1 Scoping. Level 3 alterations includes alterations where the work area exceeds 50% of the aggregate area of the building.

3408.2 Compliance. In addition to the provisions of this chapter, work shall comply with all of the requirements of Chapters 3406 and 3407. The requirements of Sections 3407.3, 3407.4 and 3407.5 shall apply within all work areas whether or not they include exits and corridors shared by more than one tenant and regardless of the occupant load.

Exception: Buildings in which the reconfiguration of space affecting exits or shared egress access is exclusively the result of compliance with the accessibility requirements of Section 3406.4 shall not be required to comply with this chapter.

(SECTION 902 SPECIAL USE AND OCCUPANCY)

3408.3 Special use and occupancy. Buildings undergoing a level 3 alteration containing a special use shall be in accordance with this section.

3408.3.1 High-rise buildings. Any building having occupied floors more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access shall comply with the requirements of Sections 3408.3.1.1 and 3408.3.1.2.

3408.3.1.1 Recirculating air or exhaust systems. When a floor is served by a recirculating air or exhaust system with a capacity greater than 15,000 cubic feet per minute (701 m³/s), that system shall

be equipped with approved smoke and heat detection devices installed in accordance with the International Mechanical Code.

3408.3.1.2 Elevators. Where there is an elevator or elevators for public use, at least one elevator serving the work area shall comply with this section. Existing elevators with a travel distance of 25 feet (7620 mm) or more above or below the main floor or other level of a building and intended to serve the needs of emergency personnel for fire-fighting or rescue purposes shall be provided with emergency operation in accordance with ASME A17.3. New elevators shall be provided with Phase I emergency recall operation and Phase II emergency in-car operation in accordance with ASME A17.1.

3408.3.2 Boiler and furnace equipment rooms. Boiler and furnace equipment rooms adjacent to or within the following facilities shall be enclosed by 1-hour fire-resistance-rated construction: day nurseries, children's shelter facilities, residential childcare facilities, and similar facilities with children below the age of 21/2 years or that are classified as Group I-2 occupancies, shelter facilities, residences for the developmentally disabled, group homes, teaching family homes, transitional living homes, rooming and boarding houses, hotels, and multiple dwellings.

Exceptions:

1. Furnace and boiler equipment of low-pressure type, operating at pressures of 15 pounds per square inch gauge (psig) (103.4 KPa) or less for steam equipment or 170 psig (1171 KPa) or less for hot water equipment, when installed in accordance with manufacturer recommendations.
2. Furnace and boiler equipment of residential R-3 type with 200,000 British thermal units (Btu) (2.11 × 10⁸ J) per hour input rating or less is not required to be enclosed.
3. Furnace rooms protected with automatic sprinkler protection.

3408.3.2.1 Emergency controls. Emergency controls for boilers and furnace equipment shall be provided in accordance with the International Mechanical Code in all buildings classified as day nurseries, children's shelter facilities, residential childcare facilities, and similar facilities with children below the age of 21/2 years or that are classified as Group I-2 occupancies, and in group homes, teaching family homes, and supervised transitional living homes in accordance with the following:

1. Emergency shutoff switches for furnaces and boilers in basements shall be located at the top of the stairs leading to the basement; and
2. Emergency shutoff switches for furnaces and boilers in other enclosed rooms shall be located outside of such room.

(SECTION 903 BUILDING ELEMENTS AND MATERIALS)

3408.4 Building elements and materials. Building elements and materials shall be in accordance with this section.

3408.4.1 Existing shafts and vertical openings. Existing stairways that are part of the means of egress shall be enclosed in accordance with Section 3407.3.1.1 from the highest work area floor to, and including, the level of exit discharge and all floors below.

3408.4.2 Fire partitions in Group R-3. Fire separation in Group R-3 occupancies shall be in accordance with Section 3408.4.2.1.

3408.4.2.1 Separation required. Where the work area is in any attached dwelling unit in Group R-3 or any multiple single-family dwelling (townhouse), walls separating the dwelling units that are not continuous from the foundation to the underside of the roof sheathing shall be constructed to provide a continuous fire separation using construction materials consistent with the existing wall or complying with the requirements for new structures. All work shall be performed on the side of the dwelling unit wall that is part of the work area.

Exception: Where alterations or repairs do not result in the removal of wall or ceiling finishes exposing the structure, walls are not required to be continuous through concealed floor spaces.

3408.4.3 Interior finish. Interior finish in exits serving the work area shall comply with Section 3407.3.3 between the highest floor on which there is a work area to the floor of exit discharge.

(SECTION 904 FIRE PROTECTION)

3408.5 Fire protection. Fire protection requirements for buildings undergoing level 3 alterations shall be in accordance with this section.

3408.5.1 Automatic sprinkler systems. Automatic sprinkler systems shall be provided in all work areas when required by Section 3407.4.2 or this section.

3408.5.1.1 High-rise buildings. In high-rise buildings, work areas shall be provided with automatic sprinkler protection where the building has a sufficient municipal water supply system to the site. Where the work area exceeds 50 percent of floor area, sprinklers shall be provided in the specified areas where sufficient municipal water supply for design and installation of a fire sprinkler system is available at the site.

3408.5.1.2 Rubbish and linen chutes. Rubbish and linen chutes located in the work area shall be provided with automatic sprinkler system protection or an approved automatic fire-extinguishing system where protection of the rubbish and linen chute would be required under the provisions of the International Building Code for new construction.

3408.5.2 Fire alarm and detection systems. Fire alarm and detection systems complying with Sections 3407.4.4.1 and 3407.4.4.3 shall be provided throughout the building in accordance with the International Building Code.

3408.5.2.1 Manual fire alarm systems. Where required by the International Building Code, a manual fire alarm system shall be provided throughout the work area. Alarm notification appliances shall be provided on such floors and shall be automatically activated as required by the International Building Code.

Exceptions:

1. Alarm-initiating and notification appliances shall not be required to be installed in tenant spaces outside of the work area.
2. Visual alarm notification appliances are not required, except where an existing alarm system is upgraded or replaced or where a new fire alarm system is installed.

3408.5.2.2 Automatic fire detection. Where required by the International Building Code for new buildings, automatic fire detection systems shall be provided throughout the work area.

(SECTION 905 MEANS OF EGRESS)

3408.6. Means of egress. The means of egress shall comply with the requirements of Section 3407.5 except as specifically required in Sections 3408.6.1 and 3408.6.2.

3408.6.1 Means-of-egress lighting. Means of egress from the highest work area floor to the floor of exit discharge shall be provided with artificial lighting within the exit enclosure in accordance with the requirements of the International Building Code.

3408.6.2 Exit signs. Means of egress from the highest work area floor to the floor of exit discharge shall be provided with exit signs in accordance with the requirements of the International Building Code.

(SECTION 906 ACCESSIBILITY)

3408.7 Accessibility. A building, facility or element that is altered shall comply with this section and Sections 3406.4 and 3407.6

3408.7.1 Type B dwelling or sleeping units. Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered or added, the requirements of Section 1107 of the International Building Code for Type B units and Chapter 9 for visible alarms apply only to the quantity of the spaces being altered or added.

(SECTION 907 STRUCTURAL)

3408.8 Structural. Where buildings are undergoing Level 3 alterations including structural alterations, the provisions of this section shall apply.

3408.8.1 New structural elements. New structural elements shall comply with Section 3407.7.1.

3408.8.2 Existing structural elements carrying gravity loads. Existing structural elements carrying gravity loads shall comply with Section 3407.7.3.

3408.8.3 Existing structural elements resisting lateral loads. All existing elements of the lateral force-resisting system shall comply with this section.

Exceptions:

1. Buildings of Group R occupancy with no more than five dwelling or sleeping units used solely for residential purposes that are altered based on the conventional light-frame construction methods of the International Building Code or in compliance with the provisions of the International Residential Code.
2. Where such alterations involve only the lowest story of a building and the change of occupancy provisions of Section 3409 do not apply, only the lateral force-resisting components in and below that story need comply with this section.

3408.8.3.1 Evaluation and analysis. An engineering evaluation and analysis that establishes the structural adequacy of the altered structure shall be prepared by a registered design professional and submitted to the code official.

3408.8.3.2 Substantial structural alteration. Where more than 30 percent of the total floor and roof areas of the building or structure have been or are proposed to be involved in structural alteration within a five-year period, the evaluation and analysis shall demonstrate that the altered building or structure complies with the International Building Code for wind loading and with reduced IBC-level seismic forces. The areas to be counted toward the 30 percent shall be those areas tributary to the vertical load-carrying components, such as joists, beams, columns, walls and other structural components that have been or will be removed, added or altered, as well as areas such as mezzanines, penthouses, roof structures and in-filled courts and shafts.

3408.8.3.3 Limited structural alteration. Where the work does not involve a substantial structural alteration, the existing elements of the lateral load-resisting system shall comply with Section 3407.7.4.

3408.8.3.4 Wall anchors for concrete and masonry buildings. For any building assigned to Seismic Design Category D, E or F with a structural system consisting of concrete or reinforced masonry walls with a flexible roof diaphragm or unreinforced masonry walls with any type of roof diaphragm, the alteration work shall include installation of wall anchors at the roof line to resist the reduced IBC-level seismic forces, unless an evaluation demonstrates compliance of existing wall anchorage.

3408.8.3.5 Bracing for unreinforced masonry parapets. Parapets constructed of unreinforced masonry in buildings assigned to Seismic Design Category D, E or F shall have bracing installed as needed to resist the reduced IBC-level seismic forces, unless an evaluation demonstrates compliance of such items.

(SECTION 908 ENERGY CONSERVATION)

3408.9 Energy conservation. Level 3 alterations to existing buildings or structures are permitted without requiring the entire building or structure to comply with the energy requirements of the International Energy Conservation Code or International Residential Code. The alterations shall conform to the energy requirements of the International Energy Conservation Code or International Residential Code as they relate to new construction only.

*(CHAPTER 10 CHANGE OF OCCUPANCY
SECTION 1001 GENERAL)*

SECTION 3409 CHANGE OF OCCUPANCY

3409.1 Scope. The provisions of this section shall apply where a change of occupancy occurs, as defined in Section 202, including:

1. Where the occupancy classification is not changed; or
2. Where there is a change in occupancy classification or the occupancy group designation changes.

3409.2 Change in occupancy with no change of occupancy classification. A change in occupancy, as defined in Section 202, with no change of occupancy classification shall not be made to any structure that will subject the structure to any special provisions of the applicable International Codes, including the provisions of Sections 3409.5 through 3409.14, without the approval of the code official. A certificate of occupancy shall be issued where it has been determined that the requirements for the change in occupancy have been met.

3409.2.1 Repair and alteration with no change of occupancy classification. Any repair or alteration work undertaken in connection with a change of occupancy that does not involve a change of occupancy classification shall conform to the applicable requirements for the work as classified in Chapter 4 and to the requirements of Sections 3409.5 through 3409.14.

Exception: As modified in Section 3411.8 for historic buildings.

3409.3 Change of occupancy classification. Where the occupancy classification of a building changes, the provisions of Sections 3409.5 through 3409.15 shall apply. This includes a change of occupancy classification within a group as well as a change of occupancy classification from one group to a different group.

3409.3.1 Partial change of occupancy classification. Where a portion of an existing building is changed to a new occupancy classification, Section 3409.15 shall apply.

3409.4 Certificate of occupancy required. A certificate of occupancy shall be issued where a change of occupancy occurs that results in a different occupancy classification as determined by the International Building Code.

(SECTION 1002 SPECIAL USE AND OCCUPANCY)

3409.5 Special use and occupancy. Where the character or use of an existing building or part of an existing building is changed to one of the following special use or occupancy categories as defined in the

International Building Code, the building shall comply with all of the applicable requirements of the International Building Code:

1. Covered and open mall buildings.
2. Atriums.
3. Motor vehicle-related occupancies.
4. Aircraft-related occupancies.
5. Motion picture projection rooms.
6. Stages and platforms.
7. Special amusement buildings.
8. Incidental use areas.
9. Hazardous materials.
10. Ambulatory care facilities.

3409.5.1 Underground buildings. An underground building in which there is a change of use shall comply with the requirements of the International Building Code applicable to underground structures.

(SECTION 1003 BUILDING ELEMENTS AND MATERIALS)

3409.6 Building elements and materials. Building elements and materials in portions of buildings undergoing a change of occupancy classification shall comply with Section 3409.15.

(SECTION 1004 FIRE PROTECTION)

3409.7 Fire protection. Fire protection requirements of Section 3409.15 shall apply where a building or portions thereof undergo a change of occupancy classification.

(SECTION 1005 MEANS OF EGRESS)

3409.8 Means of egress. Means of egress in portions of buildings undergoing a change of occupancy classification shall comply with Section 3409.15.

(SECTION 1006 ACCESSIBILITY)

3409.9 Accessibility. Accessibility in portions of buildings undergoing a change of occupancy classification shall comply with Section 3407.9.8.

(SECTION 1007 STRUCTURAL)

3409.10 Structural. Structural requirements for buildings undergoing a change of occupancy shall comply with this section.

3409.10.1 Gravity loads. Buildings or portions thereof subject to a change of occupancy where such change in the nature of occupancy results in higher uniform or concentrated loads based on Table 1607.1 of the International Building Code shall comply with the gravity load provisions of the International Building Code.

Exception: Structural elements whose stress is not increased by more than 5 percent.

3409.10.2 Snow and wind loads. Buildings and structures subject to a change of occupancy where such change in the nature of occupancy results in higher wind or snow risk categories based on Table 1607.1 of the International Building Code shall be analyzed and shall comply with the applicable wind or snow load provisions of the International Building Code.

Exception: Where the new occupancy with a higher risk category is less than or equal to 10 percent of the total building floor area. The cumulative effect of the area of occupancy changes shall be considered for the purposes of this exception.

3409.10.2 Seismic loads. Existing buildings with a change of occupancy shall comply with the seismic provisions of Sections 3409.10.2.1 and 3409.10.2.2.

3409.10.2.1 Compliance with the International Building Code level seismic forces. Where a building or portion thereof is subject to a change of occupancy that results in the building being assigned to a higher risk category based on Table 1604.5 of the International Building Code; or where such change of occupancy results in a reclassification of a building to a higher hazard category as shown in Table 3409.15.4; or where a change of a Group M occupancy to a Group A, E, I-1, R-1, R-2 or R-4 occupancy with two-thirds or more of the floors involved in Level 3 alteration work, the building shall comply with the requirements for International Building Code level seismic forces as specified in Section 301.1.4.1 for the new risk category.

Exceptions:

1. Group M occupancies being changed to Group A, E, I-1, R-1, R-2 or R-4 occupancies for buildings less than six stories in height and in Seismic Design Category A, B or C.
2. Where approved by the code official, specific detailing provisions required for a new structure are not required to be met where it can be shown that an equivalent level of performance and seismic safety is obtained for the applicable risk category based on the provision for reduced International Building Code level seismic forces as specified in Section 3401.6.4.4.
3. Where the area of the new occupancy with a higher hazard category is less than or equal to 10 percent of the total building floor area and the new occupancy is not classified as Risk Category IV. For the purposes of this exception, buildings occupied by two or more occupancies not included in the same Risk category, shall be subject to the provisions of Section 1604.5.1 of the International Building Code. The cumulative effect of the area of occupancy changes shall be considered for the purposes of this exception.
4. Unreinforced masonry bearing wall buildings in Risk Category III when assigned to Seismic Design Category A or B shall be allowed to be strengthened to meet the requirements of Appendix Chapter A1 of this code [Guidelines for the Seismic Retrofit of Existing Buildings (GSREB)].

3409.10.2.2 Access to Risk Category IV. Where a change of occupancy is such that compliance with Section 3409.10.2.1 is required and the building is assigned to Risk Category IV, the operational access to the building shall not be through an adjacent structure, unless that structure conforms to the requirements for Risk Category IV structures. Where operational access is less than 10 feet (3048 mm) from either an interior lot line or from another structure, access protection from potential falling debris shall be provided by the owner of the Risk Category IV structure.

(SECTION 1008 ELECTRICAL)

3409.11 Electrical. Buildings undergoing a change occupancy shall comply with this Section.

3409.11.1 Special occupancies. Where the occupancy of an existing building or part of an existing building is changed to one of the following special occupancies as described in NFPA 70, the electrical wiring and equipment of the building or portion thereof that contains the proposed occupancy shall comply with the applicable requirements of NFPA 70 whether or not a change of occupancy group is involved:

1. Hazardous locations.
2. Commercial garages, repair, and storage.
3. Aircraft hangars.
4. Gasoline dispensing and service stations.

5. Bulk storage plants.
6. Spray application, dipping, and coating processes.
7. Health care facilities.
8. Places of assembly.
9. Theaters, audience areas of motion picture and television studios, and similar locations.
10. Motion picture and television studios and similar locations.
11. Motion picture projectors.
12. Agricultural buildings.

3409.11.2 Unsafe conditions. Where the occupancy of an existing building or part of an existing building is changed, all unsafe conditions shall be corrected without requiring that all parts of the electrical system comply with NFPA 70.

3409.11.3 Service upgrade. Where the occupancy of an existing building or part of an existing building is changed, electrical service shall be upgraded to meet the requirements of NFPA 70 for the new occupancy.

3409.11.4 Number of electrical outlets. Where the occupancy of an existing building or part of an existing building is changed, the number of electrical outlets shall comply with NFPA 70 for the new occupancy.

(SECTION 1009 MECHANICAL)

3409.12 Mechanical requirements. Where the occupancy of an existing building or part of an existing building is changed such that the new occupancy is subject to different kitchen exhaust requirements or to increased mechanical ventilation requirements in accordance with the International Mechanical Code, the new occupancy shall comply with the intent of the respective International Mechanical Code provisions.

(SECTION 1010 PLUMBING)

3409.13. Plumbing. Buildings undergoing a change of occupancy shall comply with plumbing requirements of this section.

3409.13.1 Increased demand. Where the occupancy of an existing building or part of an existing building is changed such that the new occupancy is subject to increased or different plumbing fixture requirements or to increased water supply requirements in accordance with the International Plumbing Code, the new occupancy shall comply with the intent of the respective International Plumbing Code provisions.

3409.13.2 Food-handling occupancies. If the new occupancy is a food-handling establishment, all existing sanitary waste lines above the food or drink preparation or storage areas shall be panned or otherwise protected to prevent leaking pipes or condensation on pipes from contaminating food or drink. New drainage lines shall not be installed above such areas and shall be protected in accordance with the International Plumbing Code.

3409.13.3 Interceptor required. If the new occupancy will produce grease or oil-laden wastes, interceptors shall be provided as required in the International Plumbing Code.

3409.13.4 Chemical wastes. If the new occupancy will produce chemical wastes, the following shall apply:

1. If the existing piping is not compatible with the chemical waste, the waste shall be neutralized prior to entering the drainage system, or the piping shall be changed to a compatible material.
2. No chemical waste shall discharge to a public sewer system without the approval of the sewage authority.

3409.13.5 Group I-2. If the occupancy group is changed to Group I-2, the plumbing system shall comply with the applicable requirements of the International Plumbing Code.

(SECTION 1011 OTHER REQUIREMENTS)

3409.14 Light and ventilation. Light and ventilation shall comply with the requirements of the International Building Code for the new occupancy.

(SECTION 1012 CHANGE OF OCCUPANCY CLASSIFICATION)

3409.15 Change of occupancy classification. Buildings undergoing a change of occupancy classification shall comply with this section.

3409.15.1 General. The provisions of this section shall apply to buildings or portions thereof undergoing a change of occupancy classification. This includes a change of occupancy classification within a group as well as a change of occupancy classification from one group to a different group. Such buildings shall also comply with Sections 3409.5 through 3409.14. The application of requirements for the change of occupancy shall be as set forth in Sections 3409.15.1.1 through 3409.15.1.4. A change of occupancy, as defined in Section 202, without a corresponding change of occupancy classification shall comply with Section 3409.2.

3409.15.1.1 Compliance with Section 3408. The requirements of Section 3405.1 shall be applicable throughout the building for the new occupancy classification based on the separation conditions set forth in Sections 3409.15.1.1.1 and 3409.15.1.1.2.

3409.15.1.1.1 Change of occupancy classification without separation. Where a portion of an existing building is changed to a new occupancy classification and that portion is not separated from the remainder of the building with fire barriers having a fire-resistance rating as required in the International Building Code for the separate occupancy, the entire building shall comply with all of the requirements of Section 3408 applied throughout the building for the most restrictive occupancy classification in the building and with the requirements of this chapter.

3409.15.1.1.2 Change of occupancy classification with separation. Where a portion of an existing building that is changed to a new occupancy classification and that portion is separated from the remainder of the building with fire barriers having a fire-resistance rating as required in the International Building Code for the separate occupancy, that portion shall comply with all of the requirements of Section 3408 for the new occupancy classification and with the requirements of this chapter.

3409.15.1.2 Fire protection and interior finish. The provisions of Sections 3409.15.2 and 3409.15.3 for fire protection and interior finish, respectively, shall apply to all buildings undergoing a change of occupancy classification.

3409.15.1.3 Change of occupancy classification based on hazard category. The relative degree of hazard between different occupancy classifications shall be determined in accordance with the categories specified in Tables 3409.15.4, 3409.15.5 and 3415.6. Such a determination shall be the basis for the application of Sections 3409.15.4 through 3409.15.7.

3409.15.1.4 Accessibility. All buildings undergoing a change of occupancy classification shall comply with Section 3409.15.8.

3409.15.2 Fire protection systems. Fire protection systems shall be provided in accordance with Sections 3409.15.2.1 and 3409.15.2.2.

3409.15.2.1 Fire sprinkler system. Where a change in occupancy classification occurs that requires an automatic fire sprinkler system to be provided based on the new occupancy in accordance with Chapter 9, such system shall be provided throughout the area where the change of occupancy occurs.

3409.15.2.2 Fire alarm and detection system. Where a change in occupancy classification occurs that requires a fire alarm and detection system to be provided based on the new occupancy in accordance with Chapter 9, such system shall be provided throughout the area where the change of occupancy occurs. Existing alarm notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm notification appliances shall be provided throughout the area where the change of occupancy occurs and shall be automatically activated.

3409.15.3 Interior finish. In areas of the building undergoing the change of occupancy classification, the interior finish of walls and ceilings shall comply with the requirements of the International Building Code for the new occupancy classification.

3409.15.4 Means of egress, general. Hazard categories in regard to life safety and means of egress shall be in accordance with Table 3409.15.4.

**TABLE 3409.15.4 (IEBC TABLE 1012.4)
MEANS OF EGRESS HAZARD CATEGORIES**

<u>RELATIVE HAZARD</u>	<u>OCCUPANCY CLASSIFICATIONS</u>
<u>1 (Highest Hazard)</u>	<u>H</u>
<u>2</u>	<u>I-2, I-3, I-4</u>
<u>3</u>	<u>A, E, I-1, M, R-1, R-2, R-4</u>
<u>4</u>	<u>B, F-1, R-3, S-1</u>
<u>5 (Lowest Hazard)</u>	<u>F-2, S-2, U</u>

3409.15.4.1 Means of egress for change to higher hazard category. When a change of occupancy classification is made to a higher hazard category (lower number) as shown in Table 3409.15.4, the means of egress shall comply with the requirements of Chapter 10..

Exceptions:

1. Stairways shall be enclosed in compliance with the applicable provisions of Section 3408.4.1.
2. Existing stairways including handrails and guards complying with the requirements of Section 3408 shall be permitted for continued use subject to approval of the code official.
3. Any stairway replacing an existing stairway within a space where the pitch or slope cannot be reduced because of existing construction shall not be required to comply with the maximum riser height and minimum tread depth requirements.
4. Existing corridor walls constructed on both sides of wood lath and plaster in good condition or 1/2-inch-thick (12.7 mm) gypsum wallboard shall be permitted. Such walls shall either terminate at the underside of a ceiling of equivalent construction or extend to the underside of the floor or roof next above.
5. Existing corridor doorways, transoms and other corridor openings shall comply with the requirements in Sections 3407.5.5.1, 3407.5.5.2 and 3407.5.5.3, .
6. Existing dead-end corridors shall comply with the requirements in Section 3407.5.6.
7. An existing operable window with clear opening area no less than 4 square feet (0.38 m²) and minimum opening height and width of 22 inches (559 mm) and 20 inches (508 mm), respectively, shall be accepted as an emergency escape and rescue opening.

3409.15.4.2 Means of egress for change of use to equal or lower hazard category. When a change of occupancy classification is made to an equal or lesser hazard category (higher number) as shown in Table 3409.15.4, existing elements of the means of egress shall comply with the requirements of Section 3407.15.4 for the new occupancy classification. Newly constructed or configured means of egress shall comply with the requirements of Chapter 10.

Exception: Any stairway replacing an existing stairway within a space where the pitch or slope cannot be reduced because of existing construction shall not be required to comply with the maximum riser height and minimum tread depth requirements.

3409.15.4.3 Egress capacity. Egress capacity shall meet or exceed the occupant load as specified in Chapter 10 for the new occupancy.

3409.15.4.4 Handrails. Existing stairways shall comply with the handrail requirements of Section 3407.5.9 in the area of the change of occupancy classification.

3409.15.4.5 Guards. Existing guards shall comply with the requirements in Section 3407.5.10 in the area of the change of occupancy classification.

3409.15.5 Heights and areas. Hazard categories in regard to height and area shall be in accordance with Table 3409.15.5.

**TABLE 3409.15.5 (IEBC TABLE 1012.5)
HEIGHTS AND AREAS HAZARD CATEGORIES**

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	A-1, A-2, A-3, A-4, I, R-1, R-2, R-4
3	E, F-1, S-1, M
4 (Lowest Hazard)	B, F-2, S-2, A-5, R-3, U

3409.15.5.1 Height and area for change to higher hazard category. When a change of occupancy classification is made to a higher hazard category as shown in Table 3409.15.5, heights and areas of buildings and structures shall comply with the requirements of Chapter 5 for the new occupancy classification.

Exception: In other than Groups H, F-1 and S-1, in lieu of fire walls, use of fire barriers having a fire-resistance rating of not less than that specified in Table 706.4, constructed in accordance with Section 707, shall be permitted to meet area limitations required for the new occupancy in buildings protected throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

3409.15.5.1.1 Fire wall alternative. In other than Groups H, F-1 and S-1, fire barriers and horizontal assemblies constructed in accordance with Sections 707 and 711, respectively, shall be permitted to be used in lieu of fire walls to subdivide the building into separate buildings for the purpose of complying with the area limitations required for the new occupancy where all of the following conditions are met:

1. The buildings are protected throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
2. The maximum allowable area between fire barriers, horizontal assemblies, or any combination thereof shall not exceed the maximum allowable area determined in accordance with Chapter 5 without an increase allowed for an automatic sprinkler system in accordance with Section 506.
3. The fire-resistance rating of the fire barriers and horizontal assemblies shall not be less than that specified for fire walls in Table 706.4.

Exception: Where horizontal assemblies are used to limit the maximum allowable area, the required fire resistance rating of the horizontal assemblies shall be permitted to be reduced by 1 hour provided

the height and number of stories increases allowed for an automatic sprinkler system by Section 504.2 are not used for the buildings.

3409.15.5.2 Height and area for change to equal or lesser hazard category. When a change of occupancy classification is made to an equal or lesser hazard category as shown in Table 3409.15.5, the height and area of the existing building shall be deemed acceptable.

3409.15.5.3 Fire barriers. When a change of occupancy classification is made to a higher hazard category as shown in Table 3409.15.5, fire barriers in separated mixed use buildings shall comply with the fire-resistance requirements of the International Building Code.

Exception: Where the fire barriers are required to have a 1-hour fire-resistance rating, existing wood lath and plaster in good condition or existing 1/2-inch-thick (12.7 mm) gypsum wallboard shall be permitted.

3409.15.6 Exterior wall fire-resistance ratings. Hazard categories in regard to fire-resistance ratings of exterior walls shall be in accordance with Table 3409.15.6.

**TABLE 3409.15.6 (IEBC TABLE 1012.6)
EXPOSURE OF EXTERIOR WALLS HAZARD CATEGORIES**

<u>RELATIVE HAZARD</u>	<u>OCCUPANCY CLASSIFICATIONS</u>
1 (Highest Hazard)	H
2	F-1, M, S-1
3	A, B, E, I, R
4 (Lowest Hazard)	F-2, S-2, U

3409.15.6.1 Exterior wall rating for change of occupancy classification to a higher hazard category. When a change of occupancy classification is made to a higher hazard category as shown in Table 3409.15.6, exterior walls shall have fire resistance and exterior opening protectives as required by the International Building Code.

Exception: A 2-hour fire-resistance rating shall be allowed where the building does not exceed three stories in height and is classified as one of the following groups: A-2 and A-3 with an occupant load of less than 300, B, F, M or S.

3409.15.6.2 Exterior wall rating for change of occupancy classification to an equal or lesser hazard category. When a change of occupancy classification is made to an equal or lesser hazard category as shown in Table 3409.15.6, existing exterior walls, including openings, shall be accepted.

3409.15.6.3 Opening protectives. Openings in exterior walls shall be protected as required by the International Building Code. Where openings in the exterior walls are required to be protected because of their distance from the lot line, the sum of the area of such openings shall not exceed 50 percent of the total area of the wall in each story.

Exceptions:

1. Where the International Building Code permits openings in excess of 50 percent.
2. Protected openings shall not be required in buildings of Group R occupancy that do not exceed three stories in height and that are located not less than 3 feet (914 mm) from the lot line.
3. Where exterior opening protectives are required, an automatic sprinkler system throughout may be substituted for opening protection.
4. Exterior opening protectives are not required when the change of occupancy group is to an equal or lower hazard classification in accordance with Table 3409.15.6.

3409.15.7 Enclosure of vertical shafts. Enclosure of vertical shafts shall be in accordance with Sections 3409.15.7.1 through 3409.15.7.4.

3409.15.7.1 Minimum requirements. Vertical shafts shall be designed to meet the International Building Code requirements for atriums or the requirements of this section.

3409.15.7.2 Stairways. When a change of occupancy classification is made to a higher hazard category as shown in Table 3409.15.4, interior stairways shall be enclosed as required by the International Building Code.

Exceptions:

1. In other than Group I occupancies, an enclosure shall not be required for openings serving only one adjacent floor and that are not connected with corridors or stairways serving other floors.
2. Unenclosed existing stairways need not be enclosed in a continuous vertical shaft if each story is separated from other stories by 1-hour fire-resistance-rated construction or approved wired glass set in steel frames and all exit corridors are sprinklered. The openings between the corridor and the occupant space shall have at least one sprinkler head above the openings on the tenant side. The sprinkler system shall be permitted to be supplied from the domestic watersupply systems, provided the system is of adequate pressure, capacity, and sizing for the combined domestic and sprinkler requirements.
3. Existing penetrations of stairway enclosures shall be accepted if they are protected in accordance with Chapter 7.

3409.15.7.3 Other vertical shafts. Interior vertical shafts other than stairways, including but not limited to elevator hoistways and service and utility shafts, shall be enclosed as required by the International Building Code when there is a change of use to a higher hazard category as specified in Table 3409.15.4.

Exceptions:

1. Existing 1-hour interior shaft enclosures shall be accepted where a higher rating is required.
2. Vertical openings, other than stairways, in buildings of other than Group I occupancy and connecting less than six stories shall not be required to be enclosed if the entire building is provided with an approved automatic sprinkler system.

3409.15.7.4 Openings. All openings into existing vertical shaft enclosures shall be protected by fire assemblies having a fire protection rating of not less than 1 hour and shall be maintained self-closing or shall be automatic-closing by actuation of a smoke detector. All other openings shall be fire protected in an approved manner. Existing fusible link-type automatic door-closing devices shall be permitted in all shafts except stairways if the fusible link rating does not exceed 135°F (57°C).

3409.15.8 Accessibility. Existing buildings that undergo a change of group or occupancy classification shall comply with this section.

Exception: Type B dwelling or sleeping units required by Section 1107 are not required to be provided in existing buildings and facilities undergoing a change of occupancy in conjunction with less than a Level 3 alteration.

3409.15.8.1 Partial change in occupancy. Where a portion of the building is changed to a new occupancy classification, any alteration shall comply with Sections 3406.1.2, 3407.6 and 3408.7, as applicable.

3409.15.8.2 Complete change of occupancy. Where an entire building undergoes a change of occupancy, it shall comply with Section 3409.15.8.1 and shall have all of the following accessible features:

1. At least one accessible building entrance.
2. At least one accessible route from an accessible building entrance to primary function areas.
3. Signage complying with Section 1110.
4. Accessible parking, where parking is provided.
5. At least one accessible passenger loading zone, where loading zones are provided.
6. At least one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.

Where it is technically infeasible to comply with the new construction standards for any of these requirements for a change of group or occupancy, the above items shall conform to the requirements to the maximum extent technically feasible.

Exception: The accessible features listed in Items 1 through 6 are not required for an accessible route to Type B units.

*(CHAPTER 11 ADDITIONS
SECTION 1101 GENERAL)*

SECTION 3410 ADDITIONS

3410.1 Scope. An addition to a building or structure shall comply with the International Codes as adopted for new construction without requiring the existing building or structure to comply with any requirements of those codes or of these provisions, except as required by this chapter. Where an addition impacts the existing building or structure, that portion shall comply with this code.

3410.2 Creation or extension of nonconformity. An addition shall not create or extend any nonconformity in the existing building to which the addition is being made with regard to accessibility, structural strength, fire safety, means of egress, or the capacity of mechanical, plumbing, or electrical systems.

3410.3 Other work. Any repair or alteration work within an existing building to which an addition is being made shall comply with the applicable requirements for the work as classified.

(SECTION 1102 HEIGHTS AND AREAS)

3410.4 Height and areas. Heights and areas in buildings undergoing an addition shall be in accordance with Section 3410.4.1 through 3410.4.3.

3410.4.1 Height limitations. No addition shall increase the height of an existing building beyond that permitted under the applicable provisions of Chapter 5 for new buildings.

3410.4.2 Area limitations. No addition shall increase the area of an existing building beyond that permitted under the applicable provisions of Chapter 5 for new buildings unless fire separation as required by the International Building Code is provided.

Exception: In-filling of floor openings and nonoccupiable appendages such as elevator and exit stair shafts shall be permitted beyond that permitted by this code for new construction.

3410.4.3 Fire protection systems. Existing fire areas increased by the addition shall comply with Chapter 9.

(SECTION 1103 STRUCTURAL)

3410.5 Structural. Structural requirements for additions shall comply with Sections 3410.5.1 through 3410.5.5.

3410.5.1 Compliance with the International Building Code. Additions to existing buildings or structures are new construction and shall comply with the International Building Code.

3410.5.2 Additional gravity loads. Existing structural elements supporting any additional gravity loads as a result of additions shall comply with the International Building Code.

Exceptions:

1. Structural elements whose stress is not increased by more than 5 percent.
2. Buildings of Group R occupancy with no more than five dwelling units or sleeping units used solely for residential purposes where the existing building and the addition comply with the conventional light- frame construction methods of the International Building Code or the provisions of the International Residential Code.

3405.3 Lateral force-resisting system. The lateral force-resisting system of existing buildings to which additions are made shall comply with Sections 3410.5.3.1, 3410.5.3.2 and 3410.5.3.3.

Exceptions:

1. Buildings of Group R occupancy with no more than five dwelling or sleeping units used solely for residential purposes where the existing building and the addition comply with the conventional light-frame construction methods of the International Building Code or the provisions of the International Residential Code.
2. In other existing buildings where the lateral-force story shear in any story is not increased by more than 10 percent cumulative.

3410.5.3.1 Vertical addition. Any element of the lateral force-resisting system of an existing building subjected to an increase in vertical or lateral loads from the vertical addition shall comply with the International Building Code wind provisions and the IBC-level seismic forces specified in Section 301.1.4.1 of this code.

3410.5.3.2 Horizontal addition. Where horizontal additions are structurally connected to an existing structure, all lateral force-resisting elements of the existing structure affected by such addition shall comply with the International Building Code wind provisions and the IBC-level seismic forces specified in Section 301.1.4.1 of this code.

3410.5.3.3 Voluntary addition of structural elements to improve the lateral force-resisting system. Voluntary addition of structural elements to improve the lateral force-resisting system of an existing building shall comply with Section 3407.7.5.

3410.5.4 Snow drift loads. Any structural element of an existing building subjected to additional loads from the effects of snow drift as a result of an addition shall comply Chapter 16.

Exceptions:

1. Structural elements whose stress is not increased by more than 5 percent.
2. Buildings of Group R occupancy with no more than five dwelling units or sleeping units used solely for residential purposes where the existing building and the addition comply with the conventional light- frame construction methods of Section 2308 or the provisions of the International Residential Code.

3410.5.5 Flood hazard areas. Additions and foundations in flood hazard areas shall comply with the following requirements:

1. For horizontal additions that are structurally interconnected to the existing building:
 - 1.1. If the addition and all other proposed work, when combined, constitute substantial improvement, the existing building and the addition shall comply with Section 1612 of the International Building Code.
 - 1.2. If the addition constitutes substantial improvement, the existing building and the addition shall comply with Section 1612 of the International Building Code.
2. For horizontal additions that are not structurally interconnected to the existing building:
 - 2.1. The addition shall comply with Section 1612 of the International Building Code.
 - 2.2. If the addition and all other proposed work, when combined, constitute substantial improvement, the existing building and the addition shall comply with Section 1612 of the International Building Code.
3. For vertical additions and all other proposed work that, when combined, constitute substantial improvement, the existing building shall comply with Section 1612 of the International Building Code.
4. For a new, replacement, raised, or extended foundation, if the foundation work and all other proposed work, when combined, constitute substantial improvement, the existing building shall comply with Section 1612 of the International Building Code.

(SECTION 1104 SMOKE ALARMS IN OCCUPANCY GROUPS R AND I-1)

3410.6 Smoke alarms in existing portions of a building. Where an addition is made to a building or structure of a Group R or I-1 occupancy, the existing building shall be provided with smoke alarms as required by Section 1103.8 of the International Fire Code or Section R314 of the International Residential Code as applicable.

(SECTION 1105 ACCESSIBILITY)

3410.7 Accessibility. Accessibility provisions for new construction shall apply to additions. An addition that affects the accessibility to, or contains an area of, primary function shall comply with the requirements of Sections 3406.1.2, 3407.6 and 3408.7, as applicable.

(SECTION 1106 ENERGY CONSERVATION)

3410.8 Energy conservation. Additions to existing buildings shall conform to the energy requirements of the International Energy Conservation Code or International Residential Code as they relate to new construction.

*(CHAPTER 12 HISTORIC BUILDINGS
SECTION 1201 GENERAL)*

SECTION 3411 HISTORIC BUILDINGS

3411.1 Scope. It is the intent of this chapter to provide means for the preservation of historic buildings. Historical buildings shall comply with the provisions of this chapter relating to their repair, alteration, relocation and change of occupancy.

3411.2 Report. A historic building undergoing repair, alteration, or change of occupancy shall be investigated and evaluated. If it is intended that the building meet the requirements of this chapter, a written report shall be prepared and filed with the code official by a registered design professional when such a report is necessary in the opinion of the code official. Such report shall be in accordance with Chapter 1 and shall identify each required safety feature that is in compliance with this chapter and where compliance with other chapters of these provisions would be damaging to the contributing historic features. For buildings assigned to Seismic Design Category D, E or F, a structural evaluation describing, at a minimum, the vertical and horizontal elements of the lateral force-resisting system and any strengths

or weaknesses therein shall be prepared. Additionally, the report shall describe each feature that is not in compliance with these provisions and shall demonstrate how the intent of these provisions is complied with in providing an equivalent level of safety.

3411.3 Special occupancy exceptions—museums. When a building in Group R-3 is also used for Group A, B, or M purposes such as museum tours, exhibits, and other public assembly activities, or for museums less than 3,000 square feet (279 m²), the code official may determine that the occupancy is Group B when life-safety conditions can be demonstrated in accordance with Section 3411.2. Adequate means of egress in such buildings, which may include a means of maintaining doors in an open position to permit egress, a limit on building occupancy to an occupant load permitted by the means of egress capacity, a limit on occupancy of certain areas or floors, or supervision by a person knowledgeable in the emergency exiting procedures, shall be provided.

3411.4 Flood hazard areas. In flood hazard areas, if all proposed work, including repairs, work required because of a change of occupancy, and alterations, constitutes substantial improvement, then the existing building shall comply with Section 1612 of the International Building Code.

Exception: If an historic building will continue to be an historic building after the proposed work is completed, then the proposed work is not considered a substantial improvement. For the purposes of this exception, an historic building is:

1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places;
2. Determined by the Secretary of the U.S. Department of Interior to contribute to the historical significance of a registered historic district or a district preliminarily determined to qualify as a historic district; or
3. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.

(SECTION 1202 REPAIRS)

3411.5 Repairs. Repairs to historic buildings shall be in accordance with Sections 3411.5.1 through 3411.5.4.

3411.5.1 General. Repairs to any portion of an historic building or structure shall be permitted with original or like materials and original methods of construction, subject to the provisions of this chapter. Hazardous materials, such as asbestos and lead-based paint, shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

3411.5.2 Unsafe conditions. Conditions determined by the code official to be unsafe shall be remedied. No work shall be required beyond what is required to remedy the unsafe conditions.

3411.5.3 Relocated buildings. Foundations of relocated historic buildings and structures shall comply with the International Building Code. Relocated historic buildings shall otherwise be considered an historic building for the purposes of this code. Relocated historic buildings and structures shall be sited so that exterior wall and opening requirements comply with the International Building Code or with the compliance alternatives of this code.

3411.5.4 Replacement. Replacement of existing or missing features using original materials shall be permitted. Partial replacement for repairs that match the original in configuration, height, and size shall be permitted.

Replacement glazing in hazardous locations shall comply with the safety glazing requirements of Chapter 24.

Exception: Glass block walls, louvered windows, and jalousies repaired with like materials.

(SECTION 1203 FIRE SAFETY)

3411.6 Scope. Historic buildings undergoing alterations, changes of occupancy, or that are moved shall comply with this section.

3411.6.2 General. Every historic building that does not conform to the construction requirements specified in this code for the occupancy or use and that constitutes a distinct fire hazard as defined herein shall be provided with an approved automatic fire-extinguishing system as determined appropriate by the code official. However, an automatic fire-extinguishing system shall not be used to substitute for, or act as an alternative to, the required number of exits from any facility.

3411.6.3 Means of egress. Existing door openings and corridor and stairway widths less than those specified elsewhere in this code may be approved, provided that, in the opinion of the code official, there is sufficient width and height for a person to pass through the opening or traverse the means of egress. When approved by the code official, the front or main exit doors need not swing in the direction of the path of exit travel, provided that other approved means of egress having sufficient capacity to serve the total occupant load are provided.

3411.6.4 Transoms. In fully sprinklered buildings of Group R-1, R-2 or R-3 occupancy, existing transoms in corridors and other fire-resistance-rated walls may be maintained if fixed in the closed position. A sprinkler shall be installed on each side of the transom.

3411.6.5 Interior finishes. The existing finishes of walls and ceilings shall be accepted when it is demonstrated that they are the historic finishes.

3411.6.6 Stairway enclosure. In buildings of three stories or less, exit enclosure construction shall limit the spread of smoke by the use of tight-fitting doors and solid elements. Such elements are not required to have a fire-resistance rating.

3411.6.7 One-hour fire-resistant assemblies. Where 1-hour fire-resistance-rated construction is required by these provisions, it need not be provided, regardless of construction or occupancy, where the existing wall and ceiling finish is wood or metal lath and plaster.

3411.6.8 Glazing in fire-resistance-rated systems. Historic glazing materials are permitted in interior walls required to have a 1-hour fire-resistance rating where the opening is provided with approved smoke seals and the area affected is provided with an automatic sprinkler system.

3411.6.9 Stairway railings. Grand stairways shall be accepted without complying with the handrail and guard requirements. Existing handrails and guards at all stairs shall be permitted to remain, provided they are not structurally dangerous.

3411.6.10 Guards. Guards shall comply with Sections 3411.6.10.1 and 3411.6.10.2.

3411.6.10.1 Height. Existing guards shall comply with the requirements of Section 3405.1.

3411.6.10.2 Guard openings. The spacing between existing intermediate railings or openings in existing ornamental patterns shall be accepted. Missing elements or members of a guard may be replaced in a manner that will preserve the historic appearance of the building or structure.

3411.6.11 Exit signs. Where exit sign or egress path marking location would damage the historic character of the building, alternative exit signs are permitted with approval of the code official. Alternative signs shall identify the exits and egress path.

3411.6.12 Automatic fire-extinguishing systems. Every historical building that cannot be made to conform to the construction requirements specified in the International Building Code for the occupancy or

use and that constitutes a distinct fire hazard shall be deemed to be in compliance if provided with an approved automatic fire-extinguishing system.

Exception: When the code official approves an alternative life-safety system.

(SECTION 1204 ALTERATIONS)

3411.7 Alterations. Alterations to historic buildings shall be in accordance with this section.

3411.7.1 Accessibility requirements. The provisions of Sections 3406.1.2, 3407.6 and 3408.7, as applicable, shall apply to facilities designated as historic structures that undergo alterations, unless technically infeasible. Where compliance with the requirements for accessible routes, entrances or toilet rooms would threaten or destroy the historic significance of the building or facility, as determined by the code official, the alternative requirements of Sections 3411.7.1.1 through 3411.7.1.4 for that element shall be permitted.

Exception: Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in historical buildings.

3411.7.1.1 Site arrival points. At least one main entrance shall be accessible.

3411.7.1.2 Multilevel buildings and facilities. An accessible route from an accessible entrance to public spaces on the level of the accessible entrance shall be provided.

3411.7.1.3 Entrances. At least one main entrance shall be accessible.

Exceptions:

1. If a main entrance cannot be made accessible, an accessible nonpublic entrance that is unlocked while the building is occupied shall be provided; or
2. If a main entrance cannot be made accessible, a locked accessible entrance with a notification system or remote monitoring shall be provided.

3411.7.1.4 Toilet and bathing facilities. Where toilet rooms are provided, at least one accessible family or assisted-use toilet room complying with Section 1109.2.1 shall be provided.

(SECTION 1205 CHANGE OF OCCUPANCY)

3411.8 Change of Occupancy. Historic buildings undergoing a change of occupancy shall be in accordance with this Sections 3411.8.1 through 3411.8.15.

3411.8.1 General. Historic buildings undergoing a change of occupancy shall comply with the applicable provisions of Section 3409, except as specifically permitted in this chapter. When Section 3409 requires compliance with specific requirements of Sections 3406, 3407 or 3408 and when those requirements are subject to the exceptions in Section 3410.4, the same exceptions shall apply to this section.

3411.8.2 Building area. The allowable floor area for historic buildings undergoing a change of occupancy shall be permitted to exceed by 20 percent the allowable areas specified in Chapter 5.

3411.8.3 Location on property. Historic structures undergoing a change of use to a higher hazard category in accordance with Section 3409.15.6 may use alternative methods to comply with the fire-resistance and exterior opening protective requirements. Such alternatives shall comply with Section 3411.2.

3411.8.4 Occupancy separation. Required occupancy separations of 1 hour may be omitted when the building is provided with an approved automatic sprinkler system throughout.

3411.8.5 Roof covering. Regardless of occupancy or use group, roof-covering materials not less than Class C shall be permitted where a fire-retardant roof covering is required.

3411.8.6 Means of egress. Existing door openings and corridor and stairway widths less than those that would be acceptable for nonhistoric buildings under these provisions shall be approved, provided that, in the opinion of the code official, there is sufficient width and height for a person to pass through the opening or traverse the exit and that the capacity of the exit system is adequate for the occupant load, or where other operational controls to limit occupancy are approved by the code official.

3411.8.7 Door swing. When approved by the code official, existing front doors need not swing in the direction of exit travel, provided that other approved exits having sufficient capacity to serve the total occupant load are provided.

3411.8.8 Transoms. In corridor walls required by these provisions to be fire-resistance rated, existing transoms may be maintained if fixed in the closed position, and fixed wired glass set in a steel frame or other approved glazing shall be installed on one side of the transom.

Exception: Transoms conforming to Section 3411.6.4 shall be accepted.

3411.8.9 Finishes. Where interior finish materials are required to have a flame spread index of Class C or better, existing nonconforming materials shall be surfaced with approved fire-retardant paint or finish.

Exception: Existing nonconforming materials need not be surfaced with an approved fire-retardant paint or finish where the building is equipped throughout with an automatic sprinkler system installed in accordance with the International Building Code and the nonconforming materials can be substantiated as being historic in character.

3411.8.10 One-hour fire-resistant assemblies. Where 1-hour fire-resistance-rated construction is required by these provisions, it need not be provided, regardless of construction or occupancy, where the existing wall and ceiling finish is wood lath and plaster.

3411.8.11 Stairs and railings. Existing stairways shall comply with the requirements of these provisions. The code official shall grant alternatives for stairways and railings if alternative stairways are found to be acceptable or are judged to meet the intent of these provisions. Existing stairways shall comply with Section 3411.6.

Exception: For buildings less than 3,000 square feet (279 m²), existing conditions are permitted to remain at all stairs and rails.

3411.8.12 Exit signs. The code official may accept alternative exit sign locations where such signs would damage the historic character of the building or structure. Such signs shall identify the exits and exit path.

3411.8.13 Exit stair live load. Existing historic stairways in buildings changed to a Group R-1 or R-2 occupancy shall be accepted where it can be shown that the stairway can support a 75-pounds-per-square-foot (366 kg/m²) live load.

3411.8.14 Natural light. When it is determined by the code official that compliance with the natural light requirements of Section 3409.14 will lead to loss of historic character or historic materials in the building, the existing level of natural lighting shall be considered acceptable.

3411.8.15 Accessibility requirements. The provisions of Section 3409.15.8 shall apply to facilities designated as historic structures that undergo a change of occupancy, unless technically infeasible. Where compliance with the requirements for accessible routes, ramps, entrances, or toilet rooms would threaten or destroy the historic significance of the building or facility, as determined by the authority

having jurisdiction, the alternative requirements of Sections 3411.7.1.1 through 3411.7.1.4 for those elements shall be permitted.

Exception: Type B dwelling or sleeping units required by Section 1107.

(SECTION 1206 STRUCTURAL)

3411.9 Historic. Historic buildings shall comply with the requirements for repairs, Level 1, 2 or 3 alterations or additions as applicable.

Exception: The code official shall be authorized to accept existing floors and approve operational controls that limit the live load on any such floor.

3411.9.2 Dangerous conditions. Conditions determined by the code official to be dangerous shall be remedied. No work shall be required beyond what is required to remedy the dangerous condition.

*(CHAPTER 13 RELOCATED OR MOVED BUILDINGS
SECTION 1301 GENERAL)*

SECTION 3412 RELOCATED OR MOVED BUILDINGS

3412.1 Scope. This section provides requirements for relocated or moved structures.

3412.1.1 Conformance. The building shall be safe for human occupancy as determined by the International Fire Code and the International Property Maintenance Code. Any repair, alteration, or change of occupancy undertaken within the moved structure shall comply with the requirements of this code applicable to the work being performed. Any field-fabricated elements shall comply with the requirements of the International Building Code or the International Residential Code as applicable.

(SECTION 1302 REQUIREMENTS)

3412.1.2 Location on the lot. The building shall be located on the lot in accordance with the requirements of this code or the International Residential Code as applicable.

3412.1.3 Foundation. The foundation system of relocated buildings shall comply with this code or the International Residential Code as applicable.

3412.1.3.1 Connection to the foundation. The connection of the relocated building to the foundation shall comply with this code or the International Residential Code as applicable.

3412.1.4 Wind loads. Buildings shall comply with this code or International Residential Code wind provisions as applicable.

Exceptions:

1. Detached one- and two-family dwellings and Group U occupancies where wind loads at the new location are not higher than those at the previous location.
2. Structural elements whose stress is not increased by more than 10 percent.

3412.1.5 Seismic loads. Buildings shall comply with this code or International Residential Code seismic provisions at the new location as applicable.

Exceptions:

1. Structures in Seismic Design Categories A and B and detached one- and two-family dwellings in Seismic Design Categories A, B and C where the seismic loads at the new location are not higher than those at the previous location.
2. Structural elements whose stress is not increased by more than 10 percent.

3412.1.6 Snow loads. Structures shall comply with this code or International Residential Code snow loads as applicable where snow loads at the new location are higher than those at the previous location.

Exception: Structural elements whose stress is not increased by more than 5 percent.

3412.1.7 Flood hazard areas. If relocated or moved into a flood hazard area, structures shall comply with Section 1612.

3412.1.8 Required inspection and repairs. The code official shall be authorized to inspect, or to require approved professionals to inspect at the expense of the owner, the various structural parts of a relocated building to verify that structural components and connections have not sustained structural damage. Any repairs required by the code official as a result of such inspection shall be made prior to the final approval.

Reasons: The AIA Codes and Standards Committee has become increasingly concerned that the sheer volume of codes have become unwieldy, leaving users of the code (designers and code officials) in the precarious position of not being able to embrace all the criteria that a single jurisdiction may choose to enforce. One of the obvious ways that the codes can be streamlined is to eliminate duplicative elements of the codes. The IBC now includes Chapter 34 for existing buildings and the IEBC is dedicated completely to existing buildings. While there is a great deal of duplication in these documents, they are not 100% the same.

Complicating the problem are jurisdictions that adopt both the IBC and the IEBC and do not provide any additional direction as to how the two documents are to be used. Lack of consistency is created among jurisdictions when one neighboring jurisdiction adopts one of the codes, but their neighbor adopts another. If the ICC intends to have provisions that are equally applicable, they can most easily be incorporated into the building code and applied consistently as part of that code.

(202 items) All these definitions are found in the IEBC but are not found in the IBC even though buildings that are designed and constructed per the IBC are subject to the IEBC once completed. Common terminology and meaning should be applied through both codes.

(3401.1.2) The intent in the IEBC Section 101.3 is not the same as the intent of the IBC and should be restated here.

(3401.3) The requirements in Section 104.10.1 in the IEBC are more comprehensively applied to repair and alterations and are moved here for consistency.

(3401.5) Requirements for flood hazard areas appear in three sections (3403.2, 3404.2 and 3405.2) in Chapter 34 establishing the exact same provisions for flood hazard but applying them to additions, alterations and repairs. The IEBC has a completely different approach to the same subject in Section 104.10.1. They are all placed in one section here to provide a concise and consistent set of requirements for flood protection in existing buildings.

(3401.6) By moving the provisions from the IEBC into the IBC this isn't necessary.

(3401.6 (NEW)) Structural requirements in the IBC and IEBC are being made the same.

(3401.7.1 (NEW)) The provisions in Chapter 34 and the IEBC for accessibility use of fire escapes and replacement glass have been moved to the general section of the Chapter so that these requirements will apply to all buildings using any compliance method.

(3403.1 #1) The requirements for alterations in 3404 and Section 403 establish that the alterations must be made in compliance with the IBC and do not make the existing portions of the building any less compliant. The structural requirements are redundant with other structural requirements and are consolidated into Section 3401.4.5 and flood criteria are in Section 3401.5.

(3403.1 #2) In the IBC, Section 3403.1 requires the addition and any alterations needed to make the existing structure "no less conforming." This section also requires the addition to meet the code making any elements that are part of the code for new construction applicable; the accessibility and energy conservation requirements in the IEBC are redundant.

(3403.2) This section is moved to 3401.5 and combined with criteria from the IEBC and other sections in Chapter 34 to form a single section on flood provisions. Both the addition and the existing building are limited to compliance with Chapter 5, so the provisions for height and area in the IEBC Section 1102, are unnecessary; the structural requirements for the additions are

addressed in the new Section 3401.4.5.3, and are combined with the requirements from the IEBC. Energy conservation requirements aren't needed since Section

(3404 through 3412) Proposed change to the IBC incorporating the provisions of the IEBC.

Cost Impact: None.

G205-12

PART I – IBC GENERAL

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

PART II – IBC GENERAL

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

PART III – IBC GENERAL

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

PART IV – IBC GENERAL

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

PART V – IBC GENERAL

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

PART VI – IBC GENERAL

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

PART VII – IBC GENERAL

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

PART VIII – IBC GENERAL

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

PART IX – IBC GENERAL

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

PART X – IBC GENERAL

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

PART XI – IBC GENERAL

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

PART XII – IBC GENERAL

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

3404.1 (NEW)-G-COLLINS

G206 – 12

3401.2.1 (NEW)

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering, (al.godwin@aon.com)

Add new text as follows:

3401.2.1 Yards. Where yards are provided for compliance with any provision of this code or other referenced codes, as necessary to achieve the purpose of such codes, such yards shall be maintained clear and unobstructed in accordance with their original approval, unless permitted to be removed or reduced by this code.

Reason: Yards are a recognized part of the codes for various provisions. As such, they need to be recognized and the code official needs the authority to mandate their maintenance to insure their purpose and intent is assured.

Cost Impact: This code change proposal will not increase the cost of construction.

G206-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3401.2.1 (NEW)-G-GODWIN.doc

G207 – 12

3401.4.1, 3401.4.2 (IEBC [B] 401.2.1, 401.2.2)

Proponent: Vickie J. Lovell, InterCode Incorporated, representing International Window Film Association (vickie@InterCodeinc.com)

Revise as follows:

3401.4 (IEBC [B] 401.2) Building materials and systems. Building materials and systems shall comply with the requirements of this section.

3401.4.1 (IEBC [B] 401.2.1) Existing materials. Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the *building official* to be unsafe per Section 116. This chapter shall not be used require the removal, alteration or abandonment of, nor prevent the continued use and maintenance of an existing building or building system lawfully in existence at the time of adoption of this code.

3401.4.2 (IEBC [B] 401.2.2) New and replacement materials. Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs and alterations, provided no hazard to life, health or property is created, and energy use is not increased. Hazardous materials shall not be used where the code for new construction would not *permit* their use in buildings of similar occupancy, purpose and location.

Reason: Section 3401.3 “Compliance” in the IBC, directs the code user to go to International Energy Conservation Code, International Fire Code, International Fuel Gas Code, International Mechanical Code, International Plumbing Code, International Property Maintenance Code, International Private Sewage Disposal Code, International Residential Code and NFPA 70 for information on alterations, repairs, additions and changes of occupancy to, or relocation of, existing buildings. The problem is that sections on how to handle existing materials and building systems don’t exist in those codes.

The IBC Chapter 34 on existing buildings is also slightly deficient on how and when new and existing systems and materials are required to be replaced, and when it is necessary to do so.

In particular, the recent interest in energy conservation, the adoption of more aggressive energy policies, and the implementation of more stringent energy and green codes does not give license to require more energy savings in existing buildings than is practical.

This proposal adds excerpted generalized text from IECC C101.4 (it not intended to only apply to energy issues) that limits the application of the requirements for new materials and systems in existing buildings when building systems and materials are to be repaired, replaced, maintained or altered.

Cost Impact: This code change will not increase the cost of construction and may in fact reduce the cost of construction.

G207-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3401.4.1-G-LOVELL.doc

G208-12

3401.7(NEW) [IEBC [B] 401.4 (NEW)]

Proponent: Vickie Lovell, InterCode Incorporated representing self

Add new text as follows:

3401.7 (IEBC [B] 401.4) Energy Conservation. Level 1 Alterations, as scoped by Section 503.1 of the *International Existing Building Code*, to existing buildings or structures are permitted without requiring the entire building or structure to comply with the energy requirements of the *International Energy Conservation Code* or the *International Residential Code*. The alterations shall conform to the energy requirements of the *International Energy Conservation Code* or the *International Residential Code* only as they relate to new construction.

Exception: The following need not comply provided the energy use of the building is not increased.

1. Storm windows installed over existing fenestration.
2. Glass only replacements in an existing sash and frame.
3. Existing ceiling, wall or floor cavities exposed during construction provided that these cavities are filled with insulation.
4. Construction where the existing roof, wall or floor cavity is not exposed.
5. Reroofing for roofs where neither the sheathing nor the insulation is exposed. Roofs without insulation in the cavity and where the sheathing or insulation is exposed during reroofing shall be insulated either above or below the sheathing.
6. Replacement of existing doors that separate conditioned space from the exterior shall not require the installation of a vestibule or revolving door, provided, however, that an existing vestibule that separates a conditioned space from the exterior shall not be removed.
7. Alterations that replace less than 50 percent of the luminaires in a space, provided that such alterations do not increase the installed interior lighting power.
8. Alterations that replace only the bulb and ballast within the existing luminaires in a space provided that the alteration does not increase the installed interior lighting power.

Reason: The IECC Section C401.2.1 requires compliance with Sections C402, C403, and C405 for existing buildings that are undergoing alternations and repairs. This proposal clarifies that certain features of the existing building undergoing Level 1 alterations are exempt from the requirements of the IECC.

The scoping section is extracted from Section 707 of the IEBC.

This list of exempted items has been extracted from IECC Section C101.4.

A similar proposal will be submitted to the IEBC in the group B proposal cycle.

Without this list of exceptions, the code would require improvements or replacements to be with new materials and systems as for new construction.

Cost Impact: This code change will not increase the cost of construction and may in fact reduce the cost of construction.

G208-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3401.7#2-G-LOVELL.doc

G209 – 12

3401.7(NEW) [IEBC [B] 401.4 (NEW)]

Proponent: Vickie Lovell, InterCode Incorporated, representing the International Window Film Association

Add new text as follows:

3401.7 (IEBC [B] 401.4) Energy Conservation. Level 1 Alterations, as scoped by Section 503.1 of the *International Existing Building Code*, to existing buildings or structures are permitted without requiring the entire building or structure to comply with the energy requirements of the *International Energy Conservation Code* or the *International Residential Code*. The alterations shall conform to the energy requirements of the *International Energy Conservation Code* or the *International Residential Code* only as they relate to new construction.

Exception: The following need not comply provided the energy use of the building in not increased.

1. Storm windows installed over existing fenestration.
2. Glass only replacements in an existing sash and frame.
3. Surface applied window film on existing single pane fenestration assemblies.
4. Existing ceiling, wall or floor cavities exposed during construction provided that these cavities are filled with insulation.
5. Construction where the existing roof, wall or floor cavity is not exposed.
6. Reroofing for roofs where neither the sheathing nor the insulation is exposed. Roofs without insulation in the cavity and where the sheathing or insulation is exposed during reroofing shall be insulated either above or below the sheathing.
7. Replacement of existing doors that separate *conditioned space* from the exterior shall not require the installation of a vestibule or revolving door, provided, however, that an existing vestibule that separates a *conditioned space* from the exterior shall not be removed.
8. Alterations that replace less than 50 percent of the luminaires in a space, provided that such alterations do not increase the installed interior lighting power.
9. Alterations that replace only the bulb and ballast within the existing luminaires in a space provided that the *alteration* does not increase the installed interior lighting power.

Reason: The IECC Section C401.2.1 requires compliance with Sections C402, C403, and C405 for existing buildings that are undergoing alternations and repairs. This proposal clarifies that certain features of the existing building undergoing Level 1 alterations are exempt from the requirements of the IECC.

The scoping section is extracted from Section 707 of the IEBC.

This list of exempted items has been extracted from IECC Section C101.4.

Surface applied window film to existing fenestration has been added to the list because it can enhance the performance of existing single pane fenestration products for protection from injuries and property damage due to broken glass, reduces solar heat gain and energy use, ultraviolet transmittance and glare, and improves performance when impacted.

A similar proposal will be submitted to the IEBC in the group B proposal cycle.

Without this list of exceptions, the code would require improvements or replacements to be with new materials and systems as for new construction.

Cost Impact: This code change will not increase the cost of construction and may in fact reduce the cost of construction.

G209-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3401.7#1-G-LOVELL.doc

G210 – 12

3403.1, 3404.1, 3408.1 (IEBC [B] 402.1, 403.1, 407.1)

Proponent: Charles S. Bajnai, Chesterfield County, VA., ICC Building Code Action Committee (BCAC)

Revise as follows:

3403.1 (IEBC [B] 402.1) General. ~~Additions to any building or structure shall comply with the requirements of this code~~ the *International Building Code* for new construction. Where an addition impacts the existing building or structure, alterations to the existing building or structure shall be made to ensure that the affected portion of the existing building or structure together with the addition are no less conforming with the provisions of this code than the existing building or structure was prior to the addition. ~~complies with the International Codes as adopted for new construction.~~ An existing building together with its additions shall comply with the height and area provisions of Chapter 5 of the *International Building Code*.

3404.1 (IEBC [B] 403.1) General. Except as provided by Section 3401.4 or this section, alterations to any building or structure shall comply with the requirements of the *International Building Code* for new construction. Alterations shall be such that the existing building or structure is no less complying with the provisions of this code than the existing building or structure was prior to the alteration. All new construction elements, components, systems, and spaces shall comply with the requirements of the *International Building Code*. An alteration shall not create any nonconformity in the existing building to which the alteration is being made with regard to accessibility, structural strength, fire safety, means of egress, or the capacity of mechanical, plumbing, or electrical systems.

Exceptions:

1. An existing *stairway* shall not be required to comply with the requirements of Section 1009 where the existing space and construction does not allow a reduction in pitch or slope.
2. *Handrails* otherwise required to comply with Section 1009.15 shall not be required to comply with the requirements of Section 1012.6 regarding full extension of the *handrails* where such extensions would be hazardous due to plan configuration.

3408.1 (IEBC [B] 407.1) Conformance. No change shall be made in the use or occupancy of any building that would place the building in a different division of the same group of occupancies or in a different group of occupancies, unless such building is made to comply with the requirements of this code for such division or group of occupancies. Subject to the approval of the *building official*, the use or occupancy of existing buildings shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without conforming to all the requirements of this code for those groups, provided the new or proposed use ~~is less hazardous, based on life and fire risk, than the existing use.~~ does not create any nonconformity in the existing building to which the alteration is being made with regard to accessibility, structural strength, fire safety, means of egress, or the capacity of mechanical, plumbing, or electrical systems.

Reason: This proposal is submitted by the ICC Building Code Action Committee (BCAC). The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 3 open meetings and over 15 workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: <http://www.iccsafe.org/cs/BCAC/Pages/default.aspx>

1. This language provides much needed clarification in the application of the code for the Building Official. The language that the addition and the existing building together must be no less conforming than the existing building was prior to the addition is confusing.

For Example: A new 2000 gross square foot A2 building of Type VB construction, containing 1475 net square foot of Assembly seating space could be constructed with an occupant load of 99 in full compliance with the IBC with no sprinkler or fire alarm system. An addition could then be constructed using Section 402.1 of the IEBC to add an additional 1475 square foot of Assembly seating space adding an additional 99 persons to the occupant load. Reading Section 402.1 a sprinkler or fire alarm system would

NOT be required because the "existing building with the addition are no less conforming than the existing building was prior to the addition". The existing building did not require either system.

2. This language provides much needed clarification in the application of the code for the Building Official. The language that the alteration shall be such that the existing building is no less conforming than it was prior to the addition is confusing.

3. This language provides clarification in the application of the code for the Building Official. The language that the use is "less hazardous, based on life and fire risk, than the existing use" is confusing and can be misinterpreted. There is no guidance for the building official for less hazardous life risk or fire risk.

Cost Impact: The code change proposal will not increase the cost of construction.

G210-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3403.1-G-BAJNAI-BCAC.doc

G211 – 12

3403.4, 3404.4, 3405.2.1, 3405.2.3, 3408.4 (IEBC [B] 402.4, 403.4, 404.2.1, 404.2.3, 407.4), Chapter 35

Proponent: Jennifer Goupil, The Structural Engineering Institute of ASCE (jgoupil@asce.org)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Revise as follows:

3403.4 (IEBC [B] 402.4) Existing structural elements carrying lateral load. Where the *addition* is structurally independent of the *existing structure*, existing lateral load-carrying structural elements shall be permitted to remain unaltered. Where the *addition* is not structurally independent of the *existing structure*, the *existing structure* and its *addition* acting together as a single structure shall be shown to meet the requirements of Sections 1609 and 1613.

Exceptions:

1. Any existing lateral load-carrying structural element whose demand-capacity ratio with the *addition* considered is no more than 10 percent greater than its demand-capacity ratio with the *addition* ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of *additions* and *alterations* since original construction.
2. In lieu of compliance with Section 1613 for the existing structure, it shall be permitted to demonstrate compliance of the existing structure and addition, acting together as a single structure, with the performance objectives in ASCE 41 Section 2.2.4. Alterations to existing structural elements initiated for the purpose of improving the performance of the seismic force-resisting system of the existing structure shall be permitted to be included in the ASCE 41 analysis.

3404.4 (IEBC [B] 403.4) Existing structural elements carrying lateral load. Except as permitted by Section 3404.5, where the *alteration* increases design lateral loads in accordance with Section 1609 or 1613, or where the *alteration* results in a structural irregularity as defined in ASCE 7, or where the *alteration* decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall be shown to meet the requirements of Sections 1609 and 1613.

Exceptions:

1. Any existing lateral load-carrying structural element whose demand-capacity ratio with the *alteration* considered is no more than 10 percent greater than its demand-capacity ratio with the *alteration* ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces per Sections 1609 and 1613. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces, and capacities shall account for the cumulative effects of *additions* and *alterations* since original construction.
2. In lieu of compliance with Section 1613 for the altered structure, it shall be permitted to demonstrate compliance of the altered structure and addition with the performance objectives in ASCE 41 Section 2.2.4.

3405.2.1 (IEBC [B] 404.2.1) Evaluation. The building shall be evaluated by a *registered design professional*, and the evaluation findings shall be submitted to the building official. The evaluation shall establish whether the damaged building, if repaired to its pre-damage state, would comply with the provisions of this code for wind and earthquake loads.

Wind loads for this evaluation shall be those prescribed in Section 1609. Earthquake loads for this evaluation, if required, shall be permitted to be 75 percent of those prescribed in Section 1613.

Exception: In lieu of Section 1613, it shall be permitted to demonstrate compliance with the performance objectives in ASCE 41 Section 2.2.1.

3405.2.3 (IEBC [B] 404.2.3) Extent of repair for noncompliant buildings. If the evaluation does not establish compliance of the pre-damage building in accordance with Section 3405.2.1, then the building shall be rehabilitated to comply with applicable provisions of this code for load combinations that include wind or seismic loads. The wind loads for the repair shall be as required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be as required by this code. Earthquake loads for this rehabilitation design shall be those required for the design of the pre-damage building, but not less than 75 percent of those prescribed in Section 1613. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

Exception: It shall be permitted to demonstrate compliance of the rehabilitated structure with the performance objectives in ASCE 41 Section 2.2.1.

3408.4 (IEBC [B] 407.4) Seismic. When a change of occupancy results in a structure being reclassified to a higher risk category, the structure shall conform to the seismic requirements for a new structure of the higher risk category.

Exceptions:

1. ~~Specific seismic detailing requirements of Section 1613 for a new structure shall not be required to be met where the seismic performance is shown to be equivalent to that of a new structure. A demonstration of equivalence shall consider the regularity, over strength, redundancy and ductility of the structure.~~ In lieu of Section 1613, it shall be permitted to demonstrate compliance with the performance objectives in ASCE 41 Section 2.2.4.
2. When a change of use results in a structure being reclassified from Risk Category I or II to Risk Category III and the structure is located where the seismic coefficient, *SDS*, is less than 0.33, compliance with the seismic requirements of Section 1613 are not required.

Reason: The purpose of this proposal is to permit the use of ASCE 41-13 as an exception to IBC Chapter 16 and ASCE 7 where seismic evaluation or retrofit is required for existing buildings. ASCE 41-13 is a combination of two standards referenced in the 2012 IEBC (ASCE 31-03 and 41-06) for seismic evaluation and retrofit. In many cases the provisions of ASCE 31 and 41 are more appropriate for existing buildings by providing strength, stiffness, and acceptance criteria for structural systems that can meet the seismic performance objectives of the IBC without necessarily meeting all the specific detailing requirements. These standards have a history of use and as a result of the current (ANSI compliant) update cycle, incorporate recent research to represent the state of practice for seismic evaluation and retrofit.

Some specific reasons in support of the direct reference of ASCE 41 in the IBC are as follows:

- ASCE 31 and 41 already have been allowed as an option in the 2012 IBC by means of the Section 3401.5 reference to the IEBC as “deemed to comply.” The 2012 IEBC utilizes ASCE 31 and 41 as reference standards in a very similar manner to what is being proposed for IBC Chapter 34. This proposal makes the connection more direct and allows the use of ASCE 41 for seismic evaluation and retrofit without requiring compliance with other portions of the IEBC (fire, life safety, MEP, etc), thus giving design professionals more flexibility in using ASCE 41.
- ASCE 41-13 has two explicit performance objectives consistent with the intent of IBC Chapter 34. There is a “new building standard equivalent” (ASCE 41-13 Section 2.2.4) intended to be used in conditions where the IBC/ASCE 7 is referenced. This performance objective utilizes the seismic hazard levels for new buildings in ASCE 7 and includes other requirements and acceptance criteria intended to provide IBC-equivalent performance. There is also a basic existing building performance (ASCE 41-13 Section 2.2.1) that matches the traditional performance objective of ASCE 31 and 41, and consistent with 75% of IBC-level seismic forces. These two performance objectives are proposed to be applied in the appropriate sections of IBC Chapter 34, consistent with how those sections currently specify IBC forces.

- There is a history of ASCE 41 being referenced in some jurisdictions' adoption of the IBC, including Chapter 34 of the 2007 California Building Code.

A public ballot version of the new standard will be available from ASCE in the spring of 2012 and it is expected that it a prepublication (white cover) version will be available prior to the ICC Final Action Hearings in October of 2012. Any person interested in obtaining a public comment copy of ASCE 41-13 may do so by contacting the proponent at jgoupil@asce.org.

Cost Impact: The code change proposal will not increase the cost of construction.

Staff Analysis: This code change proposal references ASCE standard 41, which is already referenced in the International Existing Building code. However, the proposed change to code text is written to correlate with a new edition of the standard ASCE 41-13, rather than the edition presently referenced in the code, which is the 06 edition. The 2013 edition of this standard is not yet completed, published and available. The update to this standard will be considered by the Administrative Code Committee during the 2013 Code Development Cycle. Should this code change proposal be approved, but the update to the standard not be approved by the Administrative Code Committee, the code text will revert to the text as it appears in the 2012 Edition of the Code. Additionally, if the standard update is approved but the document is not published and available by Dec. 1, 2014, an errata will be issued to the Code that will return the affected code text to the text as it appears in the 2012 Edition of the Code.

G211-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3403.4-G-GOUPIL.doc

G212 – 12

3404.1, 3405.1, 3405.2.3, 3405.5, 3408.4, 3409.1; (IEBC [B] 403.1, 404.1, 404.2.3, 404.5, 407.4, 408.1)

Proponent: David Bonowitz S.E., representing NCSEA Code Advisory Committee, Existing Buildings Subcommittee (dbonowitz@att.net)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Revise as follows:

3404.1 (IEBC [B] 403.1) General. Except as provided by Section 3401.4 or this section, *alterations* to any building or structure shall comply with the requirements of ~~the~~ this code for new construction. *Alterations* shall be such that the existing building or structure is no less ~~complying~~ conforming with the provisions of this code than the existing building or structure was prior to the *alteration*.

Exceptions:

1. An existing *stairway* shall not be required to comply with the requirements of Section 1009 where the existing space and construction does not allow a reduction in pitch or slope.
2. *Handrails* otherwise required to comply with Section 1009.15 shall not be required to comply with the requirements of Section 1012.6 regarding full extension of the *handrails* where such extensions would be hazardous due to plan configuration.

3405.1 (IEBC [B] 404.1) General. Buildings and structures, and parts thereof, shall be repaired in compliance with Section ~~3405 and~~ 3401.2. Work on nondamaged components that is necessary for the required *repair* of damaged components shall be considered part of the *repair* and shall not be subject to the requirements for *alterations* in this chapter. Routine maintenance required by Section 3401.2, ordinary repairs exempt from *permit* in accordance with Section 105.2, and abatement of wear due to normal service conditions shall not be subject to the requirements for *repairs* in this section.

3405.2.3 (IEBC [B] 404.2.3) Extent of repair for noncompliant buildings. If the evaluation does not establish compliance of the predamage building in accordance with Section ~~3404.2.4~~ 3405.2.1, then the building shall be rehabilitated to comply with applicable provisions of this code for load combinations that include wind or seismic loads. The wind loads for the repair shall be as required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be as required by this code. Earthquake loads for this rehabilitation design shall be those required for the design of the pre-damage building, but not less than seventy-five percent of those prescribed in Section 1613. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

3405.5 (IEBC [B] 4 04.5) Flood hazard areas. For buildings and structures in *flood hazard areas* established in Section 1612.3, any *repair* that constitutes substantial improvement of the existing structure, as defined in Section 1612.2, shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in *flood hazard areas* established in Section 1612.3, any *repairs* that do not constitute substantial improvement ~~or repair of substantial damage~~ of the existing structure, as defined in Section 1612.2, are not required to comply with the flood design requirements for new construction.

3408.4 (IEBC [B] 407.4) Seismic. When a change of occupancy results in a structure being reclassified to a higher risk category, the structure shall conform to the seismic requirements for a new structure of the higher risk category.

Exceptions:

1. Specific seismic detailing requirements of Section 1613 for a new structure shall not be required to be met where the seismic performance is shown to be equivalent to that of a new structure. A demonstration of equivalence shall consider the regularity, over strength, redundancy and ductility of the structure.
2. When a change of use results in a structure being reclassified from Risk Category I or II to Risk Category III and the structure is located where the seismic coefficient, *SDS*, is less than 0.33, compliance with the seismic requirements of Section 1613 ~~are~~ is not required.

3409.1 (IEBC [B] 408.1) Historic buildings. The provisions of this code relating to the construction, *repair, alteration, addition*, restoration and ~~movement~~ moving of structures, and change of occupancy shall not be mandatory for *historic buildings* where such buildings are judged by the *building official* to not constitute a distinct life safety hazard.

Reason: This proposal is entirely editorial. At ICC discretion, some of the proposed edits should preferably be addressed as errata. Explanations for proposed edits:

- 3404.1: Match similar wording in 3403.1.
- 3405.1: No need for self-reference. The purpose of this item is to point to 3401.2 re coordination of repairs with maintenance.
- 3405.2.3: Errata
- 3405.5: Edit second paragraph to match first paragraph. Because of the definitions of substantial repair and substantial improvement, this proposed change has no substantive effect and is editorial only.

Cost Impact: The proposed changes will not increase the cost of construction.

G212-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3404.1-G-BONOWITZ.doc

G213 – 12

PART I – IBC STRUCTURAL

202, 3404.3 through 3404.3.3 (NEW) (IEBC [B] 403.3 through 403.3.3(NEW))

PART II – IEBC

202, 907.2 (NEW), 907.2.1 (NEW), 907.2.2 (NEW)

Proponent: David Bonowitz, S.E., representing self (dbonowitz@att.net)

THIS IS A 2 PART CODE CHANGE. BOTH PARTS WILL BE HEARD BY THE IBC STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

PART I – IBC STRUCTURAL

Add new text as follows:

3404.3 (IEBC [B] 403.3) Priority buildings. Priority buildings undergoing alteration shall comply with this section.

3404.3.1 (IEBC [B] 403.3.1) Designation. Unless specifically designated in this section, no building is considered a priority building.

3404.3.2 (IEBC [B] 403.3.2) Triggering alteration. Where the portion of a priority building undergoing the intended alteration exceeds 50 percent of the aggregate area of the building, the alteration work shall include retrofit measures as needed to satisfy Section 3404.3.3. Calculation of the portion undergoing alteration shall include all reconfigured spaces as indicated on the construction documents and, at the discretion of the code official, all spaces served by extended or renovated building systems. The portion undergoing alteration shall be permitted to exclude other portions of the building where incidental work entailed by the intended work must be performed and portions of the building where work not initially intended by the owner is required by this code.

3404.3.3 (IEBC [B] 403.3.3) Triggered seismic scope and criteria. The seismic force-resisting system of the altered building shall comply with the earthquake design provisions of this code. For purposes of this section, the earthquake loads need not be taken larger than 75 percent of the loads that would be required for the design of a new building of similar structure, purpose, and location.

Add new definition as follows:

PRIORITY BUILDING. A building designated by Section 3404.3.1 for special consideration during alteration projects, based on its risk category, seismic design category, occupancy, size, structural system(s), location, and/or other readily known attributes.

PART II – IEBC

Add new definition as follows:

202 DEFINITIONS

PRIORITY BUILDING. A building designated by Section 907.2.1 for special consideration during alteration projects, based on its risk category, seismic design category, occupancy, size, structural system(s), location, and/or other readily known attributes.

Add new text as follows:

907.2 Priority buildings. Priority buildings undergoing Level 3 alterations shall comply with this section.

907.2.1 Designation. Unless specifically designated in this section, no building is considered a priority building.

907.2.2 Triggered seismic scope and criteria. The seismic force-resisting system of the altered building shall comply with reduced IBC level seismic forces.

Reason: This proposal offers a uniform means to encourage local seismic mitigation efforts through code-based triggers.

Clearly, the success of the I-codes as national model codes has improved the practice of building regulation. Paradoxically, however, the same success may have weakened the ability of jurisdictions to tailor the building code to local needs. The more reliable the model codes become, the more state adoption boards are implementing “no amendment” policies. If it’s good enough for the national model, the thinking goes, it’s good enough for us. This is a convenient policy, and perhaps cost-effective in the short term, but it is flawed, as no solution can be right all the time for the full diversity of the country’s buildings, communities, and natural hazards. At the same time, if a new idea is only applicable to a few markets or local conditions, it has a hard time getting into the national code. Thus the need for local amendments remains, while the ability to enact them diminishes.

What’s needed is a mechanism within the model code to facilitate local amendments in response to a jurisdiction’s particular building stock and performance goals. This proposal offers such a mechanism for triggering seismic retrofits of “priority buildings” when major alterations are made. (Similar provisions could be developed for other load types and project triggers, but this initial proposal has a limited scope by design.)

Currently, alteration projects call for seismic considerations only when they impact the seismic force-resisting system (Sections 807.5 and 907.4) or involve the most dangerous structure types (Sections 706.3, 907.4.4, and 907.4.5). Even then, because the basic alteration provision is based on the *change* of demand-capacity ratios, not their absolute values, highly deficient structures are often allowed to remain unimproved while major architectural or building services improvements are implemented. The apparently easy fix to this problem is simply to trigger seismic retrofit when a high DCR is found. But such an approach is naïve and ineffective, and the current provisions were clarified in recent cycles precisely to avoid this misapplication. Since a standard seismic evaluation will find some seismic deficiency in almost any existing building more than, say, twenty years old, such a trigger would discourage basic modernization projects. More important, such a generic trigger applicable to all building and structure types would not result in predictable mitigation. No public policy objective is served by such a scattershot approach.

Instead, this proposal would allow a jurisdiction to target certain buildings for alteration-triggered retrofits. Not only does this limit the cost to building owners as a group, it focuses the mitigation where it will best serve the community. This is especially important for evolving policies that promote earthquake resilience – the ability of a community to recover from a damaging earthquake. Resilience is not only about avoiding deaths; it is about restoring functions and services in a timely way, maintaining community stability. From this perspective, building regulation is not merely about safety. Regulatory policy will also need to prioritize certain occupancies and certain subsets of the building stock that are most likely to delay recovery. This proposal makes that possible within the context of the building code, which, after all, is a building department’s principal regulatory tool.

The idea of identifying certain buildings for special consideration is not new. Many of our existing building provisions are based on seismic design category, which prioritizes some combinations of occupancy and hazard level over others. Similarly, the IEBC includes specific mitigation provisions that target unreinforced masonry parapets and concrete or masonry wall structures (Sections 706.3, 907.4.4, and 907.4.5). These buildings are targeted because of their historic performance as life-threatening collapse hazards. For many jurisdictions, mitigating just those risks is enough. Lately, however, more jurisdictions are looking beyond mere safety toward resilience. They will use the proposed provisions to target, perhaps, weak story multi-family housing, schools or assembly halls that serve as backup emergency centers, private social service organizations, large non-ductile concrete buildings, buildings in near-fault or liquefiable zones, etc. The priorities can be different – as they should be – for each jurisdiction.

We know that effective mitigation requires the right mix of incentives and legislation. But there is certainly a role for triggered retrofit as well, especially where proactive mandates are unfeasible and voluntary effort is limited. The proposal facilitates the planning and enforcement of triggered retrofits by providing a uniform code-based framework.

The proposed provision would work as follows:

- A jurisdiction would amend proposed Section 907.2.1 to designate its priority buildings. Ideally, this would occur after initial planning studies identify the sectors of the building stock of greatest concern. A jurisdiction that makes no designation loses nothing relative to the provisions of the model code.
- With the buildings designated, any Level 3 Alteration project to a priority building would necessarily invoke at least a seismic evaluation, and possibly a retrofit. The choice of triggering projects is also amendable by a jurisdiction. For example, priority buildings could be slated for retrofit based on certain types of Level 2 or Level 3 alterations or based on metrics other than work area.

Some features of the proposal:

- Priority buildings will be designated based on “readily known attributes.” That is, a potential priority building is identifiable in advance, without the need for a detailed engineering evaluation or analysis. Priority status is also not a function of the proposed alteration project. This means that owners, tenants, lenders, building officials, planners, and others can know in advance what the provision’s effects might be.
- Designation of priority buildings is entirely at the jurisdiction’s option. The default condition is that no buildings are designated at all. In this case, the jurisdiction has in effect the building code it would have had if this provision did not exist.
- As proposed, the provision would apply only reduced seismic loads, consistent with traditional allowances for existing buildings and with similar provisions throughout the IEBC. This, too, is adaptable by a jurisdiction.

- An owner can still avoid a retrofit by modifying the scope of her project to avoid the trigger level. This aspect of triggered retrofit provisions makes them more politically feasible and less disruptive than outright mandates.
- By being part of the building code, the proposed provisions bring with them all the advantages of the I-codes: the consensus of professional communities, administrative provisions, an authority and accountability structure, a full array of technical provisions and reference standards, etc. Otherwise, a special ordinance outside the building code would have to incorporate or specifically cite all these items.

Cost Impact: None.

G213-12

PART I – IBC STRUCTURAL

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – IEBC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3404.3 (NEW)-G-BONOWITZ.doc

G214 – 12

3404.4.1 (NEW) [IEBC [B] 403.4.1(NEW)]

Proponent: David Bonowitz, David Bonowitz S.E., representing NCSEA Code Advisory Committee, Existing Buildings Subcommittee (dbonowitz@att.net)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Add new text as follows:

3404.4.1 (IEBC [B] 403.4.1) Seismic design category F. Where the portion of the building undergoing the intended alteration exceeds 50 percent of the aggregate area of the building, and where the building is assigned to seismic design category F, the structure of the altered building shall be shown to meet the earthquake design provisions of this code. For purposes of this section, the earthquake loads need not be taken greater than 75 percent of those prescribed in Section 1613 for new buildings of similar occupancy, purpose, and location. New structural members and connections required by this section shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

Reason: This proposal adds a new category of triggered seismic upgrade for the most vulnerable buildings undergoing major alterations. Currently, alteration triggers seismic upgrade only when the intended alteration project has structural impacts (Section 3404.4). A top-to-bottom architectural and mechanical renovation, however, generally triggers no seismic mitigation because such a project rarely increases lateral system DCRs by 10 percent. This proposal fills some of that mitigation gap.

The proposal is measured. It balances regulatory benefits with potential owner costs in three ways (see also the Cost Impact statement below for mitigating factors):

- The proposal covers only essential facilities in areas of the highest seismicity, i.e. those assigned to Seismic Design Category F. These risk category IV buildings are of greatest importance to a community's post-earthquake response and recovery, and if any buildings are deserving of triggered upgrades when their lives are significantly extended through major alterations, these are. Many such buildings (California hospitals, for example) are already addressed by targeted legislation, so will not be affected by the proposed trigger. Yet many jurisdictions with substantial seismic risks do not have histories of proactive mitigation and currently lack the code mechanism to enforce these common-sense improvements to essential facilities. These jurisdictions look to the model codes for best practices.
- The proposal applies only to major alterations where the intended project already involves more than half the building (a Level 3 Alteration, in IEBC terms).
- The proposal incorporates the concept of "reduced" seismic loads familiar to users of the IEBC; reduced loads are also allowed in current Section 3405 for seismic work triggered by repairs.

Cost Impact: Undetermined: Buildings assigned to SDC F that undergo major alteration will be subject to seismic upgrade. However, 1) it is not known how many such buildings exist, 2) many such buildings already have made or would make seismic improvements voluntarily, especially as part of a major alteration, 3) many such buildings would already comply with the reduced forces and would not entail any additional cost, and 4) owners can avoid the triggered work by limiting their scope of alteration.

G214-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3404.4.1 (NEW)-G-BONOWITZ.doc

G215 – 12

3404.4.5 (NEW) [IEBC [B] 403.4.5 (NEW)]

Proponent: David Bonowitz, David Bonowitz S.E., representing NCSEA Code Advisory Committee, Existing Buildings Subcommittee (dbonowitz@att.net)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Add new text as follows:

3404.4.5 (IEBC [B] 403.4.5) Bracing for unreinforced masonry parapets upon reroofing. Where the intended alteration requires a permit for reroofing and involves removal of roofing materials from more than 25 percent of the roof area of a building assigned to Seismic Design Category D, E or F that has parapets constructed of unreinforced masonry, the work shall include installation of parapet bracing to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. For purposes of this section, design seismic forces need not be taken greater than 75 percent of those that would be required for the design of similar nonstructural components in new buildings of similar purpose and location.

Reason: This proposal introduces a common-sense seismic mitigation provision to the IBC, to match a similar long-standing provision in the IEBC. The proposal is motivated by a pragmatic recognition of best practices from other model codes and ordinances, by observed damage throughout the east coast from the 2011 Virginia earthquake, and by a desire to align key provisions of the IBC and IEBC.

Currently, where the IBC or the IEBC Prescriptive Method is used, jurisdictions lack a mitigation mechanism for this all-too-common and dangerous damage pattern. Unreinforced brick parapets have been killing people in earthquakes since unreinforced brick buildings have existed. Significantly, the people most at risk are not the building owners themselves, but bystanders who happen to be on the sidewalk when the earthquake hits or tenants who attempt to flee the building during the shaking. The most basic mitigation, fulfilling the most basic purpose of existing building regulation, is to require parapet bracing when the life of such a risky building is being extended. Therefore, even if we maintain multiple code approaches for regulating existing buildings, this common-sense and cost-effective mitigation should be a basic provision in all of them.

The proposal is modeled on IEBC Work Area Method, Section 706.3.1, as follows:

- It applies to reroofing projects (a Level 1 Alteration in IEBC terms) because those projects facilitate access to the roof and parapet needed for typical brace installations.
- It only applies to unreinforced masonry parapets. While these exist in relatively few buildings, unbraced URM parapets remain the most widespread, vulnerable, and dangerous structural elements in earthquakes, as we have seen in several recent non-California events, including Virginia, Wells, NV, and Christchurch, NZ.
- It only applies in areas of high seismicity, for buildings assigned to SDC D-F.
- It allows the use of reduced "75 percent" forces. This is consistent with the IEBC provision and with traditional allowances for existing buildings.
- The proposal represents no cost increase at all in jurisdictions (such as Massachusetts, and most of California) that already have similar mitigation triggers of their own or have implemented targeted mitigation ordinances.
- Parapet bracing has a long history and is effective. Los Angeles required URM parapet bracing in 1949.
- Parapet bracing is not intrusive, as it can be done from outside the building.

Cost Impact: URM buildings in areas of high seismicity that undergo reroofing will become subject to parapet bracing. However, there is no additional cost in the many jurisdictions in high seismicity areas that already have similar provisions or targeted mitigation programs.

G215-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3404.4.5 (NEW) #1-G-BONOWITZ.doc

G216 – 12

3404.4.5 (NEW) [IEBC [B] 403.4.5 (NEW)]

Proponent: David Bonowitz, David Bonowitz S.E., representing NCSEA Code Advisory Committee, Existing Buildings Subcommittee (dbonowitz@att.net)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Add new text as follows:

3404.4.5 (IEBC [B] 403.4.5) Wall anchorage for unreinforced masonry walls in major alterations.

Where the portion of the building undergoing the intended alteration exceeds 50 percent of the aggregate area of the building, the building is assigned to seismic design category C, D, E, or F, and the building's structural system includes unreinforced masonry walls, the alteration work shall include installation of wall anchors at the roof line to resist seismic forces, unless an evaluation demonstrates compliance of existing wall anchorage. For purposes of this section, design seismic forces need not be taken greater than 75 percent of those that would be required for the design of new buildings of similar structure, purpose, and location.

Reason: This proposal introduces a common-sense seismic mitigation provision to the IBC, to match a similar long-standing provision in the IEBC. The proposal is motivated by a pragmatic recognition of best practices from other model codes and ordinances, by observed damage throughout the east coast from the 2011 Virginia earthquake, and by a desire to align key provisions of the IBC and IEBC.

Currently, where the IBC or the IEBC Prescriptive Method is used, jurisdictions lack a mitigation mechanism for this vulnerable condition. A lack of roof-to-wall anchors, especially when paired with unbraced URM parapets, poses a remaining risk throughout areas of moderate and high seismicity.

The proposal is modeled on IEBC Work Area Method, Section 907.4.4, as follows:

- It only applies to major alterations where the intended project already involves more than half the building (a Level 3 Alteration, in IEBC terms). Thus, the triggered work represents a small additional cost by comparison, and one that makes sense where significant resources are being spent to modernize a URM building.
- It only applies in areas of moderate to high seismicity. (See note below.)
- It allows the use of reduced "75 percent" forces. This is consistent with the IEBC provision and with traditional allowances for existing buildings.
- The proposal represents no cost increase at all in jurisdictions (such as Massachusetts, and most of California) that already have similar mitigation triggers of their own or have implemented targeted mitigation ordinances.

The proposal would apply in SDC C, D, E, or F. 2012 IEBC Section 907.4.4 applies only in SDC D-F, but motivated by damage from the 2011 Virginia earthquake we are separately proposing extending the IEBC trigger to SDC C. As proponents, we urge consistency between the two codes. If our proposal to extend the IEBC provision to SDC C is disapproved, we would be open to a modification of this IBC proposal that would exempt SDC C.

Cost Impact: URM buildings that undergo a 50% alteration will be subject to wall anchorage. The cost of this work is small compared with the typical cost of such a project. Also, there is no additional cost in the many jurisdictions in higher seismicity areas that already have similar provisions or targeted mitigation programs.

G216-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3404.4.5 (NEW) #2-G-BONOWITZ.doc

G217 – 12

3404.4.5 (NEW) [IEBC [B] 403.4.5 (NEW)]

Proponent: David Bonowitz, David Bonowitz S.E., representing NCSEA Code Advisory Committee, Existing Buildings Subcommittee (dbonowitz@att.net)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Add new text as follows:

3404.4.5 (IEBC [B] 403.4.5) Bracing for unreinforced masonry parapets in major alterations. Where the portion of the building undergoing the intended alteration exceeds 50 percent of the aggregate area of the building, and where the building is assigned to seismic design category C, D, E, or F, parapets constructed of unreinforced masonry shall have bracing installed as needed to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. For purposes of this section, design seismic forces need not be taken greater than 75 percent of those that would be required for the design of similar nonstructural components in new buildings of similar purpose and location.

Reason: This proposal introduces a common-sense seismic mitigation provision to the IBC, to match a similar long-standing provision in the IEBC. The proposal is motivated by a pragmatic recognition of best practices from other model codes and ordinances, by observed damage throughout the east coast from the 2011 Virginia earthquake, and by a desire to align key provisions of the IBC and IEBC.

Currently, where the IBC or the IEBC Prescriptive Method is used, jurisdictions lack a mitigation mechanism for this all-too-common and dangerous damage pattern. Unreinforced brick parapets have been killing people in earthquakes since unreinforced brick buildings have existed. Significantly, the people most at risk are not the building owners themselves, but bystanders who happen to be on the sidewalk when the earthquake hits or tenants who attempt to flee the building during the shaking. The most basic mitigation, fulfilling the most basic purpose of existing building regulation, is to require parapet bracing when the life of such a risky building is being extended. Therefore, even if we maintain multiple code approaches for regulating existing buildings, this common-sense and cost-effective mitigation should be a basic provision in all of them.

The proposal is modeled on IEBC Work Area Method, Section 907.4.5, as follows:

- It only applies to major alterations where the intended project already involves more than half the building (a Level 3 Alteration, in IEBC terms). Thus, the triggered parapet bracing represents a small additional cost by comparison, and one that makes sense where significant resources are being spent to modernize a URM building.
- It only applies to unreinforced masonry parapets. While these exist in relatively few buildings, unbraced URM parapets remain the most widespread, vulnerable, and dangerous structural elements in earthquakes, as we have seen in several recent non-California events, including Virginia, Wells, NV, and Christchurch, NZ.
- It only applies in areas of moderate to high seismicity. (See note below.)
- It allows the use of reduced "75 percent" forces. This is consistent with the IEBC provision and with traditional allowances for existing buildings.
- The proposal represents no cost increase at all in jurisdictions (such as Massachusetts, and most of California) that already have similar mitigation triggers of their own or have implemented targeted mitigation ordinances.
- Parapet bracing has a long history and is effective. Los Angeles required URM parapet bracing in 1949.
- Parapet bracing is not intrusive, as it can be done from outside the building.

The proposal would apply in SDC C, D, E, or F. 2012 IEBC Section 907.4.5 applies only in SDC D-F, but motivated by damage from the 2011 Virginia earthquake we are separately proposing extending the IEBC trigger to SDC C. As proponents, we urge consistency between the two codes. If our proposal to extend the IEBC provision to SDC C is disapproved, we would be open to a modification of this IBC proposal that would exempt SDC C.

Cost Impact: Minor: URM buildings that undergo a 50% alteration will become subject to parapet bracing. The cost of parapet bracing is small compared with the typical cost of such a project. Also, there is no additional cost in the many jurisdictions in higher seismicity areas that already have similar provisions or targeted mitigation programs.

G217-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3404.4.5 (NEW) #3-G-BONOWITZ.doc

G218 – 12

3404.5 (NEW) [IEBC [B] 403.4.5 (NEW)]

Proponent: David Bonowitz, David Bonowitz S.E., representing NCSEA Code Advisory Committee, Existing Buildings Subcommittee (dbonowitz@att.net)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Add new text as follows:

3404.5 (IEBC [B] 403.4.5) Roof diaphragms resisting wind loads in high-wind regions. Where the intended alteration requires a permit for reroofing and involves removal of roofing materials from more than 50 percent of the roof diaphragm of a building or section of a building located where the ultimate design wind speed is greater than 155 mph or in a special wind region as defined in Section 1609, roof diaphragms, connections of the roof diaphragm to roof framing members, and roof-to-wall connections shall be evaluated for the wind loads specified in Section 1609, including wind uplift. If the diaphragms and connections in their current condition are not capable of resisting at least 75 percent of those wind loads, they shall be replaced or strengthened in accordance with the loads specified in Section 1609.

Exception: One- and two-family dwellings need not be evaluated or strengthened.

Reason: This proposal introduces a common-sense mitigation provision to the IBC, to match a similar long-standing provision in the IEBC (Section 706.3.2). The proposal is motivated by a pragmatic recognition of best practices from other model codes and ordinances and by a desire to align key provisions of the IBC and IEBC.

Notes on the proposal:

- The 155 mph triggering wind speed is selected so that only buildings in the most critical wind regions along coastlines (as well as the code-designated special wind regions) are triggered. Note that by using a single wind speed value, the provision will now automatically cover different areas for buildings in different risk categories (see IBC Figures 1609A through 1609C).
- Use of 75 percent wind loads for evaluation limits the impact of the provision to the most deficient structures. This is appropriate.
- Houses are exempt. Many jurisdictions already cover houses with the IRC and exempt them entirely from IBC and IEBC provisions. In these cases the proposed exception makes no difference. Where the IBC or IEBC applies, this exception is considered prudent so as not to discourage very common and beneficial reroofing projects.

Cost Impact: Minor: Deficient buildings in high wind areas will be subject to evaluation, but many such buildings will already be adequate for the reduced loads and will incur no retrofit costs. The proposed exception exempts owners for whom the costs are most likely to discourage maintenance and repair.

G218-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3404.5 (NEW)-G-BONOWITZ.doc

G219 – 12

3404.7, 3404.7.1, 3404.7.2, 3404.7.3 (IEBC [B] 403.7, 403.7.1, 403.7.2, 403.7.3)

Proponent: John Williams, CBO, Chair, ICC Ad Hoc Committee on Health Care

Add new text as follows:

3404.7 (IEBC [B] 403.7) Refuge areas. Where alterations affect the configuration of an area utilized as a refuge areas, the capacity of the refuge area shall not be reduced below that required in Section 3404.7.1 through 3404.7.3.

3404.7.1 (IEBC [B] 403.7.1) Smoke compartments. In Group I-2 and I-3 occupancies, the required capacity of the refuge areas for smoke compartments in accordance with Section 407.5.1 and 408.6.2 shall be maintained.

3404.7.2 (IEBC [B] 403.7.2) Ambulatory care. In ambulatory care facilities required to be separated by Section 422.2, the required capacity of the refuge areas for smoke compartments in accordance with Section 422.4 shall be maintained.

3404.7.3 (IEBC [B] 403.7.3) Horizontal exits. The required capacity of the refuge area for horizontal exits in accordance with Section 1025.4 shall be maintained.

Reason: When a space is being altered the designer needs to check that an alteration does not conflict with the area being used as a refuge area from an adjacent compartment. There is a correlative change being proposed for IEBC Chapter 8.

This proposal is submitted by the ICC Ad Hoc Committee on Healthcare (AHC). The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 5 open meetings and over 80 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.

Cost Impact: None

G219-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3404.7-G-WILLIAMS-ADHOC.doc

G220 – 12

3405.1.1 (NEW) [IEBC [B] 404.1.1 (NEW)]

Proponent: Dan Casella, Chair, ICC 300 Development Committee, Standard for Bleachers, Folding and Telescopic Seating and Grandstands

Add new text as follows:

3405.1.1 (IEBC [B] 404.1.1) Bleacher systems. Existing bleachers, folding and telescopic seating and grandstands being repaired shall comply with ICC 300.

Reason: Directs the code user to the applicable ICC 300 Chapter 5 that specifically deals with gap, guard, repair and maintenance requirements of existing bleachers, folding and telescopic seating and grandstands. Provisions include inspections, maintenance and repairs, guard and openings between the floor boards and the seats. There will be a correlative change to IEBC Section 601.4.

The purpose of the ICC 300 standard is to establish the minimum requirements to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, stability, and safety to life and property relative to the construction, alteration, repair, operation, and maintenance of new and existing temporary and permanent bench bleachers, folding and telescopic seating, and grandstands. Information can be downloaded from the following website:
<http://www.iccsafe.org/cs/standards/IS-BLE/Pages/default.aspx>.

Cost Impact: The proposed changes will not increase the cost of construction.

G220-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3405.1.1 (NEW)-G-CASELLA-ADHOC.doc

G221 – 12

PART I – INTERNATIONAL BUILDING CODE

3405.2 (IEBC [B] 404.2)

PART II – INTERNATIONAL EXISTING BUILDING CODE

IEBC [B] 606.2.2

Proponent: Paul Bennett, Knott Laboratory, LLC, representing Colorado Chapter of ICC (pbennett@knottlab.com)

THIS IS A 2 PART CODE CHANGE. BOTH PARTS WILL BE HEARD BY THE IBC STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

PART I – IBC STRUCTURAL

Revise as follows:

3405.2 (IEBC [B] 404.2) Substantial structural damage to vertical elements of the lateral-force-resisting system. A building that has sustained substantial structural damage to the vertical elements of its lateral-force-resisting system shall be evaluated and repaired in accordance with the applicable provisions of Sections 3405.2.1 through 3405.2.3.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B, or C whose *substantial structural damage* was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.
3. Buildings damaged solely by vehicle impact or fire.

PART II – IEBC

IEBC [B] 606.2.2 Substantial structural damage to vertical elements of the lateral force-resisting system. A building that has sustained *substantial structural damage* to the vertical elements of its lateral force-resisting system shall be evaluated in accordance with Section 606.2.2.1, and either repaired in accordance with Section 606.2.2.2 or repaired and rehabilitated in accordance with Section 606.2.2.3, depending on the results of the evaluation.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B, or C whose substantial structural damage was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.
3. Buildings damaged solely by vehicle impact or fire.

Reason: Older structures may be damaged by vehicle impacts or fires, triggering a “substantial structural damage” threshold assessment and subsequent structural evaluation. When substantial structural damage has been caused by wind, snow or seismic forces, it is recognized that structural strengthening of undamaged building elements is warranted and prudent for life safety purposes. When damage has been caused by vehicle impact or fire, it is unreasonable to require the structural evaluation and likely upgrades to undamaged building elements. This effectively penalizes a building owner for unintended damage that was not initiated as the result of an inherently weak or inadequate structure.

Structural evaluations typically reveal that older structures (pre 1940) will require extensive strengthening, to undamaged building elements to satisfy the current code provisions. This is particularly true for older masonry structures.

Often the property owner's insurance will provide law and ordinance coverage (building code upgrade coverage) for a value equal to 10% of the policy limits. In many instances, this coverage amount is insufficiently adequate to cover the required upgrades. Ultimately the building owner must pay for the building upgrades on their own.

This change allows a building damaged solely by fire or a vehicle impact to be repaired in accordance with the current code requirements, but not mandate that undamaged components be evaluated and potentially be upgraded or replaced.

Cost Impact: This will not increase the cost of construction.

G221-12

PART I- IBC STRUCTURAL

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – IEBC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3405.2-G-BENNETT.doc

G222 – 12

3405.2.2, 3405.4 (IEBC [B] 404.2.2, 404.4)

Proponent: David Bonowitz, David Bonowitz, S.E., representing NCSEA Code Advisory Committee, Existing Buildings Subcommittee (dbonowitz@att.net)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Revise as follows:

3405.2.2 (IEBC [B] 404.2.2) Extent of repair for compliant buildings. If the evaluation establishes compliance of the pre-damage building in accordance with Section 3405.2.1, then repairs shall be permitted that restore the building to its pre-damage state, based on material properties and design strengths applicable at the time of ~~original~~ the most recently permitted construction.

3405.4 (IEBC [B] 404.4) Less than substantial structural damage. For damage less than *substantial structural damage*, repairs shall be allowed that restore the building to its pre-damage state, based on material properties and design strengths applicable at the time of ~~original~~ the most recently permitted construction. New structural members and connections used for this repair shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

Reason: In both provisions, the intent is to refer back to the pre-damage condition. In many cases this is not the “original” condition of the building when it was first erected. The “most recently permitted” condition better conveys the intent.

Cost Impact: The proposed changes will not increase the cost of construction.

G222-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3405.2.2-G-BONOWITZ

G223 – 12

3405.3 (IEBC [B] 404.3)

Proponent: David Bonowitz, David Bonowitz, S.E., representing NCSEA Code Advisory Committee, Existing Buildings Subcommittee (dbonowitz@att.net)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Revise as follows:

3405.3 (IEBC [B] 404.3) Substantial structural damage to gravity load-carrying components. Gravity load-carrying components that have sustained *substantial structural damage* shall be rehabilitated to comply with the applicable provisions of this code for dead and live loads. Snow loads shall be considered if the *substantial structural damage* was caused by or related to snow load effects. Existing gravity load-carrying structural elements shall be permitted to be designed for live loads *approved* prior to the damage. If the *approved* live load is less than that required by Section 1607, the area designed for the nonconforming live load shall be posted with placards of *approved* design indicating the *approved* live load. Nondamaged gravity load-carrying components that receive dead, live or snow loads from rehabilitated components shall also be rehabilitated or shown to have the capacity to carry the design loads of the rehabilitation design. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of this code for new buildings of similar structure, purpose and location.

Reason: The proposal adds a useful provision from the Alterations and Additions sections to the Repairs section.

Cost Impact: The proposed changes will not increase the cost of construction.

G223-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3405.3-G-BONOWITZ

G224 – 12

PART I – INTERNATIONAL BUILDING CODE

3405.3.1 (IEBC [B] 404.3.1)

PART II – INTERNATIONAL EXISTING BUILDING CODE

IEBC [B] 606.2.3.1

Proponent: Paul Bennett, Knott Laboratory, LLC, representing Colorado Chapter of ICC (pbennett@knottlab.com)

THIS IS A 2 PART CODE CHANGE. BOTH PARTS WILL BE HEARD BY THE IBC STRUCTURAL COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

PART I- IBC STRUCTURAL

Revise as follows:

3405.3.1 (IEBC [B] 404.3.1) Lateral force-resisting elements. Regardless of the level of damage to vertical elements of the lateral force-resisting system, if *substantial structural damage* to gravity load-carrying components was caused primarily by wind or earthquake effects, then the building shall be evaluated in accordance with Section 3405.2.1 and, if noncompliant, rehabilitated in accordance with Section 3405.2.3.

Exceptions:

1. One- and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.
2. Buildings assigned to Seismic Design Category A, B, or C whose *substantial structural damage* was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.
3. Buildings damaged solely by vehicle impact or fire.

PART II – IEBC

IEBC [B] 606.2.3.1 Lateral force-resisting elements. Regardless of the level of damage to gravity elements of the lateral force-resisting system, if substantial structural damage to gravity load-carrying components was caused primarily by wind or seismic effects, then the building shall be evaluated in accordance with Section 606.2.2.1 and, if noncompliant, rehabilitated in accordance with Section 606.2.2.3.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B, or C whose substantial structural damage was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.
3. Buildings damaged solely by vehicle impact or fire.

Reason: Older structures may be damaged by vehicle impacts or fires, triggering a “substantial structural damage” threshold assessment and subsequent structural evaluation. When substantial structural damage has been caused by wind, snow or seismic forces, it is recognized that structural strengthening of undamaged building elements is warranted and prudent for life safety purposes. When damage has been caused by vehicle impact or fire, it is unreasonable to require the structural evaluation and likely upgrades to undamaged building elements. This effectively penalizes a building owner for unintended damage that was not initiated as the result of an inherently weak or inadequate structure.

Structural evaluations typically reveal that older structures (pre 1940) will require extensive strengthening, to undamaged building elements to satisfy the current code provisions. This is particularly true for older masonry structures.

Often the property owner's insurance will provide law and ordinance coverage (building code upgrade coverage) for a value equal to 10% of the policy limits. In many instances, this coverage amount is insufficiently adequate to cover the required upgrades. Ultimately the building owner must pay for the building upgrades on their own.

This change allows a building damaged solely by fire or a vehicle impact to be repaired in accordance with the current code requirements, but not mandate that undamaged components be evaluated and potentially be upgraded or replaced.

Cost Impact: This will not increase the cost of construction.

G224-12

PART I- IBC STRUCTURAL

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

PART II – IEBC

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

3405.3.1-G-BENNETT.doc

G225 – 12

3407, 3407.1, 3407.2 (NEW) [IEBC [B] 406, 406.1, 406.2 (NEW)]

Proponent: Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee (CTC)

Revise as follows:

SECTION 3407 (IEBC 406) GLASS REPLACEMENT AND EXISTING WINDOWS

3407.1 (IEBC [B] 406.1) ~~Conformance~~ Replacement glass. The installation or replacement of glass shall be as required for new installations.

3407.2 (IEBC 406.2) Replacement Windows. All windows in Group R-2 or R-3 buildings containing dwelling units, window opening control devices complying with ASTM F2090 shall be installed where an existing window is replaced and where all the following apply to the replacement window:

1. The window is operable;
2. The window replacement includes replacement of the sash and the frame;
3. The top of the sill of the window opening is at a height less than 36 inches (915 mm) above the finished floor;
4. The window will permit openings that will allow passage of a 4-inch diameter (102 mm) sphere when the window is in its largest opened position; and
5. The vertical distance from the top of the sill of the window opening to the finished grade or other surface below, on the exterior of the building, is greater than 72 inches (1829 mm).

The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1029.2.

Exceptions:

1. Operable windows where the top of the sill of the window opening is located more than 75 feet (22.86 m) above the finished grade or other surface below, on the exterior of the room, space or building, and that are provided with window fall prevention devices that comply with ASTM F 2006.
2. Operable windows with openings that are provided with window fall prevention devices that comply with ASTM F2090.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

The CTC Study Group on Child Window Safety has been fostering changes to the code over the past few cycles to clarify the application and specify the appropriate standards to be included in the code regarding child window safety. During the last cycle changes to incorporate those changes were successful in both the IBC and IRC. One of the areas that had not been the focus of CTC was existing windows in existing windows.

This code change incorporates parallel requirements to Section 1013.8 when an existing window is replaced, including the sash and the frame in an R-2 or R-3 building containing dwelling units. By incorporating this section in Chapter 34 and a companion change to the IEBC we can achieve a higher level of safety for children with minimum cost impact.

Cost Impact: The proposed changes will increase the cost of construction.

G225-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3407-G-BALDASSARRA-CTC.doc

G226 – 12
3407.1 (IEBC [B] 406.1)

Proponent: Vickie J. Lovell, InterCode Incorporated, representing International Window Film Association (vickie@InterCodeinc.com)

Revise as follows:

3407.1 (IEBC [B] 406.1) Conformance. The installation or replacement of glass, sash, and frame shall be as required for new installations.

Reason: This proposal clarifies that the new installation requirement is triggered by the replacement of the entire fenestration assembly, not just the vision glass. Without this change, this section conflicts in theory with the IECC Section C101.4.3 Item 2. That section is clear that the glass by itself may be replaced without compliance with the energy code. This proposal brings this clarification to the IBC.

Cost Impact: This code change will not increase the cost of construction and may in fact reduce the cost of construction.

G226-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3407.1-G-LOVELL.doc

G227 – 12

3408 (NEW) (IEBC [B] 407 (NEW))

Proponent: Jeff Inks, Window and Door Manufacturers Association (jinks@wdma.com)

Add new text as follows:

SECTION 3408 (IEBC 407) **REPLACEMENT WINDOW OPENINGS**

3408.1 (IEBC [B] 407.1) Replacement window openings. Where windows are required to provide emergency escape and rescue openings in Group R-2 and R-3 occupancies, replacement windows shall be exempt from the requirements of Sections 1029.2, 1029.3 and 1029.5 provided the replacement window meets the following conditions:

1. The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.
2. The replacement of the window is not part of a change of occupancy.

Reason: The intent of this proposal is to ensure that the IBC does not discourage or prevent improvements in fire safety in older residential occupancies by requiring replacement windows meet all of the provisions of Section 1029 when doing so would require increasing the size of the rough opening or altering the interior wall. Because many of these older buildings were constructed under codes that did not include the same emergency escape and rescue opening provisions that the IBC now requires for new construction, the only way to fully meet all of the requirements of Section 1029 for new construction if required when windows are replaced is to enlarge the rough opening and/or make significant alterations to the interior wall in order to accommodate any increase in window size or lowering of a sill.

At the very least, the significant cost and design challenges of altering the rough opening or interior wall can discourage window replacement and at worst can prevent the replacement of older windows that are harder to operate or inoperable all together because of their age and, that are significantly less energy efficient. When that happens, safety is compromised.

On the whole, while older bedroom windows in older buildings may not provide the full clear opening that is required for new construction or may have a sill height above 44 inches, they nonetheless still provide a viable emergency and escape rescue opening which is the primary intent of the code. Replacement of these windows with the same type of operating window or other type that can provide an equal or greater clear opening than the existing window -- even if they do not fully meet the clear opening or sill height requirements of Section 1029 -- is always an improvement in safety, especially when a replacement opening can provide a larger clear opening than the existing window. Such improvements in safety should not be discouraged or prevented by overly onerous requirements for replacement windows.

This proposal is intended to ensure that doesn't happen by providing limited exceptions to the requirements of Section 1029 that can only be applied when certain conditions are met. The requirements that emergency escape and rescue openings be provided and the operational requirements for windows providing them are maintained for replacement windows as for new construction.

Cost Impact: This proposal will not increase the cost of construction

G227-12

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

3408 (NEW)-G-INKS.doc

G228 – 12

3408.1 (IEBC [B] 407.1)

Proponent: David Bonowitz, David Bonowitz, S.E., representing NCSEA Code Advisory Committee, Existing Buildings Subcommittee (dbonowitz@att.net)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC STRUCTURAL CODE DEVELOPMENT COMMITTEE.

Revise as follows:

3408.1 (IEBC [B] 407.1) Conformance. No change shall be made in the use or occupancy of any building that would place the building in a different division of the same group of occupancies or in a different group of occupancies, unless such building is made to comply with the requirements of this code for such division or group of occupancies. Subject to the approval of the *building official*, the use or occupancy of existing buildings shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without conforming to all the requirements of this code for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.

Exception: The building need not be made to comply with the seismic requirements for a new structure unless required by Section 3408.4.

Reason: This proposal clarifies the intent of the code and resolves an apparent, though misunderstood, conflict regarding the seismic upgrade trigger for a Change of Occupancy project. Currently, section 3408.1 calls for full compliance with the code for new construction in the event of any change of occupancy or use. In concept, this would include compliance with earthquake design provisions. Section 3408.4, however, calls for seismic upgrade only when the project would also change the Risk Category. This proposal clarifies the intent and removes the conflict by adding an Exception to Section 3408.4. The wording of the exception is borrowed from current sections 3408.1 and 3408.4.

Note to ICC: A similar change is appropriate for IEBC Section 407. As in past cycles, we expect this to be made as an automatic coordination change, so we have not submitted a corresponding proposal to the IEBC.

Cost Impact: The proposed changes will not increase the cost of construction.

G228-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3408.1-G-BONOWITZ

G229 – 12

3408.1 (IEBC [B] 407.1)

Proponent: Maureen Traxler, City of Seattle Dept. of Planning & Development, representing Washington Association of Building Officials Technical Code Development (maureen.traxler@seattle.gov)

Revise as follows:

3408.1 (IEBC [B] 407.1) Conformance. No change shall be made in the use or occupancy of any building ~~that would place the building in a different division of the same group of occupancies or in a different group of occupancies, or portion thereof~~ unless such building is made to comply with the requirements of this code for ~~such division or group of occupancies.~~ the occupancy. Changes in use or occupancy in a building or portion thereof shall be such that the existing building is no less complying with the provisions of this code than the existing building or structure was prior to the change. Subject to the approval of the *building official*, the use or occupancy of existing buildings shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without conforming to all the requirements of this code for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use. Change of tenants will be permitted without complying with this Section 3408 so long as the use is not changed.

Reason: This code change updates the charging language for change of occupancy. The term “division of occupancy” is deleted because the term is only used once elsewhere in the Code (Section 111.2), and its meaning is vague. When a building changes to a use that has special Building Code requirements, the building, or the portions of the building where the new use is located, should be made to comply with those code requirements. For example, if an ambulatory care facility expands from treatment of 3 patients to treatment of 6, Section 903.2.2 would require a sprinkler system to be installed. If an S-1 occupancy changes from the storage of clothing to storage of furniture, Section 903.2.9 would require sprinklers. Hazardous materials storage might not be allowed to move to a higher floor. There are many other similar examples. Even though the code official would not always be aware of these changes, this proposal would provide authority to require compliance when changed conditions are known, and prohibits changes in use that reduce a building’s compliance.

Cost Impact: The code change proposal will not increase the cost of construction.

G229-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3408.1-G-TRAXLER.doc

G230 – 12

3408.1 (IEBC [B] 407.1)

Proponent: Marc Sampson, Longmont Fire Department, CO Representing Fire Marshal's Association of Colorado

Revise as follows:

3408.1 (IEBC [B] 407.1) ~~Conformance~~ Change of use or occupancy. No change shall be made in the use or occupancy of any building that would place the building in a different division of the same group of occupancies or in a different group of occupancies, unless such building is made to comply with the requirements of this code for such division or group of occupancies.

3408.1.1 (IEBC [B] 407.1.1) Change to less hazardous use. Subject to the approval of the building official, the use or occupancy of existing buildings shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without conforming to all the requirements of this code for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.

3408.1.2 (IEBC [B] 407.1.2) Change in use from the *International Residential Code*. For dwellings or townhouses constructed in compliance with the *International Residential Code*, no change shall be made in the use or occupancy of a building which would result in an occupancy regulated by this code unless such building is made to comply with the requirements of this code for the applicable occupancy classification.

REASON: Currently the code contains no provision on how to transition from an IRC structure to an IBC structure. The IBC is based on 'occupancy classifications' while the IRC is not.

These revisions are proposed to the IBC to clarify the application of the code when a building constructed under the IRC undergoes a change of use or occupancy which would now place the building under the regulation of the IBC. Since a dwelling constructed under the IRC is not constructed identically to a dwelling constructed under the IBC, it creates confusion as to how to make this transition.

The 2nd sentence of Section 3408.1 is placed into a separate section creating Section 3408.1.1. This section states the building official can allow a change of occupancy. This section should not be hidden within the text, but in a standalone section.

Correlating code changes have been submitted to the IEBC and IFC. The IEBC and IFC code changes are provided below so you can see that all three codes will be correlated.

The correlating code change to the IFC is as follows:

Revise IFC Section 102.3 as follows:

[A] 102.3 Change of use or occupancy. No change shall be made in the use or occupancy of any structure that would place the structure in a different division of the same group or occupancy or in a different group of occupancies, unless such structure is made to comply with the requirements of this code and the International Building Code.

[A] 102.3.1 Less hazardous use. Subject to the approval of the fire code official, the use or occupancy of an existing structure shall be allowed to be changed and the structure is allowed to be occupied for purposes in other groups without conforming to all of the requirements of this code and the International Building Code for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.

[A] 102.3.2 Change in use from the *International Residential Code*. For dwellings or townhouses constructed in compliance with the *International Residential Code*, no change shall be made in the use or occupancy of a building which would result in an occupancy regulated by this code unless such building is made to comply with the requirements of this code for the applicable occupancy classification.

Even though the text in IFC Section 102.3 does not show [B] in the margin, the text is identical. Once the revisions are approved to the IBC, IEBC and IFC, all three codes will contain the equivalent requirements and correlate.

Cost Impact: The code change will not increase the cost of construction.

G230-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3408.1-G-SAMPSON.doc

G231 – 12

202, 3408.1.1 (NEW) [IEBC [B] 202, 407.1.1 (NEW)]

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering (al.godwin@aon.com)

Add new text as follow:

3408.1.1 (IEBC [B] 407.1.1) Change of Character. A change in occupancy with no change of occupancy classification shall not be made to any structure that will subject the structure to any special provisions of the applicable *International Codes*, without approval of the *building official*. Compliance shall be only as necessary to meet the specific provisions and is not intended to require the entire building be brought into compliance.

Add new definition as follows:

CHANGE OF OCCUPANCY. A change in the purpose or level of activity within a building that involves a change in application of the requirements of this code.

Reason: In the last code cycle, Code Change EB27-09/10 added “10. Ambulatory health care facilities” to IEBC Section 902.1 (now 1002.1) under the classification of “change of character. This section in the IEBC, along with The IEBC definition of Change of Use, in general verbiage, recognizes that there are changes of use that do not involve changing occupancy groups.

IEBC Section 1001.2 states:

“**1001.2 Change in occupancy with no change in occupancy classification.** A change in occupancy, as defined in Section 202, with no *change of occupancy* classification shall not be made to any structure that will subject the structure to any special provisions of the applicable *International Codes*, including the provisions of Section 1002 through 1011, without the approval of the code official.”

This proposal is to bring those provisions from IEBC Section 1001.2 over into Chapter 34 of the IBC.

As noted in the IEBC, it is possible to change a use without changing the occupancy classification. Some examples are as follows:

1. Group A-2 bar with an occupant load of 275 to a Group A-2 bar with an occupant load of 350. Increasing occupant loads is permitted under Section 1004.2.
2. Group B office to Group B Ambulatory Health Care
3. Group B office to Group B café
4. Group F-1 factory to a Group F-1 woodworking shop.
5. Group H-3 Oxidizing gases to Group H-3 Flammable solids
6. Group M retail to Group M retail of upholstered furniture
7. Group S-1 warehouse to Group S-1 tire warehouse over 20,000 cubic feet
8. Group S-1 warehouse to Group S-1 motor vehicle repair garage
9. Group R-2 apartment to Group R-2 Live/Work unit.

Each of these classifications has particular code provisions that would apply if the occupancy had been originally identified. Some items might be fire protection, alarms, fresh air, restroom facilities, accessibility, smoke barriers, etc. The IBC currently does not specifically address these changes since they do not change Groups or change Divisions within Groups.

When making a change of character, it is not necessary to totally re-evaluate the building. Only the new applicable provisions should be addressed.

For example:

Group A-2 bar with an occupant load of 275 to a Group A-2 bar with an occupant load of 350.

Items that might require review:

Means of egress – 1004.2, to the public way
Sprinklers – 903.2.1.2, only in this space
Alarms – 907.2.1, only in this space
Restrooms – Chapter 29
Fresh air – IMC
Accessibility – see Section 3411
If food – upgrade of interceptor provisions of the IPC

Items that might not require a new review:

Height and area
Exterior walls and openings

As this is a confusing issue, the code official will need to define what items of correction are appropriate. While the wording may be new, code officials have performed this service for years. This proposal just puts it in the code.

Cost Impact: This code change proposal will not increase the cost of construction.

G231-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3408.1.1 (NEW)-G-GODWIN

G232 – 12

3409.1, 3409.2 [IEBC [B] 408.1, 408.2 (NEW)]

Proponent: David Bonowitz, David Bonowitz, S.E., representing NCSEA Code Advisory Committee, Existing Buildings Subcommittee (dbonowitz@att.net)

Revise as follows:

SECTION 3409 (IEBC [B] 408) HISTORIC BUILDINGS

3409.1 (IEBC [B] 408.1) ~~Historic buildings~~ General. ~~The provisions of this code that require improvements relative to a building's existing condition or, in the case of repairs, that require improvements relative to a building's pre-damage condition, shall not be mandatory for historic buildings unless specifically required by this Section. relating to the construction, repair, alteration, addition, restoration and movement of structures, and change of occupancy shall not be mandatory for historic buildings where such buildings are judged by the building official to not constitute a distinct life safety hazard.~~

3409.2 (IEBC [B] 408.2) Life safety hazards. The provisions of this code shall apply to historic buildings judged by the building official to constitute a distinct life safety hazard.

3409.2 ~~3409.3~~ (IEBC [B] 408.2 ~~408.3~~) Flood hazard areas. Within flood hazard areas established in accordance with Section 1612.3, where the work proposed constitutes substantial improvement as defined in Section 1612.2, the building shall be brought into compliance with Section 1612.

Exception: Historic buildings that are:

1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places;
2. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or
3. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.

Reason: This proposal clarifies what we believe to be the intent of the code with respect to historic buildings: they should be maintained, and new work should be to code standards (with allowances for historic materials already in 3401.4), but upgrades normally triggered in non-historic buildings generally should not be triggered in historic buildings.

The current provision waives all of the code's Existing Buildings provisions for any historic building. We believe this is too broad a waiver, and likely unintended. The better approach, consistent with the more lengthy and detailed IEBC provisions, is to enforce maintenance provisions but to waive triggered upgrades.

Specifically, the proposal maintains the current provisions regarding "distinct life safety hazards" and flood hazard areas" but does the following:

- Editorially changes the title of Section 3409.1 to avoid duplication of title of whole Section 3409.
- Modifies Section 3409.1 to exempt only "improvements" relative to the existing condition before an addition, alteration, repair, change of occupancy, or relocation project begins.
- Moves the current provision regarding "distinct life safety hazards" to its own subsection and rewords it to remove a confusing double negative. Note that in doing so the proposal has the effect of saying that an historic building is *not* a distinct life safety hazard unless it is explicitly judged to be one. This is a change relative to the current provision.
- Renumbers 3409.2 to 3409.3 but otherwise leave the flood provisions untouched.

Note to ICC: A similar change is appropriate for IEBC Section 408. As in past cycles, we expect this to be made as an automatic coordination change, so we have not submitted a corresponding proposal to the IEBC.

Cost Impact: This code change proposal will not increase the cost of construction.

G232-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3409.1-G-BONOWITZ

G233 – 12

3410.2(NEW) [IEBC [B] 409.2 (NEW)]

Proponent: Dan Casella, Chair, ICC 300 Development Committee, Standard for Bleachers, Folding and Telescopic Seating and Grandstands

Revise as follows:

3410.1 (IEBC [B] 409.1) Conformance. Structures moved into or within the jurisdiction shall comply with the provisions of this code for new structures.

3410.2 (IEBC [B] 409.2) Bleacher systems. Bleachers, folding or telescopic seating or grandstands that are being relocated shall comply with ICC 300.

Reason: The purpose is for coordination with ICC 300 Section 505. There is also a correlative change to IEBC Section 1301. Directs code users to the ICC-300 for correct rules on relocation of an existing bleacher (due to floor replacement or gym layout redesign or other conditions) and other related rules on seating that may apply during building repairs or remodeling. Sections 305, 309 and 311 are addressed in Chapter 5. Section 310, Accessibility, is required when the alteration would require movement of major structural elements for the bleacher.

ICC 300 text is indicated below.

SECTION 505 SEATING RELOCATION

Section 505.1 Relocating existing bleachers. Relocating existing bleachers to a new location shall be permitted provided the existing bleacher complies with Sections 303.6, 304, 306, 307, 308 and 310 and Chapter 5.

Exception: Where full compliance with Sections 310.1 and 501.4 is *technically infeasible*, the relocated existing bleachers shall provide access in compliance with the building code to the maximum extent technically feasible.

The purpose of the ICC 300 standard is to establish the minimum requirements to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, stability, and safety to life and property relative to the construction, alteration, repair, operation, and maintenance of new and existing temporary and permanent bench bleachers, folding and telescopic seating, and grandstands. Information can be downloaded from the following website:
<http://www.iccsafe.org/cs/standards/IS-BLE/Pages/default.aspx>.

Cost Impact: The proposed changes will not increase the cost of construction.

G233-12

Public Hearing: Committee:	AS	AM	D
Assembly:	ASF	AMF	DF

3410.2 (NEW)-G-CASELLA-ADHOC.doc

G234 – 12
3411.3 (IEBC [B] 410.3)

Proponent: Clare Ray Allshouse AIA, CBO, City of Shoreline, WA, representing Washington Association of Building Officials Technical Code Development Committee (rallshouse@shorelinewa.gov)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Revise as follows:

3411.3 (IEBC [B] 410.3) Extent of application. *An alteration of an existing facility shall not impose a requirement for greater accessibility than that which would be required for new construction. Alterations shall not reduce or have the effect of reducing accessibility of a *facility* or portion of a *facility* to less than that which would be required for new construction.*

Reason: The current specific requirement to restrict any reduction of existing accessibility has the unintended consequence of not allowing for a lesser level of accessibility otherwise allowed by current code. This is inconsistent with the code language in the first sentence of this section that prohibits imposing a requirement for greater accessibility than that which be required for new construction. In addition, current ADA and ABA Accessibility Guidelines for Buildings and Facilities Section 202.3.1 Prohibited Reduction in Access, as published in the Federal Register, states: "An alteration that decreases or has the effect of decreasing the accessibility of a building or facility below the requirements for new construction at the time of the alteration is prohibited." To be consistent with this standard, an alteration to an existing fully accessible space should be allowed to have an area that is not accessible provided that such area would not be required to be accessible in new construction.

Cost Impact: The code change proposal will not increase the cost of construction.

G234-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3411.3-G-ALLSHOUSE

G235 – 12

3411.1, 3411.4, 3411.5.1 (NEW), 3411.6, 3411.8.9 [IEBC [B] 410.1, 410.4, 410.5.1 (NEW), 410.6, 410.8.9]

Proponent: Larry Brown, National Association of Home Builders (NAHB)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Revise as follows:

3411.1 (IEBC [B] 410.1) Scope. The provisions of Sections 3411.1 through 3411.9 apply to maintenance, change of occupancy, *additions* and *alterations* to existing buildings, including those identified as *historic buildings*.

Exception: Type B dwelling or sleeping units required by Section 1107 of this code are not required to be provided in existing buildings and facilities being altered or undergoing a change of occupancy.

3411.4 (IEBC [B] 410.4) Change of occupancy. Existing buildings that undergo a change of group or occupancy shall comply with this section.

~~**Exception:** Type B dwelling units or sleeping units required by Section 1107 of this code are not required to be provided in existing buildings and facilities undergoing a change of occupancy in conjunction with alterations where the work area is 50 percent or less of the aggregate area of the building.~~

3411.5.1 (IEBC [B] 410.5.1) Type B dwelling or sleeping units. Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 for Type B units apply only to the quantity of the spaces being added

3411.6 (IEBC [B] 410.6) Alterations. A facility that is altered shall comply with the applicable provisions in Chapter 11 of this code, unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.

Exceptions:

1. The altered element or space is not required to be on an accessible route, unless required by Section 3411.7.
2. Accessible means of egress required by Chapter 10 are not required to be provided in existing facilities.
3. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provision for a Type B dwelling unit.
4. ~~Type B dwelling or sleeping units required by Section 1107 of this code are not required to be provided in existing buildings and facilities undergoing a change of occupancy in conjunction with alterations where the work area is 50 percent or less of the aggregate area of the building.~~

~~**3411.8.9 (IEBC [B] 410.8.9) Type B dwelling or sleeping units.** Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being added, the requirements of Section 1107 for Type B units apply only to the quantity of the spaces being added. Where Group I-1, I-2, R-1, R-2, R-3 or R-4 dwelling or sleeping units are being altered and where the work area is greater than 50 percent of the aggregate area of the building, the requirements of Section 1107 for Type B units apply only to the quantity of the spaces being altered.~~

Reason: This change added to the 2012 IBC far exceeds the Federal Fair Housing Act (FHAct) requirements for accessibility and should be deleted. The I-Codes should be used for the purpose of providing construction requirements to address life-safety concerns, not as a vehicle to orchestrate social change. Of most importance is that these provisions requiring compliance with IBC "Type B Units", is contrary to Federal law. First, these provisions expands the Federal law that only multifamily "buildings" constructed for first occupancy after March 13, 1991 need to be constructed to the FHAct requirements. Second, these provisions apply to ALL existing buildings converted to multifamily use, no matter when they were first constructed. But, Federal law does not require existing buildings undergoing alterations to comply with the FHAct. Another problem is that these provisions seems to be an attempt to circumvent and nullify the FHAct and the rulings handed down by the Federal Courts. The FHAct Rules includes a two-year statute of limitations on bringing suit and making corrections to an existing non-compliant multifamily building, a statute of limitations being upheld by the Federal Circuit Courts of Appeals. There is also the aspect of Federal preemption. By containing these provisions the I-Codes will be contrary to Federal Law. As Federal Law will preempt any state or local law, there will be challenges to the adoption of this Code. There is no benefit for any state or local jurisdiction to have to fight a challenge in court if the adoption of the I-Codes contains these provisions. It appears the inclusion of these provisions in the I-Codes is an attempt by a department of the federal government to mandate social change without going through the Federal Administrative Procedure Act rulemaking process. If it is intended that HUD will be adding this type of provision to the requirements of the FHAct, then this type of provisions should not be included in the I-Codes until such time as they are enacted into Federal law.

Cost Impact: The code change proposal will not increase the cost of construction.

G235-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3411.4-G-BROWN

G236 – 12

3411.4 [IEBC [B] 410.4], 3411.6 [IEBC [B] 410.6], 3411.8.9 [IEBC [B] 410.8.9]

Proponent: Ron Nickson, National Multi Housing Council (rnickson@nmhc.org)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Revise as follows:

3411.4 (IEBC [B] 410.4) Change of occupancy. Existing buildings that undergo a change of group or occupancy shall comply with this section.

Exception: Type B *dwelling units* or *sleeping units* required by Section 1107 of this code are not required to be provided in existing buildings and facilities ~~undergoing a change of occupancy in conjunction with alterations where the work area is 50 percent or less of the aggregate area of the building.~~

3411.6 (IEBC [B] 410.6) Alterations. A *facility* that is altered shall comply with the applicable provisions in Chapter 11 of this code, unless *technically infeasible*. Where compliance with this section is *technically infeasible*, the *alteration* shall provide access to the maximum extent technically feasible.

Exceptions:

1. The altered element or space is not required to be on an *accessible* route, unless required by Section 3411.7.
2. *Accessible means of egress* required by Chapter 10 are not required to be provided in existing facilities.
3. The *alteration* to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provision for a *Type B dwelling unit*.
4. *Type B dwelling or sleeping units* required by Section 1107 of this code are not required to be provided in existing buildings and facilities ~~that were first occupied prior to March 13, 1991, undergoing a change of occupancy in conjunction with alterations where the work area is 50 percent or less of the aggregate area of the building.~~

3411.8.9 (IEBC [B] 410.8.9) Type B dwelling or sleeping units. Where four or more Group I-1, I-2, R-1, R-2, R-3 or R-4 *dwelling or sleeping units* are being added, the requirements Section 1107 for *Type B units* apply only to the quantity of the spaces being added. Where Group I-1, I-2, R-1, R-2, R-3 or R-4 *dwelling or sleeping units* in buildings first occupied March 13, 1991 or later are being altered and where the work area is greater than 50 percent of the aggregate area of the building, the requirements Section 1107 for *Type B units* apply only to the quantity of the spaces being altered.

Reason: To revise Section 3411.6, Exception 4 to comply with the Fair Housing Act as it applies to existing construction. The Fair Housing Act specifically applies to new buildings for first occupancy after March 13, 1991 and the requirement of Section 3411.6, Exception 4, should not apply to buildings constructed and occupied prior to the effective date of the Fair Housing Act. The section as written would place an undue burden on renovation of existing buildings as costly structural changes and other building modification needed to accommodate the accessibility provisions of the Fair Housing Act could impact the feasibility of upgrading apartments and other existing buildings that are modified to R occupancy.

Cost Impact: The proposed changes will not increase the cost of construction. Reduce the cost of construction.

G236-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3411.6-G-NICKSON.doc

G237 – 12

PART I – INTERNATIONAL BUILDING CODE

1007.1, 3411.5, 3411.6, 3411.7, 3411.8 (NEW), 3411.8.1 (NEW) [IFC [B] 1007.1, IEBC [B] 410.5, 410.6, 410.7, 410.8(NEW), 410.8.1(NEW)]

Proponent: Gene Boecker, AIA, Code Consultants, Inc, representing himself

THIS CODE CHANGE PROPOSAL WILL BE HEARD BY THE IBC MEANS OF EGRESS COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Revise as follows:

3411.5 (IEBC [B] 410.5) Additions. Provisions for new construction shall apply to additions. An addition that affects the accessibility to, or contains an area of, a primary function shall comply with the requirements in Section 3411.7 and 3411.8.

3411.6 (IEBC [B] 410.6) Alterations. A facility or element that is altered shall comply with the applicable provisions in Chapter 11 of this code, unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible. Accessible means of egress complying with Section 1007 shall be provided as required in Section 3411.8.

Exceptions:

1. The altered element or space is not required to be on an accessible route, unless required by Section 3411.7.
- ~~2. Accessible means of egress required by Chapter 10 are not required to be provided in existing buildings and facilities.~~
- ~~3~~ 2. The alteration to Type A individually owned dwelling units within a Group R-2 occupancy shall be permitted to meet the provision for a Type B dwelling unit.
- ~~4~~ 3. Type B dwelling or sleeping units required by Section 1107 of this code are not required to be provided in existing buildings and facilities undergoing a change of occupancy in conjunction with alterations where the work area is 50 percent or less of the aggregate area of the building.

3411.7 (IEBC [B] 410.7) Alterations affecting an area containing a primary function. Where an alteration affects the accessibility to, or contains an area of primary function, the route to the primary function area shall be accessible. The accessible route to the primary function area shall include toilet facilities or drinking fountains serving the area of primary function.

Exceptions:

1. The costs of providing the accessible route are not required to exceed 20 percent of the costs of the alterations affecting the area of primary function.
- ~~2. This provision does not apply to alterations~~ Alterations limited solely to windows, hardware, operating controls, electrical outlets and signs.
- ~~3. This provision does not apply to alterations~~ Alterations limited solely to mechanical systems, electrical systems, installation or alteration of fire protection systems and abatement of hazardous materials.
- ~~4. This provision does not apply to alterations~~ Alterations undertaken for the primary purpose of increasing the accessibility of an existing building, facility or element.
- ~~5. This provision does not apply to altered~~ Altered areas limited to Type B dwelling and sleeping units.

3411.8 (IEBC [B] 410.8) Accessible means of egress. Not less than one accessible means of egress shall be provided in accordance with Section 1007 and 3411.8.1 in alterations affecting an area containing a primary function and in additions.

Exceptions:

1. Existing buildings where the alterations are less than 50 percent of the aggregate building area.
2. Historic buildings.
3. Accessible means of egress is not required to exceed 20 percent of the costs of the alterations including any costs associated with compliance for Section 3411.7. Where the costs to provide accessibility cannot accommodate compliance with both this Section and Section 3411.7, Section 3411.7 shall take precedence.
4. Alterations limited solely to windows, hardware, operating controls, electrical outlets and signs.
5. Alterations limited solely to mechanical systems, electrical systems, installation or alteration of fire protection systems and abatement of hazardous materials.
6. Alterations undertaken for the primary purpose of increasing the accessibility of a facility.
7. Altered areas limited to Type B dwelling and sleeping units

3411.8.1 (IEBC [B] 410.8.1) Means of egress through the existing building. Where the accessible means of egress from an portion of a building being altered, undergoing a change of occupancy or addition requires occupants to egress through portions of the existing building, compliance with Section 1007 is required through the existing building, unless technically infeasible. Where compliance with this provision is technically infeasible, the accessible means of egress through the existing building shall provide access to the maximum extent technically feasible.

1007.1 (IFC [B] 1007.1) Accessible means of egress required. Accessible means of egress shall comply with this section. Accessible spaces shall be provided with not less than one accessible means of egress. Where more than one means of egress are required by Section 1015.1 or 1021.1 from any accessible space, each accessible portion of the space shall be served by not less than two accessible means of egress.

Exceptions:

1. Accessible means of egress are not required in alterations to for existing buildings shall be provided as required in Section 3411.8.
2. One accessible means of egress is required from an accessible mezzanine level in accordance with Section 1007.3, 1007.4 or 1007.5.
3. In assembly areas with ~~sloped~~ ramped or stepped aisles, one accessible means of egress is permitted where the common path of travel is accessible and meets the requirements in Section 1028.8.

Reason: During last code change cycle, a proposal similar to this was presented. The committee felt it was too confusing and that it did not address the concept of disproportionate cost effectively. This proposal seeks to address those issues more clearly. Where possible the language was changed to be uniform among the various codes and sections.

Common sense should dictate that where major alterations occur consideration for at least one accessible means of egress should be provided. Additionally, the simple idea that an accessible means of egress should be intentionally denied to a segment of the population does not seem appropriate. As the codes now stand, a building can be completely gutted with only the facades remaining and no accessible means of egress must be provided.

It is important to remember that the new construction requirements in the IBC only require a maximum of two accessible means of egress as noted in Section 1007.1 (assuming travel distance compliance is accommodated).

This proposal affects sections in both the IBC and the IEBC with the intent that the changes in the IBC are reflected in the IEBC as well.

1007.1: The first exception to the section is changed to indicate that existing building provisions are noted in Chapter 34. This is the proper scoping location for issues dealing with existing buildings – not Chapter 10. A language change is provided to the third exception based on consistency with the term usage elsewhere in the code.

3411.5/410.5: A cross reference to the section addressing accessible means of egress is added. The addition is required to comply with new construction in every other aspect. It makes sense to reference this aspect as well.

3411.6/410.6: Under the current code, the exception makes reference to Chapter 10 but the main text does not. This closes that loop. Where accessible means of egress are required, it is necessary to direct the code user to the proper section. The reference to 1007 does that. Additionally, the word "element" is included in the charging language. It was unclear previously what should be done for the specific element under an alteration. For example, if a door is being replaced with one that has a vision lite, the door surface, hardware and vision lite location are subject to the "element" portion of the requirement but the accessible route to and maneuverable approach to the door are not part of the element so they would not be required to be altered. Similarly, if new electrical controls are installed, they are subject to the mounting height requirements but the entire space is not required to be altered for any other accessible elements not being altered. This is consistent with the approach taken in the Federal 2010 ADA Standards for Accessible Design. On the other hand, if an exterior stairway is being replaced in a non-sprinklered building then the clear width between handrails should be taken into consideration in the design.

3411.6/410.6, exception #2: The exception states that nothing is required for the existing building relative to accessible means of egress. However, an addition impacts the existing building to which it is attached. Egress through the existing building from an addition is more similar to an alteration of the existing egress system. The revised text points to the new code text in 3411.8.1 for what must be done for these conditions.

3411.7/410.7: (No change)

3411.8/410.8: A new section is added to specifically address accessible means of egress. Rather than the blanket statement in Section 1007.1 of the building code, this section will address the scope and extent of work necessary to address accessible means of egress for existing buildings. It directs the code user to Section 1007 for the technical requirements when an accessible means of egress is necessary as well as clearly delineate that when an alteration occurs affecting an area containing a primary function, an accessible means of egress must be provided. This is similar to the general requirements in 3404.1/403.1 which require alterations to meet "new code." The threshold is limited to alterations affecting a primary function because that threshold relates to the importance of changes to an area and is understood due to its relationship with the Federal accessibility regulations for the past 20 years. The intent is to provide at least one accessible means of egress.

3411.8/410.8, exception #1: Alterations with some magnitude should address accessible means of egress; if the alteration is relatively small then there is reason to limit the requirement. The threshold of 50% of the building area is intended to correspond to IBC Alterations – Level 3. Alterations with less than 50% would not require an accessible means of egress to be provided. Even if the accessible means of egress would not be a disproportionate cost (exception #2), in small alterations the area required to create the accessible means of egress may be disproportionate to the space allowed for the alteration. If so, it may "steal" too much space from an otherwise small area and would not be appropriate.

3411.8/410.8, exception #2: The exception makes it clear that an accessible means of egress is not required for alterations to historic buildings. To do so, may alter the historic character. While an accessible means of egress should be provided wherever possible, the exception recognizes that in historic buildings the ability to make the necessary changes to comply may be detrimental to the historic integrity.

3411.8/410.8, exception #3: Existing buildings come in all shapes and sizes and the work proposed for creating an accessible means of egress can be a small part or major portion of the effort. This exception identifies that and uses the same 20% rule for the accessible route relative to the primary use area. The exception also clarifies that where funds cannot provide the accessible route *and* an accessible means of egress, it is more important to provide the accessible route. This maintains consistency with the Federal requirements for alterations affecting an area containing a primary function.

3411.8/410.8, exceptions #4, #5, #6, #7: These are the same as exceptions #2, #3, #4 and #5 in Section 3411.7 for alterations affecting an area containing a primary function. These are included here for consistency.

3411.8.1/410.8.1: If an addition is designed such that the means of egress must enter the existing building then the general rule is that the egress design in the existing building must meet the requirements for egress as it passes through the existing building. This is simply the continuation of the means of egress from the addition for egress width, panic hardware (as applicable) and similar concerns. The same should be true for the design of the accessible means of egress. If one of the accessible egress paths leads through the existing building, it too needs to meet/continue the level of protection as designed in the addition. The limitation to this is that if the effort to make the existing means of egress accessible is "technically infeasible" then work should be done to what is possible. One example of this may be making sure that the slopes along the egress path in the existing building's corridor are proper even if the width cannot be altered to allow the proper maneuverability approach to the exit door.

The codes identify the minimums necessary for life safety. These proposed changes provide the disabled community with similar levels of life safety to the general public and still sets reasonable thresholds based on the extent of work for the project. With the adoption of the new 2010 ADA Standards for Accessible Design, it is clear that the IBC will set the standard for accessible means of egress. This organization has a responsibility to act in the best interests of the general public and all its diversity. Where major changes are proposed to an existing building due to a large alteration or an addition, it should be the desire of the ICC to incorporate appropriate accessible means of egress where possible.

Cost Impact: The code change proposal will increase the cost of construction in many situations but may have no effect in others.

It is not easy to address what costs could be affecting this due to the myriad possible configurations for a building. A building that is a single story at grade may have no additional cost. Because an accessible entrance would be required, it would function as the accessible means of egress. Hence, a single story building with a total gut renovation may be unaffected cost-wise by this proposal.

The main costs are those involving an elevator of adequate size on emergency standby power and a two-way communications system. If the elevator is too small, the costs to alter that would be disproportionate and it would not be required according to IBC Section 3411.8, exception 2 or IBC Section 905.4, exception #3.

At the opposite end of the spectrum could be a nine story high-rise building that is being gutted on five floors. It would be required to have an accessible route to the upper floors. The IFC would require the emergency power for fire fighter operation so that cost for that part of the accessible means of egress is covered. In that situation only the two-way communication systems costs would apply.

Buildings without elevators would likely similarly fall into the category of disproportionate costs since the addition of an elevator can be costly. Moreover, the accessible means of egress is tied into alterations that affect an area containing a primary function. This already has accessibility requirements for access such as toilet room and accessible route renovations. If the costs to add an elevator are within the 20 percent cap but the cost to add emergency standby power would be beyond the 20 percent, the exceptions in IBC Section 3411.8, exception 2 and IEBC Section 905.4, exception #3 make it clear that the costs for access take precedence over the costs for egress and that combined they are not required to exceed the 20 percent figure.

In many cases the 20 percent cap will be met by the required access features and there may be no funds remaining for an accessible egress. The important thing is that we should recognize the need to provide a means of egress for all of the occupants within the building to the greatest extent possible. No definitive numbers can be provided because the variations are so many. This discussion attempts to address the possibilities only.

Staff Note: A correlative change was proposed to IEBC Chapters 7, 9, 10 and 11.

G237-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1007.1 #1-E-Boecker.doc

G238 – 12

3411.7 [IEBC [B] 410.7]

Proponent: Hope Reed, New Mexico Governor's Commission on Disability (hope.reed@state.nm.us)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Revise as follows:

3411.7 (IEBC [B] 410.7) Alterations affecting an area containing a primary function. Where an alteration affects the accessibility to, or contains an area of *primary function*, the route to the primary function area shall be *accessible*. The accessible route to the *primary function* area shall include toilet facilities ~~or~~ and drinking fountains serving the area of primary function.

Exceptions:

1. The costs of providing the *accessible* route are not required to exceed 20 percent of the costs of the *alterations* affecting the area of *primary function*.
2. This provision does not apply to *alterations* limited solely to windows, hardware, operating controls, electrical outlets and signs.
3. This provision does not apply to *alterations* limited solely to mechanical systems, electrical systems, installation or alteration of fire protection systems and abatement of hazardous materials.
4. This provision does not apply to *alterations* under taken for the primary purpose of increasing the accessibility of a *facility*.
5. This provision does not apply to altered areas limited to Type B dwelling and sleeping units.

Reason: See this same change for IEBC 310.7 and IEBC 605.2

Modify one word to comply with **2010 ADA** section 35.151(b)(4) Path of travel, and comply with **2010 ADA** section 36.403(a)(1) Path of travel.

People with disabilities need bathroom renovations and drinking fountain renovations along the "Path of Travel." When there is a choice, the easier solution is to change just the drinking fountains and look no further. The restroom renovations can be ignored. This does not benefit people with disabilities.

Those old restrooms need to be fixed and when full accessibility is not possible, some attempt at accessibility will provide a benefit to many. Widening the restroom door, installing a raised toilet, installing grab bars, and removing toilet partitions can be easy access renovations to comply with the intent of **2010 ADA**. Restroom and drinking fountain renovations need to be considered on an equal basis to comply with IBC 3411.6 where it states, "*alterations* shall provide access to the maximum extent that is technically feasible."

Cost Impact: The cost will not exceed 20% of the cost for the alteration as stated in IEBC 705.2 Exception 1. Renovations should include equal consideration of both restroom renovations and drinking fountain renovations.

The IEBC needs to help building code officials bring alteration projects closer to the 20% dollar amount. Restroom and drinking fountain renovations need to be considered on an equal basis to comply with IEBC 3411.6 where it states, "*alterations* shall provide access to the maximum extent that is technically feasible."

G238-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3411.7-G-REED

G239 – 12

3411.7, 3411.8 [IEBC [B] 410.7, 410.8]

Proponent: Tim Nogler, Washington State Building Code Council, representing Washington Association of Building Officials Technical Code Development Committee (tim.nogler@des.wa.gov)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Revise as follows:

3411.7 (IEBC [B] 410.7) Alterations affecting an area containing a primary function. Where an alteration affects the accessibility to, or contains an area of *primary function*, the route to the primary function area shall be *accessible*. The accessible route to the *primary function* area shall include toilet facilities or drinking fountains serving the area of primary function.

Exceptions:

1. The costs of providing the *accessible* route are not required to exceed 20 percent of the costs of the *alterations* affecting the area of *primary function*. Costs that shall be permitted to be counted as expenditures required to provide an accessible path of travel include costs associated with:
 - 1.1. Providing an accessible entrance and an accessible route to the altered area:
 - 1.2. Making restrooms accessible:
 - 1.3. Providing accessible telephones and
 - 1.4. Providing an accessible drinking fountain.
2. This provision does not apply to *alterations* limited solely to windows, hardware, operating controls, electrical outlets and signs.
3. This provision does not apply to *alterations* limited solely to mechanical systems, electrical systems, installation or alteration of fire protection systems and abatement of hazardous materials.
4. This provision does not apply to *alterations* under taken for the primary purpose of increasing the accessibility of a *facility*.
5. This provision does not apply to altered areas limited to Type B dwelling and sleeping units.

The costs of providing the alterations shall be based on the actual costs of the planned alteration to the area of primary function, not considering the costs of the accessible features.

3411.8 (IEBC [B] 410.8) Scoping for alterations. The provisions of Sections 3411.8.1 through 3411.8.14 shall apply to *alterations* to existing buildings and facilities.

Exception: The costs of providing the alterations in Sections 3411.8.1 and 3411.8.5 are not required to exceed 20 percent of the costs of the alterations. The costs of providing the alterations shall be based on the actual costs of the planned alteration to the area of primary function, not considering the costs of the accessible features.

Reason: The purpose of this code change is to provide clarity on how to calculate costs associated with the accessible route of travel, in order to determine if the 20 percent exception applies. This proposal also includes the 20 percent exception in the scoping for alterations, to address path of travel elements in the scoping section. We believe the intent of the 20 percent exception in the code is to prevent disproportionate costs for path of travel improvements. However, Sections 3411.8.1 and 3411.8.5 can trigger significant cost items (e.g., elevators or lifts). As written, these improvements to the path of travel are required, regardless of how much they cost in relation to the rest of the project. For example, one building official reported a case where an applicant wanted to add a stair in a ground floor restaurant on a steeply sloping site to connect two levels separated by 4 feet vertically. The plan was to cut a hole in a retaining wall and construct the stair on grade in the hole. This appeared to trigger a requirement for an elevator, since a ramp was infeasible in the space provided (Section 3411.8.4). However, the cost of the required elevator was many times the cost for installation of the stair. The elements of the accessible route to be included in the estimated cost should be specified in

the code. Costs that may be counted as expenditures to provide an accessible route of travel are taken from the 2010 ADA Standards for Accessible Design. Including this list in the code will make the IBC consistent with the ADA standard.

**2010 Standards: Title III
Subpart D of 28 CFR Part 36
Department of Justice**

(f) Disproportionality.

- (1) Alterations made to provide an accessible path of travel to the altered area will be deemed disproportionate to the overall alteration when the cost exceeds 20% of the cost of the alteration to the primary function area.
- (2) Costs that may be counted as expenditures required to provide an accessible path of travel may include:
 - (i) Costs associated with providing an accessible entrance and an accessible route to the altered area, for example, the cost of widening doorways or installing ramps;
 - (ii) Costs associated with making restrooms accessible, such as installing grab bars, enlarging toilet stalls, insulating pipes, or installing accessible faucet controls;
 - (iii) Costs associated with providing accessible telephones, such as relocating the telephone to an accessible height, installing amplification devices, or installing a text telephone (TTY).
 - (iv) Costs associated with relocating an inaccessible drinking fountain.

Cost Impact: The proposed changes will not increase the cost of construction.

G239-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3411.7-G-NOGLER.doc

G240 – 12

3411.7.1 (NEW) [IEBC [B] 410.7.1 (NEW)]

Proponent: Gene Boecker, AIA, Code Consultants, Inc, representing himself

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Add new text as follows:

3411.7 (IEBC [B] 410.7) Alterations affecting an area containing a primary function. Where an alteration affects the accessibility to, or contains an area of primary function, the route to the primary function area shall be accessible. The accessible route to the primary function area shall include toilet facilities or drinking fountains serving the area of primary function.

Exceptions:

1. The costs of providing the accessible route are not required to exceed 20 percent of the costs of the alterations affecting the area of primary function.
2. This provision does not apply to alterations limited solely to windows, hardware, operating controls, electrical outlets and signs.
3. This provision does not apply to alterations limited solely to mechanical systems, electrical systems, installation or alteration of fire protection systems and abatement of hazardous materials.
4. This provision does not apply to alterations undertaken for the primary purpose of increasing the accessibility of an existing building, facility or element.
5. This provision does not apply to altered areas limited to Type B dwelling and sleeping units.

3411.7.1 (IEBC [B] 410.7.1) Priorities. In choosing which accessible elements to provide, subject to exception #1 above, priority should be given to those elements that will provide the greatest access, in the following order:

1. An accessible entrance;
2. An accessible route to the altered area;
3. At least one accessible restroom for each sex or a single unisex restroom;
4. Accessible telephones;
5. Accessible drinking fountains; and
6. When possible, additional accessible elements such as parking, storage, and alarms.

Reason: The recent adoption of the 2010 ADA Standards for Accessible Design includes the list of priorities noted in the proposal where disproportionate cost is an issue (Subpart D of 28 CFR Section 36.403(g)(2)). Disproportionate cost is what is described in exception #1 for all of the main sections noted above.

This proposal is to coordinate with the Federal Standard. It makes sense to provide this information to the Design Professional to help in prioritizing efforts and helps the Code Official in reviewing and inspecting to verify that the most important elements are provided.

Cost Impact: This code change will not increase the cost of construction.

Staff Note: A correlative change was proposed to IEBC Section 705.2 to add a new section 705.2.1.

G240-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3411.7.1-G-Boecker.doc

G241 – 12

3411.8.4 [IEBC [B] 410.8.4]

Proponent: Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee (CTC)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Revise as follows:

3411.8.4 (IEBC [B] 410.8.4) Stairs and escalators in existing buildings. In *alterations*, change of occupancy or *additions* where an escalator or *stair* is added where none existed previously and major structural modifications are necessary for installation, an *accessible* route shall be provided between the levels served by the escalator or *stairs* in accordance with ~~Sections~~ Section 1104.4 and 1104.5.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

The intent of this provisions is that the accessible route will be permitted to be provided in the same area as the new construction, and is not require it to be located elsewhere in the building. A reference to Section 1104.5 could require the accessible route to be provided in another part of the building is the new stairway was not on a general circulation route. A correlative change has been proposed to IEBC, Section 806.2.

Cost Impact: The proposed changes will not increase the cost of construction.

G241-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3411.8.4-G-BALDASSARRA-CTC.doc

G242 – 12

3411.8.6 (IEBC [B] 410.8.6)

Proponent: Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee (CTC)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Delete without substitution:

~~**3411.8.6 (IEBC [B] 410.8.6) Performance areas.** Where it is *technically infeasible* to alter performance areas to be on an *accessible* route, at least one of each type of performance area shall be made *accessible*.~~

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

Existing performance areas not addressed in ADA/ABA (see ADA 206.2.6). The exception for performance area does not make a lot of sense because there are typically not multiple performance areas of the same type. If access to the stage or pit is technically infeasible, how would you do even one? We suggest deletion of IBC 3411.8.6 and IEBC 705.1.6

Cost Impact: The proposed changes will not increase the cost of construction.

G242-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3411.8.6-G-BALDASSARRA-CTC.doc

G243 – 12

3411.8.11 (IEBC [B] 410.8.11)

Proponent: Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee (CTC)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Revise as follows:

3411.8.11 (IEBC [B] 410.8.11) Toilet rooms. Where it is *technically infeasible* to alter existing toilet and bathing rooms to be *accessible*, an *accessible* family or assisted-use toilet or bathing room constructed in accordance with Section 1109.2.1 is permitted. The family or assisted-use toilet or bathing room shall be located on the same floor and in the same area as the existing toilet or bathing rooms. At the inaccessible toilet and bathing rooms, provide directional signs indicating the location of the nearest family or assisted-use toilet room or bathing room shall be provided. These directional signs shall include the International Symbol of Accessibility and sign characters shall meet the visual character requirements in accordance with ICC A117.1.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

This proposal will coordinate with ADA 216.8. The intent of this proposal is to add directional signage requirements for family/assisted-use bathrooms when the existing bathrooms are not fully accessible. The same proposal is being made to IBC Section IEBC 705.10.

Cost Impact: The proposed changes will not increase the cost of construction.

G243-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3411.8.11-G-BALDASSARRA-CTC.doc

G244 – 12

3412 (IEBC [B] Chapter 14)

Proponent: David S. Collins, The Preview Group, Inc., representing the American Institute of Architects (dcollins@preview-group.com); Michael A. Crowley, P.E., FSFPE, RJA Group (mcrowley@rjagroup.com)

Revise as follows:

3412.2 (IFC [B] 1401.2) Applicability. Structures existing prior to [DATE TO BE INSERTED BY THE JURISDICTION. NOTE: IT IS RECOMMENDED THAT THIS DATE COINCIDE WITH THE EFFECTIVE DATE OF BUILDING CODES WITHIN THE JURISDICTION], in which there is work involving *additions, alterations* or changes of occupancy shall be made to comply with the requirements of this section or the provisions of Sections 3403 through 3409. The provisions in Sections 3412.2.1 through 3412.2.5 shall apply to existing occupancies that will continue to be, or are proposed to be, in Groups A, B, E, F, I-2, M, R, S and U. These provisions shall not apply to buildings with occupancies in Group H or ~~± I-1, I-3 or I-4.~~

3412.6 (IFC [B] 1401.6) Evaluation process. The evaluation process specified herein shall be followed in its entirety to evaluate existing buildings in Groups A, B, E, F, M, R, S and U. For existing buildings in Group I-2, the evaluation process specified herein shall be followed and applied to each and every individual smoke compartment. Table 3412.7 shall be utilized for tabulating the results of the evaluation. References to other sections of this code indicate that compliance with those sections is required in order to gain credit in the evaluation herein outlined. In applying this section to a building with mixed occupancies, where the separation between the mixed occupancies does not qualify for any category indicated in Section 3412.6.16, the score for each occupancy shall be determined and the lower score determined for each section of the evaluation process shall apply to the entire building, or to each smoke compartment for Group I-2 occupancies.

Where the separation between mixed occupancies qualifies for any category indicated in Section 3412.6.16, the score for each occupancy shall apply to each portion, or smoke compartment of the building based on the occupancy of the space.

3412.6.2 (IFC [B] 1401.6.2) Building area. The value for building area shall be determined by the formula in Section 3412.6.2.2. Section 503 and the formula in Section 3412.6.2.1 shall be used to determine the allowable area of the building. This shall include any allowable increases due to frontage and automatic sprinklers as provided for in Section 506. Subtract the actual *building area* in square feet from the allowable area and divide by 1,200 square feet. Enter the area value and its sign (positive or negative) in Table 3412.7 under Safety Parameter 3412.6.2, Building Area, for fire safety, means of egress and general safety. In determining the area value, the maximum permitted positive value for area is 50 percent of the fire safety score as *listed* in Table 3412.8, Mandatory Safety Scores. Group I-2 occupancies shall be scored zero.

3412.6.4 (IFC [B] 1401.6.4) Tenant and dwelling unit separations. Evaluate the *fire-resistance rating* of floors and walls separating tenants, including *dwelling units*, and not evaluated under Sections 3412.6.3 and 3412.6.5. Group I-2 occupancies shall evaluate the rating of the separations between patient sleeping rooms.

Under the categories and occupancies in Table 3412.6.4, determine the appropriate value and enter that value in Table 3412.7 under Safety Parameter 3412.6.4, Tenant and Dwelling Unit Separations, for fire safety, means of egress and general safety.

**TABLE 3412.6.4 (IFC [B] TABLE 1401.6.4)
SEPARATION VALUES**

OCCUPANCY	CATEGORIES				
	a	b	c	d	e
A-1	0	0	0	0	1
I-2	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>

(Portions of table not shown remain unchanged)

3412.6.5 (IFC [B] 1401.6.5) Corridor walls. Evaluate the *fire-resistance rating* and degree of completeness of walls which create *corridors* serving the floor, and constructed in accordance with Section 1018. This evaluation shall not include the wall elements considered under Sections 3412.6.3 and 3412.6.4. Under the categories and groups in Table 3412.6.5, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.5, Corridor Walls, for fire safety, means of egress and general safety.

**TABLE 3412.6.5 (IFC [B] TABLE 1401.6.5)
CORRIDOR WALL VALUES**

OCCUPANCY	CATEGORIES			
	a	b	c ^a	d ^a
A-1	-10	-4	0	2
I-2	<u>-10</u>	<u>0</u>	<u>1</u>	<u>2</u>

(Portions of table not shown remain unchanged)

3412.6.7 (IFC [B] 1401.6.7) HVAC systems. Evaluate the ability of the HVAC system to resist the movement of smoke and fire beyond the point of origin. Under the categories in Section 3412.6.7.1, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.7, HVAC Systems, for fire safety, means of egress and general safety. Facilities in Group I-2 occupancies meeting Categories a, b or c shall be considered to fail the evaluation.

3412.6.8 (IFC [B] 1401.6.8) Automatic fire detection. Evaluate the smoke detection capability based on the location and operation of *automatic fire detectors* in accordance with Section 907 and the *International Mechanical Code*. Under the categories and occupancies in Table 3412.6.8, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.8, Automatic Fire Detection, for fire safety, means of egress and general safety. Facilities in Group I-2 occupancies meeting Categories a, b or c shall be considered to fail the evaluation.

**TABLE 3412.6.8 (IFC [B] TABLE 1401.6.8)
AUTOMATIC FIRE DETECTION VALUES**

OCCUPANCY	CATEGORIES					
	a	b	c	d	e	f
A-1, A-3, F, M, R, S-1	-10	-5	0	2	6	-
A-2	-25	-5	0	5	9	-
A-4,B,E,S-2	-4	-2	0	4	8	-
I-2	<u>NP</u>	<u>NP</u>	<u>0</u>	<u>4</u>	<u>5</u>	<u>2</u>

3412.6.8.1 (IFC [B] 1401.6.8.1) Categories. The categories for automatic fire detection are:

1. Category a—None.
2. Category b—Existing *smoke detectors* in HVAC systems and maintained in accordance with the *International Fire Code*.
3. Category c—*Smoke detectors* in HVAC systems. The detectors are installed in accordance with the requirements for new buildings in the *International Mechanical Code*.
4. Category d—*Smoke detectors* throughout all floor areas other than individual *sleeping units*, tenant spaces and *dwelling units*.
5. Category e—*Smoke detectors* installed throughout the floor area.

6. Category f – Smoke detectors in corridors only.

3412.6.9 (IFC [B] 1401.6.9) Fire alarm systems. Evaluate the capability of the *fire alarm system* in accordance with Section 907. Under the categories and occupancies in Table 3412.6.9, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.9, Fire Alarm Systems, for fire safety, means of egress and general safety.

**TABLE 3412.6.9 (IFC [B] TABLE 1401.6.9)
FIRE ALARM SYSTEM VALUES**

OCCUPANCY	CATEGORIES			
	a	b ^a	c	d
A-1, A-2, A-3, A-4, B, E, R	-10	-5	0	5
F, M, S	0	5	10	15
I-2	-4	1	2	5

a. For buildings equipped throughout with an automatic sprinkler system, add 2 points for activation by a sprinkler water flow device.

3412.6.10 (IFC [B] 1401.6.10) Smoke control. Evaluate the ability of a natural or mechanical venting, exhaust or pressurization system to control the movement of smoke from a fire. Under the categories and occupancies in Table 3412.6.10, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.10, Smoke Control, for means of egress and general safety.

**TABLE 3412.6.10 (IFC [B] TABLE 1401.6.10)
SMOKE CONTROL VALUES**

OCCUPANCY	CATEGORIES					
	a	b	c	d	e	f
A-1, A-2, A-3	0	1	2	3	6	6
A-4, E	0	0	0	1	3	5
B, M, R	0	2(a)	3(a)	3(a)	3(a)	4(a)
F, S	0	2(a)	2(a)	3(a)	3(a)	3(a)
I-2	-4	0	0	0	3	0

a. This value shall be 0 if compliance with Category d or e in Section 3412.6.8.1 has not been obtained.

3412.6.11 (IFC [B] 1401.6.11) Means of egress capacity and number. Evaluate the *means of egress* capacity and the number of exits available to the building occupants. In applying this section, the *means of egress* are required to conform to the following sections of this code: 1003.7, 1004, 1005, 1014.2, 1014.3, 1015.2, 1021, 1024.1, 1027.2, 1027.5, 1028.2, 1028.3, 1028.4 and 1029. The number of exits credited is the number that is available to each occupant of the area being evaluated. Existing fire escapes shall be accepted as a component in the *means of egress* when conforming to Section 3406.

Under the categories and occupancies in Table 3412.6.11, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.11, Means of Egress Capacity, for means of egress and general safety.

**TABLE 3412.6.11 (IFC [B] TABLE 1401.6.11)
MEANS OF EGRESS VALUES**

OCCUPANCY	CATEGORIES				
	a ^a	b	c	d	e
A-1, A-2, A-3, A-4, E	-10	0	2	8	10
M	-3	0	1	2	4
B, F, S	-1	0	0	0	0
R	-3	0	0	0	0
I-2	-10	0	2	8	10

a. The values indicated are for buildings six stories or less in height. For buildings over six stories above grade plane, add an additional -10 points.

3412.6.12 (IFC [B] 1401.6.12) Dead ends. In spaces required to be served by more than one *means of egress*, evaluate the length of the *exit* access travel path in which the building occupants are confined to a single path of travel. Under the categories and occupancies in Table 3412.6.12, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.12, Dead Ends, for means of egress and general safety.

**TABLE 3412.6.12 (IFC [B] TABLE 1401.6.12)
DEAD-END VALUES**

OCCUPANCY	CATEGORIES			
	a	b	c	d
A-1, A-3, A-4, B, E, F, M, R, S	-2	0	2	-
A-2, E	-2	0	2	-
<u>I-2</u>	<u>-2</u>	<u>0</u>	<u>2</u>	<u>-6</u>

a. For dead-end distances between categories, the dead-end value shall be obtained by linear interpolation.

3412.6.12.1 (IFC [B] 1401.6.12.1) Categories. The categories for dead ends are:

1. Category a—Dead end of 35 feet (10 670 mm) in nonsprinklered buildings or 70 feet (21 340 mm) in sprinklered buildings.
2. Category b—Dead end of 20 feet (6096 mm); or 50 feet (15 240 mm) in Group B in accordance with Section 1018.4, exception 2.
3. Category c—No dead ends; or ratio of length to width (l/w) is less than 2.5:1.
4. Category d – Dead ends exceeding Category a.

3412.6.16 (IFC [B] 1401.6.16) Mixed occupancies. Where a building has two or more occupancies that are not in the same occupancy classification, the separation between the mixed occupancies shall be evaluated in accordance with this section. Where there is no separation between the mixed occupancies or the separation between mixed occupancies does not qualify for any of the categories indicated in Section 3412.6.16.1, the building shall be evaluated as indicated in Section 3412.6 and the value for mixed occupancies shall be zero. Under the categories and occupancies in Table 3412.6.16, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.16, Mixed Occupancies, for fire safety and general safety. For buildings without mixed occupancies, the value shall be zero.

3412.6.16.1 (IFC [B] 1401.6.16.1) Categories. The categories for mixed occupancies are:

1. Category a—Occupancies separated by minimum 1-hour *fire barriers* or minimum 1-hour *horizontal assemblies*, or both.
2. Category b—Separations between occupancies in accordance with Section 508.4.
3. Category c—Separations between occupancies having a *fire-resistance rating* of not less than twice that required by Section 508.4.4.

**TABLE 3412.6.16 (IFC [B] TABLE 1401.6.16)
MIXED OCCUPANCY VALUES^a**

OCCUPANCY	CATEGORIES		
	a	b	c
A-1, A-2, R	-10	0	10
A-3, A-4, B, E, F, M, S	-5	0	5
<u>I-2</u>	<u>NP</u>	<u>0</u>	<u>5</u>

a. For fire-resistance ratings between categories, the value shall be obtained by linear interpolation.

3412.6.17 (IFC [B] 1401.6.17) Automatic sprinklers. Evaluate the ability to suppress a fire based on the installation of an *automatic sprinkler system* in accordance with Section 903.3.1.1. "Required sprinklers" shall be based on the requirements of this code. Under the categories and occupancies in Table 3412.6.17, determine the appropriate value and enter that value into Table 3412.7 under Safety

Parameter 3412.6.17, Automatic Sprinklers, for fire safety, means of egress divided by 2 and general safety.

**TABLE 3412.6.17 (IFC [B] TABLE 1401.6.17)
SPRINKLER SYSTEM VALUES**

OCCUPANCY	CATEGORIES					
	a	b	c	d	e	f
A-1, A-3, F, M, R, S-1	-6	-3	0	2	4	6
A-2	-4	-2	0	1	2	4
A-4, B, E, S-2	-12	-6	0	3	6	12
I-2	NP	NP	NP	8	10	NA

NP not permitted
NA not applicable

3412.6.18 (IFC [B] 1401.6.18) Standpipes. Evaluate the ability to initiate attack on a fire by making a supply of water available readily through the installation of standpipes in accordance with Section 905. Required standpipes shall be based on the requirements of this code. Under the categories and occupancies in Table 3412.6.18, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.18, Standpipes, for fire safety, means of egress and general safety.

**TABLE 3412.6.18 (IFC [B] TABLE 1401.6.18)
STANDPIPE SYSTEM VALUES**

OCCUPANCY	CATEGORIES			
	a ^a	b	c	d
A-1, A-3, F, M, R, S-1	-6	0	4	6
A-2	-4	0	2	4
A-4, B, E, S-2	-12	0	6	12
I-2	-2	0	1	2

a. This option cannot be taken if Category a or b in Section 3412.6.17 is used.

3412.6.20 (IFC [B] 1401.6.20) Smoke Compartmentation. Evaluate the smoke compartments for compliance with Section 417.5. Using Table 3412.6.20, determine the appropriate smoke compartmentation value (SCV) and enter that value into Table 3412.7 under Safety Parameter 3412.6.20, Smoke Compartmentation, for fire safety, means of egress and general safety.

**TABLE 3412.6.20 (IFC [B] TABLE 1401.6.20)
SMOKE COMPARTMENTATION VALUES**

OCCUPANCY	CATEGORIES ^a		
	a Compartment size equal to or less than 22,500 square feet	b Compartment size greater than 22,500 square feet	c No smoke Compartment
A, B, E, F, M, R and S	0	0	0
I-2	0	NP	NP

For SI: 1 square foot = 0.093 m².

a. For areas between categories, the smoke compartmentation value shall be obtained by linear interpolation.

3412.6.21 (IFC [B] 1401.6.21) Patient ability, concentration, smoke compartment location and ratio to attendant. In I-2 occupancies, the ability of patients, their concentration and ratio to attendants shall be evaluated and applied per this section. Evaluate each smoke compartment using the categories in Sections 3412.6.21.1, 3412.6.21.2 and 3412.6.21.3 and enter the value in Table 3412.8. To determine the safety factor, multiply the three values together, if the sum is 9 or greater, compliance has failed.

3412.6.21.1 (IFC [B] 1401.6.21.1) Patient ability for self-preservation. Evaluate the ability of the patients for self-preservation in each smoke compartment in an emergency. Under the categories and occupancies in Table 3412.6.21.1 determine the appropriate value and enter that value in Table 3412.7

under Safety Parameter 3412.6.21.1, Patient Ability for Self-Preservation, for means of egress and general safety.

3412.6.21.1.1 (IFC [B] 1401.6.21.1.1) Categories: The categories for patient ability for self-preservation are:

1. Category a – (mobile) Patients are capable of self preservation without assistance.
3. Category c – (not mobile) Patients rely on assistance for evacuation or relocation.
4. Category d – (not movable) Patients cannot be evacuated or relocated

**TABLE 3412.6.21.1 (IFC [B] TABLE 1401.6.21.1)
PATIENT ABILITY VALUES**

<u>OCCUPANCY</u>	<u>CATEGORIES</u>		
	<u>a</u>	<u>b</u>	<u>c</u>
<u>I-2</u>	<u>1</u>	<u>2</u>	<u>3</u>

3412.6.21.2 (IFC [B] 1401.6.21.2) Patient Concentration. Evaluate the concentration of patients in each smoke compartment under Section 3412.6.21.2. Under the categories and occupancies in Table 3412.6.21.2 determine the appropriate value and enter that value in Table 3412.7 under Safety Parameter 3412.6.21.2, Patient Concentration, for means of egress and general safety.

3412.6.21.2.1 (IFC [B] 1401.6.21.2.1) Categories: The categories for patient concentration are:

1. Category a – smoke compartment has 1 to 10 patients.
2. Category b – smoke compartment has more than 10 to 40 patients
3. Category d – smoke compartment has greater than 40 patients

**TABLE 3412.6.21.2 (IFC [B] TABLE 1401.6.21.2)
PATIENT CONCENTRATION VALUES**

<u>OCCUPANCY</u>	<u>CATEGORIES</u>		
	<u>a</u>	<u>b</u>	<u>c</u>
<u>I-2</u>	<u>1</u>	<u>2</u>	<u>3</u>

3412.6.21.3 (IFC [B] 1401.6.21.3) Attendant-to-Patient Ratio. Evaluate the attendant-to-patient ratio for each compartment under Section 3412.6.21.3. Under the categories and occupancies in Table 3412.6.21.3 determine the appropriate value and enter that value in Table 3412.7 under Safety Parameter 3412.6.21.3, Attendant-to-Patient Ratio, for means of egress and general safety.

3412.6.21.3.1 (IFC [B] 1401.6.21.3.1) Categories: The categories for attendant-to-patient concentrations are:

1. Category a – attendant-to-patient concentrations is 1:5.
3. Category b – attendant-to-patient concentrations is 1:6 to 1:10.
4. Category c – attendant-to-patient concentrations is greater than 1:10 or no patients

**TABLE 3412.6.21.3 (IFC [B] 1401.6.21.3)
ATTENDANT-TO-PATIENT RATIO VALUES**

<u>OCCUPANCY</u>	<u>CATEGORIES</u>		
	<u>a</u>	<u>b</u>	<u>c</u>
<u>I-2</u>	<u>1</u>	<u>2</u>	<u>3</u>

**TABLE 3412.7 (IFC [B] 1401.7)
SUMMARY SHEET – BUILDING CODE**

Existing occupancy	_____
Proposed occupancy	_____
Year building was constructed	_____
Number of stories	_____
Height in feet	_____
Type of construction	_____
Area per floor	_____
Percentage of open perimeter increase	_____ %
Completely suppressed:	Yes _____ No _____
<u>Type</u>	_____
Corridor wall rating	_____
Compartmentation:	Yes _____ No _____
Required door closers:	Yes _____ No _____
Fire-resistance rating of vertical opening enclosures	_____
Type of HVAC system:	_____
Serving number of floors	_____
Automatic fire detection:	Yes _____ No _____
Type and location	_____
Fire alarm system:	Yes _____ No _____
Type	_____
Smoke control:	Yes _____ No _____
Type	_____
Adequate exit routes:	Yes _____ No _____
Dead ends:	Yes _____ No _____
Maximum exit access travel distance	_____
Elevator controls:	Yes _____ No _____
Means of egress emergency lighting:	Yes _____ No _____
Mixed occupancies:	Yes _____ No _____
<u>Standpipes:</u>	Yes _____ No _____
<u>Incidental Use:</u>	Yes _____ No _____
<u>Smoke Compartmentation less than 22,500</u>	Yes _____ No _____
<u>Patient Ability for Self-preservation:</u>	_____
<u>Patient Concentration:</u>	_____
<u>Attendant-to-Patient Ratio:</u>	_____

3412.8 (IFC [B] 1401.8) Safety scores. The values in Table 3412.8 are the required mandatory safety scores for the evaluation process listed in Section 3412.6.

**TABLE 3412.8 (IFC [B] 1401.8)
MANDATORY SAFETY SCORES^a**

OCCUPANCY	FIRE SAFETY (MFS)	MEANS OF EGRESS (MME)	GENERAL SAFETY (MGS)
<u>I-2</u>	<u>19</u>	<u>34</u>	<u>34</u>

a.

- MFS = Mandatory Fire Safety;
- MME = Mandatory Means of Egress;
- MGS = Mandatory General Safety.

(Portions of table not shown remain unchanged)

Reason: When initially developed, Chapter 34 did not include provisions for I-2 or H occupancies. The rationale was that the life safety system developed by NFPA was adequate for those I-2 occupancies and H occupancies were not likely to be a part of a building renovation, nor were the drafters of the original code change comfortable with development of values for an H occupancy.

Recently, ICC and ASHE have begun working together to develop changes to the IBC to remove some of the conflicts that exist between the I-Codes and the licensing and funding standards used for hospitals. Part of that effort included discussion of the process for evaluation of an existing I-2. A small group of volunteers has developed this code change to incorporate I-2 into Chapter 34's compliance alternatives.

The ongoing issue is how to identify the appropriate levels of performance and how to integrate the criteria in in Chapter 34. The following is an approach identified by the volunteers demonstrating how this can best be achieved. The original Chapter 34 used "risk factors" as an element of the analysis. Chapter 34 was developed using risk factors that formed the basis for development of the BOCA building code and the criteria in NYC Local Law 5 for high-rise business occupancies. Other occupancies were extrapolated using those numbers.

When the IBC was developed a "zero based" revision was undertaken to establish compliance as a zero in all categories of compliance in Chapter 34's compliance alternatives. Values have been inserted into the categories where Chapter 34 is silent. Additional text has been developed to describe how these categories will be satisfied and some categories have been added to address specific elements of an existing I-2 occupancy which should play a role in achieving compliance.

Because the building is an existing I-2, elements that would not be known in a new building such as the ability of the patients or the number of persons providing care are documented as part of the ongoing licensing for these facilities. (WHAT DO WE DO ABOUT CHANGE OF OCCUPANCY?)

Evaluations were performed on several existing buildings to determine the appropriateness of the scoring. Areas of evaluation which would be untenable for typical patients and other persons in an I-2 occupancy were found and successful changes to upgrade the facility were identified, although not all would pass.

Cost Impact: The increased utility of Chapter 34 to address an I-2 occupancy will significantly reduce the cost of design and review.

G244-12

Public Hearing: Committee: AS AM D
 Assembly: ASF AMF DF

3412.2-G-COLLINS-CROWLEY.doc

G245 – 12

3412.2.5 (IEBC [B] 1401.2.5)

Proponent: Carl Baldassarra, P.E., FSFPE Chair, ICC Code Technology Committee (CTC)

THIS PROPOSAL IS ON THE AGENDA OF THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THE IBC MEANS OF EGRESS CODE DEVELOPMENT COMMITTEE.

Revise as follows:

3412.2.5 (IEBC [B] 1401.2.5) Accessibility requirements. ~~All portions of the buildings proposed for change of occupancy shall conform to the accessibility provisions of Section 3411.~~ Accessibility shall be provided in accordance with Section 3411 (IEBC [B] 410 or 605).

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as “areas of study”. Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: <http://www.iccsafe.org/cs/cc/ctc/index.html>. Since its inception in April, 2005, the CTC has held twenty-two meetings – all open to the public.

All existing buildings using the performance compliance alternative should meet the accessibility provisions for existing building, not just those undergoing a change of occupancy.

Cost Impact: The proposed changes will not increase the cost of construction.

G245-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

3412.2.5-G-BALDASSARRA-CTC.doc

G246 – 12

3412.3.2, Table 3412.3.2 (NEW) [IEBC [B] 1401.3.2, Table 1401.3.2 (NEW)]

Proponent: Al Godwin, CBO, CPM, Aon Fire Protection Engineering (al.godwin@aon.com)

Revise as follows:

3412.3.2 (IEBC [B] 1401.3.2) Compliance with other codes. Buildings that are evaluated in accordance with this section shall comply with the *International Fire Code* and the *International Property Maintenance Code*.

When required in the *International Fire Code*, Chapter 11, once identified as deficient, the following sections shall be brought into compliance with the applicable section of that code as specified in Table 3412.3.2.

Table 3412.3.2 (IEBC [B] 1401.3.2)

<u>Applicable Section/Title</u>	<u>International Fire Code, Chapter 11, Construction requirements for existing buildings</u>
<u>3412.6.5 – Corridor walls</u>	<u>See Section 1104.17</u>
<u>3412.6.6 – Vertical openings</u>	<u>See Section 1103.4</u>
<u>3412.6.8 – Automatic fire detection</u>	<u>See Sections 1103.7, 1103.8 and 1103.9</u>
<u>3412.6.9 – Fire alarm systems</u>	<u>See Sections 1103.7, 1103.8 and 1103.9</u>
<u>3412.6.12 – Dead ends</u>	<u>See Section 1104.17.2</u>
<u>3412.6.13 – Maximum exit access travel distance</u>	<u>See Section 1104.18</u>
<u>3412.6.14 – Elevator control</u>	<u>See Section 1103.3</u>
<u>3412.6.15 – Means of egress emergency lighting</u>	<u>See Sections 1104.3, 1104.4 and 1104.5</u>
<u>3412.6.17 – Automatic sprinklers</u>	<u>See Section 1103.5</u>
<u>3412.6.18 – Standpipes</u>	<u>See Section 1103.6</u>

Reason: IBC Section 3412.3.2 (IEBC Section 1401.3.2) state “Buildings that are evaluated in accordance with this section shall comply with the *International Fire Code* and the *International Property Maintenance Code*.” However, when comparing these provisions with the IFC, there are sections that do not comply.

The commentary for dead end corridors actually states “These distances correspond to the dead-end lengths listed in the IFC” Yet IFC Table 1104.17.2 has no 70’ allowable dead end corridor and very few that are allowed 35’. Therefore, it is possible that correlation between this section and the IFC has become outdated and misleading.

Some of the provisions are in conflict with the IFC Chapter 11. Once these discrepancies are identified in a building review, it would seem appropriate that those items be corrected and brought to the minimum required standards, if IFC Chapter 11 is applicable.

In order to insure that a building is not approved under this chapter, but also be found in violation of the Fire Code, a more direct link would seem appropriate to prevent confusion and/or errors from happening.

Cost Impact: This code change will not increase the cost of construction since the provisions already exist and are applicable if the Fire Code is adopted.

G246-12

Public Hearing: Committee: AS AM D
Assembly: ASF AMF DF

3412.3.2-G-GODWIN

G247 – 12

Table 3412.6.19 [IEBC Table 1401.6.19]

Proponent: Charles S. Bajnai, Chesterfield County, VA, ICC Building Code Action Committee (BCAC)

Revise as follows:

**TABLE 3412.6.19 (IEBC [B] Table 1401.6.19)
INCIDENTAL USE AREA VALUES^a**

PROTECTION REQUIRED BY TABLE 509	PROTECTION PROVIDED						
	None	1 Hour	AS	AS with <u>SP-CRS</u>	1 Hour and AS	2 Hours	2 Hours and AS
2 Hours and AS	-4	-3	-2	-2	-1	-2	0
2 Hours, or 1 Hour and AS	-3	-2	-1	-1	0	0	0
1 Hour and AS	-3	-2	-1	-1	0	-1	0
1 Hour	-1	0	-1	0	0	0	0
1 Hour, or AS with <u>SP-CRS</u>	-1	0	-1	0	0	0	0
AS with <u>SP-CRS</u>	-1	-1	-1	0	0	-1	0
1 Hour or AS	-1	0	0	0	0	0	0

a. AS = Automatic sprinkler system; SP-CRS = Smoke partitions Construction capable of resisting the passage of smoke (See Section 509.4.2).

Reason: This code proposal makes no changes to the current requirements in the Code. This proposal is intended to be editorial and clarify the existing provisions in Table 3412.6.19.

Editorial revisions are made as follows:

1. The reference in the 1st Column Heading in this Table – the reference should be to Table 509 in the 2012 IBC, not to Table 508.2.5, which was the old location in the 2009 IBC.
2. The section reference in Footnote ‘a’ – the reference should be to “See IBC Section 509.4.2” in the 2012 IBC. Again, Section 508.2.5 was the old location in the 2009 IBC.

The use of “SP”, and the reference to “smoke partitions” in three locations is proposed to be revised to correlate with the current requirements in IBC Section 509.4.2. The text in Section 3412.6.19 refers to protection of incidental uses in accordance with Section 509.4.2. Section 509.4.2 does not require smoke partitions. Section 509.4.2 requires separation by construction capable of resisting the passage of smoke. To be consistent with the requirements in Section 509.4.2, and so as not to create confusion with smoke partition requirements in Section 710, the proposed revision will replace the term “SP” (smoke partition), with the term “CRS” (capable of resisting the passage of smoke). This proposal clarifies that the construction needs to be capable of resisting the passage of smoke rather than be constructed as a smoke partition.

The revisions are made in IBC Table 3412.6.19 and the duplicate table in the IEBC.

Cost Impact: The code change proposal will not increase the cost of construction.

G247-12

Public Hearing: Committee: AS AM D
 Assembly: ASF AMF DF

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G248 – 12

H106.1, Chapter 35 (NEW)

Proponent: Bob Eugene, Underwriters Laboratories (robert.eugene@ul.com)

Revise as follows:

H106.1 Illumination. A sign shall not be illuminated by other than electrical means, and electrical devices and wiring shall be installed in accordance with the requirements of NFPA 70. Any open spark or flame shall not be used for display purposes unless specifically approved. Electric signs shall be listed and labeled in accordance with UL 48.

Exception: Exit signs installed in accordance with Section 1011.

Add new standard to Chapter 35 as follows:

UL
UL 48-2011 Electric Signs

Reason: None .UL 48 is the ANSI approved standard for electric signs. Although NFPA 70 Section 600-3 requires listing, it does not specify the applicable standard within the mandatory provisions of the code. Electrically supplied exit signs are listed in accordance with UL 924.

Cost Impact: The proposed changes will not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, UL 48-2011 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2012.

G248-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

H106.1-G-EUGENE.doc

G249 – 12

H106.1.1

Proponent: Richard Crawford, Mercer Sign Consultants, representing United States Sign Council (rcmercer@verizon.net) or (rick@ussc.org)

Revise as follows:

H106.1.1 Internally illuminated signs. Except as provided for in Sections 402.16 and 2611, where internally illuminated signs have facings of wood or approved plastic, the area of such facing section shall not be more than ~~420~~ 200 square feet (~~41.16 m²~~) (18.58m²) and the wiring for electric lighting shall be entirely enclosed in the sign cabinet with a clearance of not less than 2 inches (51 mm) from the facing material. The dimensional limitation of ~~420~~ 200 square feet (~~41.16 m²~~) (18.58m²) shall not apply to sign facing sections made from flame-resistant-coated fabric (ordinarily known as “flexible sign face plastic”) that weighs less than 20 ounces per square yard (678 g/m²) and that, when tested in accordance with NFPA 701, meets the fire propagation performance requirements of both Test 1 and Test 2 or that when tested in accordance with an approved test method, exhibits an average burn time of 2 seconds or less and a burning extent of 5.9 inches (150 mm) or less for 10 specimens.

Reason: Internally illuminated signs are safely and professionally installed at over 120 SF on a regular basis, and any potential construction issues are routinely addressed by proper engineering and fabrication techniques. Many existing internally illuminated sign installations would not comply with this Appendix Section, though they are safe and competently designed and installed. The value originally inserted in the Appendix H 106.1.1 was arbitrary and was not supported by direct research or practical sign fabrication experience. This adjustment will permit continuing reasonable internally illuminated sign sizes. In addition, so-called flexible sign faces present advantages in large installations, but can present other issues in terms of security, repairs and maintenance.

Cost Impact: The code change proposal will not increase the cost of construction.

G249-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

H106.1.1-G-CRAWFORD.doc

G250 – 12

H109.2

Proponent: Richard Crawford, Mercer Sign Consultants, representing United States Sign Council (rcmercer@verizon.net) or (rick@ussc.org)

Delete without substitution as follows:

~~**H109.2 Required clearance.** The bottom coping of every ground sign shall be not less than 3 feet (914 mm) above the ground or street level, which space can be filled with platform decorative trim or light wooden construction.~~

(Renumber subsequent sections)

Reason: The height above grade established by this provision creates extreme complications and hardships in dealing with ground sign size, sign area, and overall ground sign height. Since the original adoption of Appendix H, many jurisdictions have gone on to implement ground sign height restrictions at 5'-0" to 6'-0" above grade maximum. The copy or communication or identification on these ground signs therefore must be placed lower than 3'-0" above grade by necessity, and by operation of local code. These practical considerations conflict with Section 109.2. It is not anticipated that jurisdictions will be amending their sign codes to allow reasonable implementation of Section 109.2 at any time in the near future. Therefore, H 109.2 should be deleted as it is in opposition to countless zoning and building codes related to ground signs across the country.

Cost Impact: The code change proposal will not increase the cost of construction.

G250-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

H109.2-G-CRAWFORD.doc

G251 – 12

H111.1

Proponent: Richard Crawford, Mercer Sign Consultants, representing United States Sign Council (rcmercer@verizon.net) or (rick@ussc.org)

Revise as follows:

H111.1 Materials. Wall signs which have an area exceeding 40 100 square feet (~~3.72 m²~~) (9.29 m²) shall be constructed of metal or other approved noncombustible material, except for nailing rails and as provided for in Sections H106.1.1 and H107.1.

Reason: Wall signs are safely and professionally installed at over 40 SF in size using wood or wood-like materials. This existing Code provision is overly restrictive. Many existing Wall sign installations would not comply with this Appendix Section, though they are safe and professionally designed and installed. The value originally inserted in the Appendix H 111.1 was arbitrary and was not supported by direct research or practical sign fabrication experience. This adjustment will permit continuing reasonable Wall sign sizes in wood or similar materials.

Cost Impact: The code change proposal will not increase the cost of construction.

G251-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

H111.1-G-CRAWFORD.doc

G252 – 12

APPENDIX L (NEW)

Proponent: Proponent: Stephen V. Skalko Portland Cement Association and Jason Thompson National Concrete Masonry Association representing the Masonry Alliance for Codes and Standards

Add new Appendix L as follows:

APPENDIX L BUILDING RESILIENCE

The provisions in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION L101 GENERAL

L101.1 Purpose. The purpose of this appendix is to promote enhanced public health, safety and general welfare and to reduce public and private property losses due to hazards and natural disasters associated with fires, flooding, high winds and earthquakes.

SECTION L102 BUILDING HEIGHTS AND AREA

L102.1 General. *Building height and areas* shall comply with Sections L102.1 through L102.4.

L102.2 Height and Area Limitations. Allowable heights and areas for all *buildings* shall be in accordance with Table L102.2.

TABLE L102.2

ALLOWABLE HEIGHT AND BUILDING AREAS^a

Building height limitations shown in feet above grade plane. Story limitations shown as stories above grade plane. Building area limitations shown in square feet, as determined by the definition of "Area, building," per story

<u>GROUP</u>	<u>HGT</u> <u>(feet)</u>	<u>TYPE OF CONSTRUCTION</u>					
		<u>Type I</u>		<u>Type II</u>	<u>Type III</u>	<u>Type IV</u>	<u>Type V</u>
		<u>A</u>	<u>B</u>	<u>A</u>	<u>A</u>	<u>HT</u>	<u>A</u>
		<u>UL</u>	<u>160</u>	<u>65</u>	<u>65</u>	<u>65</u>	<u>50</u>
		<u>STORIES (S)</u> <u>Area (A)</u>					
<u>A-1</u>	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>5</u> <u>UL</u>	<u>3</u> <u>15,500</u>	<u>3</u> <u>14,000</u>	<u>3</u> <u>15,000</u>	<u>2</u> <u>11,500</u>
<u>A-2</u>	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>11</u> <u>UL</u>	<u>3</u> <u>15,500</u>	<u>3</u> <u>14,000</u>	<u>3</u> <u>15,000</u>	<u>2</u> <u>11,500</u>
<u>A-3</u>	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>11</u> <u>UL</u>	<u>3</u> <u>15,500</u>	<u>3</u> <u>14,000</u>	<u>3</u> <u>15,000</u>	<u>2</u> <u>11,500</u>
<u>A-4</u>	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>11</u> <u>UL</u>	<u>3</u> <u>15,500</u>	<u>3</u> <u>14,000</u>	<u>3</u> <u>15,000</u>	<u>2</u> <u>11,500</u>
<u>A-5</u>	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>UL</u> <u>UL</u>	<u>UL</u> <u>UL</u>	<u>UL</u> <u>UL</u>	<u>UL</u> <u>UL</u>	<u>UL</u> <u>UL</u>
<u>B</u>	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>11</u> <u>UL</u>	<u>5</u> <u>37,500</u>	<u>5</u> <u>28,500</u>	<u>5</u> <u>36,000</u>	<u>3</u> <u>18,000</u>
<u>E</u>	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>5</u> <u>UL</u>	<u>3</u> <u>26,500</u>	<u>3</u> <u>23,500</u>	<u>3</u> <u>25,500</u>	<u>1</u> <u>18,500</u>

GROUP	TYPE OF CONSTRUCTION						
	HGT (feet)	Type I		Type II	Type III	Type IV	Type V
		A	B	A	A	HT	A
		UL	160	65	65	65	50
STORIES (S) Area (A)							
F-1	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>11</u> <u>UL</u>	<u>4</u> 25,000	<u>3</u> 19,000	<u>4</u> 33,500	<u>2</u> 14,000
F-2	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>11</u> <u>UL</u>	<u>5</u> 37,500	<u>4</u> 28,500	<u>5</u> 50,500	<u>3</u> 21,000
H-1	<u>S</u> <u>A</u>	<u>1</u> 21,000	<u>1</u> 16,500	<u>1</u> 11,000	<u>1</u> 9,500	<u>1</u> 10,500	<u>1</u> 7,500
H-2 ^d	<u>S</u> <u>A</u>	<u>UL</u> 21,000	<u>3</u> 16,500	<u>2</u> 11,000	<u>2</u> 9,500	<u>2</u> 10,500	<u>1</u> 7,500
H-3 ^d	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>6</u> 60,000	<u>4</u> 26,500	<u>4</u> 17,500	<u>4</u> 25,500	<u>2</u> 10,000
H-4	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>7</u> <u>UL</u>	<u>5</u> 37,500	<u>5</u> 28,500	<u>5</u> 36,000	<u>3</u> 18,000
H-5	<u>S</u> <u>A</u>	<u>4</u> <u>UL</u>	<u>4</u> <u>UL</u>	<u>3</u> 37,500	<u>3</u> 28,500	<u>3</u> 36,000	<u>3</u> 18,000
I-1	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>9</u> 55,000	<u>4</u> 19,000	<u>4</u> 16,500	<u>4</u> 18,000	<u>3</u> 10,500
I-2	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>4</u> <u>UL</u>	<u>2</u> 15,000	<u>1</u> 12,000	<u>1</u> 12,000	<u>1</u> 9,500
I-3	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>4</u> <u>UL</u>	<u>2</u> 15,000	<u>2</u> 10,500	<u>2</u> 12,000	<u>2</u> 7,500
I-4	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>5</u> 60,500	<u>3</u> 26,500	<u>3</u> 23,500	<u>3</u> 25,500	<u>1</u> 18,500
M	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>11</u> <u>UL</u>	<u>4</u> 21,500	<u>4</u> 18,500	<u>4</u> 20,500	<u>3</u> 14,000
S-1	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>11</u> 48,000	<u>4</u> 26,000	<u>3</u> 26,000	<u>4</u> 25,500	<u>3</u> 14,000
S-2 ^{b, c}	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>11</u> 79,000	<u>5</u> 39,000	<u>4</u> 39,000	<u>5</u> 38,500	<u>4</u> 21,000
U ^c	<u>S</u> <u>A</u>	<u>UL</u> <u>UL</u>	<u>5</u> 35,500	<u>4</u> 19,000	<u>3</u> 14,000	<u>4</u> 18,000	<u>2</u> 9,000

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

UL = Unlimited, NP = Not permitted.

- a. See the following sections for general exceptions to Table L102.1:
 1. Section 506.2, Allowable area increase due to street frontage of the IBC.
 2. Section 507, Unlimited area buildings of the IBC.
- b. For open parking structures, see Section 406.5 of the IBC.
- c. For private garages, see Section 406.3 of the IBC.
- d. See Section 4157 for limitations of the IBC.

L102.3 Building Height and Area Increases. Increases in building height in accordance with Section 504.2 shall not be permitted. Increases in building area in accordance with Section 506.3 shall not be permitted.

L102.4 Single occupancy buildings with more than one story. Exception 2 of Section 506.4.1 shall not be permitted.

SECTION L103 TYPES OF CONSTRUCTION

L103.1 General. Building type of construction shall comply with Section L103.2.

L103.2 Fire-Resistance Rating. Building elements shall have a fire resistance rating not less than that specified in Table L103.2 and exterior walls shall have a fire resistance rating not less than that specified in Table 602.

**TABLE L103.2
FIRE-RESISTANCE RATING FOR BUILDING ELEMENTS (HOURS)^a**

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A	B	A	B	HT	A	B
Primary Structural Frame ^{g,h}	<u>3^b</u>	<u>2^b</u>	<u>1</u>	<u>NP</u>	<u>1</u>	<u>NP</u>	<u>HT</u>	<u>1</u>	<u>NP</u>
Bearing Walls									
Exterior ^{i,g}	<u>3</u>	<u>2</u>	<u>1</u>	<u>NP</u>	<u>2</u>	<u>NP</u>	<u>2</u>	<u>1</u>	<u>NP</u>
Interior	<u>3^b</u>	<u>2^b</u>	<u>1</u>	<u>NP</u>	<u>1</u>	<u>NP</u>	<u>1/HT</u>	<u>1</u>	<u>NP</u>
Non-bearing Walls and Partitions	See Table 602 of the <i>IBC</i>								
Exterior									
Non-bearing Walls and Partitions ^e							See Section 602.4.6 of the <i>IBC</i>		
Interior	<u>0</u>	<u>0</u>	<u>0</u>	<u>NP</u>	<u>0</u>	<u>NP</u>		<u>0</u>	<u>NP</u>
Floor Construction and Secondary Members ^h	<u>2</u>	<u>2</u>	<u>1</u>	<u>NP</u>	<u>1</u>	<u>NP</u>	<u>HT</u>	<u>1</u>	<u>NP</u>
Roof Construction and Secondary Members ^h	<u>1-1/2^b</u>	<u>1^{c,d}</u>	<u>1^{c,d}</u>	<u>NP</u>	<u>1^{c,d}</u>	<u>NP</u>	<u>HT</u>	<u>1^{c,d}</u>	<u>NP</u>

For SI: 1 foot = 304.8 mm.

NP = Not Permitted.

- The requirements in this table take precedence over Table 601.
- Roof supports: Fire-resistance rating of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
- Fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire retardant wood members shall be allowed to be used for such unprotected members.
- In all occupancies, heavy timber shall be allowed where 1-hour or less fire-resistance rating is required.
- Not less than the fire-resistance rating required by other Sections of the code.^f Not less than the fire-resistance rating based on fire separation distance (see Table 602.^g Not less than the fire-resistance rating as referenced in Section 704.10.^h See Section 202

SECTION L104 FIRE PROTECTION SYSTEMS

L104.1 General. Building fire protection systems shall comply with Section L104.2.

L104.2 Automatic Sprinkler Protection. An approved automatic sprinkler system shall be provided throughout all new buildings in accordance with Section 903.

Exceptions:

- All Group F-2 occupancies
- In Group S-2 Occupancies located in close proximity to a Group F-2 occupancy where the noncombustible products that are manufactured in the Group F-2 building are stored, the sprinkler protection shall be permitted to be omitted when approved by the building official.
- Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided those spaces or areas are equipped throughout with an automatic fire alarm system and are separated from the remainder of the building by fire barriers consisting of not less than 1-hour fire-resistance-rated walls and 2-hour fire-resistance-rated horizontal assemblies.

L104.2.1 Automatic Sprinkler Systems. Sprinkler systems shall be designed and installed in accordance with Section 903.3.1.1. Sprinkler systems designed and installed in accordance with Section 903.3.1.2 shall not be permitted.

Reason: This reason statement has the following two segments to explain the reasons for this change: (A) The code change is explained with specific substantiation; and (B) General background information identifying the need for enhanced property protection and functional resilience for to strengthen the built environment;

(A) The following are reports of dollar loss to property from wind, cold weather and fire disasters.

- The American Society of Civil Engineers reported in *Normalized Hurricane Damage in the United States, 1900 – 2005*, National Hazard Review, ASCE 2008, that property damage from hurricanes was 81 billion dollars in 2005.
- The National Weather Service reports that U.S. property damage due to winter storms and ice exceeded 1.5 billion dollars in 2009.
- *Fire Losses in the United States During 2009* by the National Fire Protection Association, August 2010 shows that property loss due to structure fires in buildings other than one and two family dwellings was approximately 4.5 billion dollars.

Increasing the stringency of the design criteria of buildings for hazards such as wind, snow or fire results in more robust buildings. Such requirements reduce the amount of energy and resources required for repair, removal, disposal and replacement of building components and systems damaged from these disasters. A further benefit is a reduction in the amount of damaged building materials and content entering landfills.

Additional benefits are enhanced life safety, security and occupant comfort; potentially less demand on community resources required for emergency response; and allowing facilities to be more readily adapted for re-use if there is a change of occupancy in the future.

(B) Minimum building requirements whether through energy codes, plumbing codes, mechanical codes, zoning codes, or basic building codes, do not encourage truly sustainable buildings. This proposal is one of several that attempt to integrate the concepts of the *Whole Building Design Guide* (WBDG) into the International Building Code as a non-mandatory Appendix. This allows adopting jurisdictions the option of incorporating code requirements into the building code to improve the resilience of the built environment without the need to add another code to the community requirements.

The WBDG, developed in partnership between the National Institute of Building Sciences (NIBS) and the Sustainable Building Industries Council (SBIC), has as its key concepts: accessible, aesthetics, cost-effective, functional/operational, historic preservation, productive, secure/safe, and sustainable.

There are numerous references about the economic, societal, and environmental benefits that result when enhanced functional resilience for resource minimization are integrated into building design and construction. Six examples demonstrating the importance and supporting the concepts are:

1. Natural Hazard Mitigation Saves: An Independent Study to Assess the Future Savings from Mitigation Activities

National Institute of Building Sciences Multi-Hazard Mitigation Council - 2005

One of the findings in this report is "The analysis of the statistically representative sample of FEMA grants awarded during the study period indicates that a dollar spent on disaster mitigation saves society an average of \$4." The programs studied often addressed issues and strategies other than enhanced disaster resistance of buildings and other structures. However, more disaster-resistant buildings enhance life safety; reduce costs and environmental impacts associated with repair, removal, disposal, and replacement; and reduce the time and resources required for community recovery.

2. Five Years Later – Are we better prepared?

Institute for Business and Home Safety - 2010

This IBHS report states: "When Hurricane Katrina made landfall on Aug. 29, 2005, it caused an estimated \$41.1 billion in insured losses across six states, and took an incalculable economic and social toll on many communities. Five years later, the recovery continues and some residents in the most severely affected states of Alabama, Louisiana and Mississippi are still struggling. There is no question that no one wants a repeat performance of this devastating event that left at least 1,300 people dead. Yet, the steps taken to improve the quality of the building stock, whether through rebuilding or new construction, call into question the commitment of some key stakeholders to ensuring that past mistakes are not repeated." This report indicates that there is a need to implement provisions to make buildings more disaster-resistant. Clearly this suggests that functional resilience should at least be integrated into the design and construction of sustainable buildings.

3. National Weather Service Office of Climate, Water and Weather Services

National Oceanic and Atmospheric Administration (NOAA) - 2010

Data provided on the NOAA website [www.weather.gov/os/hazstats.shtml] indicates that the average annual direct property loss due to natural disasters in the United States exceeds of \$35,000,000,000. This does not include indirect costs associated with loss of residences, business closures, and resources expended for emergency response and management. These direct property losses also do not reflect the direct environmental impact due to reconstruction after the disasters. Functional resilience will help alleviate the environmental impact and minimize both direct and indirect losses from natural disasters.

4. Global Climate Change Impacts in the United States

U.S. Global Change Research Program (USGCRP) - 2009

The USGCRP includes the departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Interior, State and Transportation; National Aeronautic and Space Administration; Environmental Protection Agency, USA International Development, National Science Foundation and Smithsonian Institution

The report identifies that: "Climate changes are underway in the United States and are projected to grow. Climate-related changes are already observed in the United States and its coastal waters. These include increases in heavy downpours, rising temperature and sea level, rapidly retreating glaciers, thawing permafrost, lengthening growing seasons,

lengthening ice-free seasons in the ocean and on lakes and rivers, earlier snowmelt, and alterations in river flows. These changes are projected to grow.” The report further identifies that the: “Threats to human health will increase. Health impacts of climate change are related to heat stress, waterborne diseases, poor air quality, extreme weather events, and diseases transmitted by insects and rodents. Robust public health infrastructure can reduce the potential for negative impacts.” Key messages in the report on societal impacts include:

- “City residents and city infrastructure have unique vulnerabilities to climate change. “
- “Climate change affects communities through changes in climate-sensitive resources that occur both locally and at great distances.”
- “Insurance is one of the industries particularly vulnerable to increasing extreme weather events such as severe storms, but it can also help society manage the risks.”

Sustainable building design and construction cannot be about protecting the natural environment without consideration of the projected growth in severe weather. Minimum codes primarily based on past natural events are not appropriate for truly sustainable buildings. Buildings expected to have long term positive impacts on the environment must be protected from these extreme changes in the natural environment. The provisions for improved property protections are necessary to reduce the amount of energy and resources associated with repair, removal, disposal, and replacement due to routine maintenance and damage from disasters. Further such provisions reduce the time and resources required for community disaster recovery.

5. Sustainable Stewardship - Historic preservation plays an essential role in fighting climate change ,
Traditional Building, National Trust for Historic Preservation - 2008

In the article Richard Moe summarizes the results of a study by the Brookings Institution which projects that by 2030 we will have demolished and replaced 82 billion square feet of our current building stock, or nearly 1/3 of our existing buildings, largely because the vast majority of them weren't designed and built to last any longer. Durability, as a component of functional resilience, can reduce these losses.

6. Opportunities for Integrating Disaster Mitigation and Energy Retrofit Programs

Senate Environment and Public Works Committee Room, Dirksen Senate Office Building, Washington, D.C. - 2010
During this panel discussion a representative of the National Conference of State Historic Preservation Officers noted that more robust buildings erected prior to 1950 tend to be more adaptable for reuse and renovation. Prior to the mid-1950s most local jurisdictions developed their own building code requirements that uniquely addressed the community's needs, issues and concerns. Pre-1950 building codes typically resulted in more durable and robust construction that lasts longer.

The total environmental impact of insulation, high efficiency equipment, components, and appliances, low-flow plumbing fixtures, and other building materials and contents are relatively insignificant when rendered irreparable or contaminated and must be disposed of in landfills after disasters. The US Army Corps of Engineers estimated that after Hurricane Katrina nearly 1.2 billion cubic feet of building materials and contents ended up in landfills. This is analogous to stacking enough refrigerators a fifth of the way to the moon or placing them end to end around the equator of the Earth twice.

Cost Impact: This proposal will increase the cost of construction

Staff note: This proposal is one of several proposals adding a new appendix L. The intention of the proponent has been indicated that the contents of the proposals be combined if they should be approved into a single Appendix L Titled “Appendix L, Building Resilience.”

G252-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

APPENDIX L (NEW) #1-G-SKALKO-THOMPSON.doc

G253 – 12

APPENDIX L (NEW)

Proponent: Stephen V. Skalko Portland Cement Association and Jason Thompson National Concrete Masonry Association representing the Masonry Alliance for Codes and Standards

Add new text as follows:

APPENDIX L BUILDING RESILIENCE

The provisions in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION L101 GENERAL

L101.1 Purpose. The purpose of this appendix is to promote enhanced public health, safety and general welfare and to reduce public and private property losses due to hazards and natural disasters associated with fires, flooding, high winds and earthquakes.

SECTION L102 OCCUPANCY SEPARATION

L102.1 General. Occupancy separation in *buildings* shall comply with Section L102.2.

L102.2 Mixed Use and Occupancy. All buildings containing mixed occupancies shall be in accordance with this section.

L102.2.1 Separation of incidental accessory occupancies. The incidental accessory occupancies listed in Table L102.2.1 shall be separated from the remainder of the *building* by fire barriers.

TABLE L102.2.1
INCIDENTAL ACCESSORY OCCUPANCIES^a

<u>Room or Area</u>	<u>Separation and/or Protection</u>
<u>Furnace room where any piece of equipment is over 400,000 Btu per hour input</u>	<u>1-hour and provide automatic sprinkler system</u>
<u>Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower.</u>	<u>1-hour and provide automatic sprinkler system</u>
<u>Refrigerant machinery rooms</u>	<u>1-hour and provide automatic sprinkler system</u>
<u>Parking garage (Section 406.2 of the Code, <i>Parking garages</i>)</u>	<u>2-hour and provide automatic sprinkler system</u>
<u>Hydrogen cut off rooms</u>	<u>2-hour and provide automatic sprinkler system</u>
<u>Incinerator rooms</u>	<u>2-hour and provide automatic sprinkler system</u>
<u>Laundry rooms over 100 square feet</u>	<u>1-hour and provide automatic sprinkler system</u>
<u>Storage rooms over 100 square feet</u>	<u>1-hour and provide automatic sprinkler system</u>
<u>Waste and linen collection rooms other than rooms designated for the collection of recyclables</u>	<u>1-hour and provide automatic sprinkler system</u>

Rooms designated for the collection of recyclables	2-hour and provide automatic sprinkler system
Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons, or lithium ion capacity of 1,000 pounds used for facility standby power, emergency power or uninterrupted power supplies	2-hour and provide automatic sprinkler system
Rooms in non-high-rise buildings containing fire pumps	2-hour and provide automatic sprinkler system
Rooms in high-rise buildings containing fire pumps	2-hour and provide automatic sprinkler system
^a The requirements in this table take precedence over Table 508.2.5, <i>Incidental accessory occupancies</i> of the <i>International Building Code</i> .	

L102.2.2 Separation of mixed occupancies. All occupancies except incidental accessory occupancies in Table L102.2.1 shall be separated from each other by fire barriers in accordance with Table L102.2.2

**TABLE L102.2.2
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)**

Occupancy	A ^d	E	B	I	F-2, S-2 ^{b,c} , U ^b	F-1, S-1, M	H-1	H-2	H-3, H-4, H-5
A ^d	N	2	2	2	1	2	NP	4	3
E ^d	—	N	2	2	1	2	NP	4	3
B	—	—	N	2	1	2	NP	3	2
I	—	—	—	N	2	2	NP	NP	NP
F-2, S-2 ^{b,c} , U ^e	—	—	—	—	N	2	NP	4	3 ^a
F-1, S-1, M	—	—	—	—	—	N	NP	3	2 ^a
H-1	—	—	—	—	—	—	N	NP	NP
H-2	—	—	—	—	—	—	—	N	1
H-3, H-4, H-5	—	—	—	—	—	—	—	—	N

N = No separation requirement.

NP = Not permitted.

a. For Group H-5 occupancies, see Section 903.2.5.2 of the *International Building Code*.

b. Areas used only for private or pleasure vehicles shall be allowed to reduce separation by 1 hour.

c. See Section 406.3.4 of the *International Building Code*.

d. Commercial kitchens need not be separated from the restaurant seating areas that they serve.

SECTION L103 FIRE PROTECTION FEATURES

L103.1 General. *Building* fire protection features shall comply with Sections L103.2 through L103.12.

L103.2 Allowable area of openings. The maximum area of unprotected and protected openings permitted in an exterior wall in any story of the building shall not exceed the percentages specified in Table L103.2.

L103.3 Protected Openings. The exception for opening protectives in Section 705.8.2 of the *International Building Code*, shall not be permitted.

L103.4 Vertical Separation of Openings. Exception 2 of Section 705.8.5 shall not be permitted.

L103.5 Parapets. Exception 5 of Section 705.11 shall not be permitted for Group R-2 occupancies.

L103.6 Fire Walls. Fire walls shall meet the requirements of this section.

L103.6.1 Materials. Fire walls for all types of construction shall be of any approved noncombustible material permitted in NFPA 221.

L103.6.2 Fire Resistance Rating. The fire-resistance ratings shall meet or exceed the ratings provided in Table L103.6.2.

L103.6.3 Horizontal continuity. Exception 3 of Section 706.5 shall not be permitted.

L103.6.4 Openings. Exception 2 of Section 706.8 shall not be permitted.

L103.7 Fire Barriers. Fire barriers shall comply with the provisions of this section.

L103.7.1 Fire-resistance. The fire resistance rating the separation between individual dwelling units and sleeping units, and between dwelling units and sleeping units and other spaces in the building shall be fire barriers having a minimum 2-hour fire-resistance rated construction as required in Table 707.3.10.

L103.7.2 Openings. Exception 1 in Section 707.6 of the *International Building Code* that allows openings in a fire barrier to be larger than 156 sq.ft. where *automatic sprinkler systems* are provided shall not be permitted.

L103.8 Shaft Enclosures. Exception 5 of Section 713.14.1 shall not be permitted.

L103.9 Fire Partitions. Fire partitions shall comply with the provisions of this section.

L103.9.1 Dwelling unit separation. Fire partitions in Section 708.1 shall not be permitted for walls separating dwelling units in the same building.

L103.9.2 Sleeping unit separation. Fire partitions in Section 708.1 shall not be permitted for walls separating sleeping units in the same building.

L103.9.3 Corridor walls. Fire partitions in Section 708.1 shall not be permitted for corridor walls separating corridors from dwelling units or sleeping units in the same building.

L103.9.4 Continuity. Exception 6 in Section 708.4 shall not be permitted.

L103.10 Horizontal Assemblies. Horizontal assemblies shall comply with the requirements of this section.

L103.10.1 Dwelling and sleeping units. Minimum 2-hour fire resistance rated horizontal assemblies shall be required to separate dwelling units in the same building and separate sleeping units in occupancies in the same building as required in Table 707.3.10.

L103.10.2 Fire resistance rating. The exception to Section 711.3 shall not be permitted.

L103.11 Opening Protectives. The provisions of this section shall apply to opening protectives.

L103.11.1 Doors in interior exit stairways and ramps and exit passageways. The Exception to Section 716.5.5 shall not be permitted.

L103.11.2 Glazing in doors. The Exception to Section 716.5.5.1 shall not be permitted.

L103.12 Concealed Spaces. Exceptions 1 and 2 of Section 718.3.2 shall not be permitted for Groups R-1, R-2 or R-4 occupancies.

**TABLE L103.2
MAXIMUM AREA OF EXTERIOR WALL OPENING BASED ON
FIRE SEPARATION DISTANCE AND DEGREE OF OPENING PROTECTION^a**

Fire Separation Distance (feet)	Degree of Opening Protection	Allowable Areas^b
<u>0 to less than 3^{c,d}</u>	<u>Unprotected (UP)</u>	<u>Not Permitted</u>
	<u>Protected (P)</u>	<u>Not Permitted</u>
<u>3 to less than 5^e</u>	<u>Unprotected (UP)</u>	<u>Not Permitted</u>
	<u>Protected (P)</u>	<u>15%</u>
<u>5 to less than 10^d</u>	<u>Unprotected (UP)</u>	<u>10%</u>
	<u>Protected (P)</u>	<u>25%</u>
<u>10 to less than 15^{f,g}</u>	<u>Unprotected (UP)</u>	<u>15%</u>
	<u>Protected (P)</u>	<u>45%</u>
<u>15 to less than 20^{f,g}</u>	<u>Unprotected (UP)</u>	<u>25%</u>
	<u>Protected (P)</u>	<u>75%</u>
<u>20 to less than 25^{f,g}</u>	<u>Unprotected (UP)</u>	<u>45%</u>
	<u>Protected (P)</u>	<u>No Limit</u>
<u>25 to less than 30^{f,g}</u>	<u>Unprotected (UP)</u>	<u>70%</u>
	<u>Protected (P)</u>	<u>No Limit</u>
<u>30 or greater</u>	<u>Unprotected (UP)</u>	<u>No Limit</u>
	<u>Protected (P)</u>	<u>Not Required</u>

For SI: 1 foot = 304.8 mm

UP = Unprotected openings in buildings

P = Openings protected with an opening protective assembly in accordance with section 705.8.2 the

- a. The requirements in this table take precedence over Table 705.8 of the Code.
- b. Values indicated are the percentage of the area of the exterior wall per story.
- c. For the requirements for fire walls of buildings with differing heights see Section 706.6.1
- d. For openings in a fire wall for building son the same lot, see Section 705.8
- e. The maximum percentage of unprotected and protected openings shall be 25% for Group R-3 occupancies.
- f. The area of unprotected and protected openings shall not be limited for Group R-3 occupancies with a fire separation distance of 5 feet or greater.
- g. Includes buildings accessory to Group R-3.

**TABLE L103.6.2
FIRE WALL FIRE-RESISTANCE RATINGS**

GROUP	FIRE-RESISTANCE RATING (hours)
<u>A, B, E, H-4, I, R-1, R-2, U</u>	<u>3</u>
<u>F-1, H-3^a, H-5, M, S-1</u>	<u>3</u>
<u>H-1, H-2</u>	<u>4^a</u>
<u>F-2, S-2, R-3, R-4</u>	<u>2</u>

a. For Group H-1, H-2 or H-3 buildings, also see Sections 415.4 and 415.5.

Reason: This reason statement has the following two segments to explain the reasons for this change: (A) The code change is explained with specific substantiation; and (B) General background information identifying the need for enhanced property protection and functional resilience for to strengthen the built environment;

(A) The following are reports of dollar loss to property from wind, cold weather and fire disasters.

- The American Society of Civil Engineers reported in *Normalized Hurricane Damage in the United States, 1900 – 2005*, National Hazard Review, ASCE 2008, that property damage from hurricanes was 81 billion dollars in 2005.

- The National Weather Service reports that U.S. property damage due to winter storms and ice exceeded 1.5 billion dollars in 2009.
- *Fire Losses in the United States During 2009* by the National Fire Protection Association, August 2010 shows that property loss due to structure fires in buildings other than one and two family dwellings was approximately 4.5 billion dollars.

Increasing the stringency of the design criteria of buildings for hazards such as wind, snow or fire results in more robust buildings. Such requirements reduce the amount of energy and resources required for repair, removal, disposal and replacement of building components and systems damaged from these disasters. A further benefit is a reduction in the amount of damaged building materials and content entering landfills.

Additional benefits are enhanced life safety, security and occupant comfort; potentially less demand on community resources required for emergency response; and allowing facilities to be more readily adapted for re-use if there is a change of occupancy in the future.

(B) Minimum building requirements whether through energy codes, plumbing codes, mechanical codes, zoning codes, or basic building codes, do not encourage truly sustainable buildings. This proposal is one of several that attempt to integrate the concepts of the *Whole Building Design Guide* (WBDG) into the International Building Code as a non-mandatory Appendix. This allows adopting jurisdictions the option of incorporating code requirements into the building code to improve the resilience of the built environment without the need to add another code to the community requirements.

The WBDG, developed in partnership between the National Institute of Building Sciences (NIBS) and the Sustainable Building Industries Council (SBIC), has as its key concepts: accessible, aesthetics, cost-effective, functional/operational, historic preservation, productive, secure/safe, and sustainable.

There are numerous references about the economic, societal, and environmental benefits that result when enhanced functional resilience for resource minimization are integrated into building design and construction. Six examples demonstrating the importance and supporting the concepts are:

1. ***Natural Hazard Mitigation Saves: An Independent Study to Assess the Future Savings from Mitigation Activities***

National Institute of Building Sciences Multi-Hazard Mitigation Council - 2005

One of the findings in this report is "The analysis of the statistically representative sample of FEMA grants awarded during the study period indicates that a dollar spent on disaster mitigation saves society an average of \$4." The programs studied often addressed issues and strategies other than enhanced disaster resistance of buildings and other structures. However, more disaster-resistant buildings enhance life safety; reduce costs and environmental impacts associated with repair, removal, disposal, and replacement; and reduce the time and resources required for community recovery.

2. ***Five Years Later – Are we better prepared?***

Institute for Business and Home Safety - 2010

This IBHS report states: "When Hurricane Katrina made landfall on Aug. 29, 2005, it caused an estimated \$41.1 billion in insured losses across six states, and took an incalculable economic and social toll on many communities. Five years later, the recovery continues and some residents in the most severely affected states of Alabama, Louisiana and Mississippi are still struggling. There is no question that no one wants a repeat performance of this devastating event that left at least 1,300 people dead. Yet, the steps taken to improve the quality of the building stock, whether through rebuilding or new construction, call into question the commitment of some key stakeholders to ensuring that past mistakes are not repeated." This report indicates that there is a need to implement provisions to make buildings more disaster-resistant. Clearly this suggests that functional resilience should at least be integrated into the design and construction of sustainable buildings.

3. ***National Weather Service Office of Climate, Water and Weather Services***

National Oceanic and Atmospheric Administration (NOAA) - 2010

Data provided on the NOAA website [www.weather.gov/os/hazstats.shtm] indicates that the average annual direct property loss due to natural disasters in the United States exceeds of \$35,000,000,000. This does not include indirect costs associated with loss of residences, business closures, and resources expended for emergency response and management. These direct property losses also do not reflect the direct environmental impact due to reconstruction after the disasters. Functional resilience will help alleviate the environmental impact and minimize both direct and indirect losses from natural disasters.

4. ***Global Climate Change Impacts in the United States***

U.S. Global Change Research Program (USGCRP) - 2009

The USGCRP includes the departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Interior, State and Transportation; National Aeronautic and Space Administration; Environmental Protection Agency, USA International Development, National Science Foundation and Smithsonian Institution

The report identifies that: "Climate changes are underway in the United States and are projected to grow. Climate-related changes are already observed in the United States and its coastal waters. These include increases in heavy downpours, rising temperature and sea level, rapidly retreating glaciers, thawing permafrost, lengthening growing seasons, lengthening ice-free seasons in the ocean and on lakes and rivers, earlier snowmelt, and alterations in river flows. These changes are projected to grow." The report further identifies that the: "Threats to human health will increase. Health impacts of climate change are related to heat stress, waterborne diseases, poor air quality, extreme weather events, and diseases transmitted by insects and rodents. Robust public health infrastructure can reduce the potential for negative impacts." Key messages in the report on societal impacts include:

- "City residents and city infrastructure have unique vulnerabilities to climate change. "

- “Climate change affects communities through changes in climate-sensitive resources that occur both locally and at great distances.”
- “Insurance is one of the industries particularly vulnerable to increasing extreme weather events such as severe storms, but it can also help society manage the risks.”

Sustainable building design and construction cannot be about protecting the natural environment without consideration of the projected growth in severe weather. Minimum codes primarily based on past natural events are not appropriate for truly sustainable buildings. Buildings expected to have long term positive impacts on the environment must be protected from these extreme changes in the natural environment. The provisions for improved property protections are necessary to reduce the amount of energy and resources associated with repair, removal, disposal, and replacement due to routine maintenance and damage from disasters. Further such provisions reduce the time and resources required for community disaster recovery.

5. **Sustainable Stewardship** - *Historic preservation plays an essential role in fighting climate change* , *Traditional Building*, National Trust for Historic Preservation - 2008

In the article Richard Moe summarizes the results of a study by the Brookings Institution which projects that by 2030 we will have demolished and replaced 82 billion square feet of our current building stock, or nearly 1/3 of our existing buildings, largely because the vast majority of them weren't designed and built to last any longer. Durability, as a component of functional resilience, can reduce these losses.

6. **Opportunities for Integrating Disaster Mitigation and Energy Retrofit Programs**

Senate Environment and Public Works Committee Room, Dirksen Senate Office Building, Washington, D.C. - 2010

During this panel discussion a representative of the National Conference of State Historic Preservation Officers noted that more robust buildings erected prior to 1950 tend to be more adaptable for reuse and renovation. Prior to the mid-1950s most local jurisdictions developed their own building code requirements that uniquely addressed the community's needs, issues and concerns. Pre-1950 building codes typically resulted in more durable and robust construction that lasts longer.

The total environmental impact of insulation, high efficiency equipment, components, and appliances, low-flow plumbing fixtures, and other building materials and contents are relatively insignificant when rendered irreparable or contaminated and must be disposed of in landfills after disasters. The US Army Corps of Engineers estimated that after Hurricane Katrina nearly 1.2 billion cubic feet of building materials and contents ended up in landfills. This is analogous to stacking enough refrigerators a fifth of the way to the moon or placing them end to end around the equator of the Earth twice.

Cost Impact: This proposal will increase the cost of construction

Staff note: This proposal is one of several proposals adding a new appendix L. The intention of the proponent has been indicated that the contents of the proposals be combined if they should be approved into a single Appendix L Titled “Appendix L, Building Resilience.”

G253-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

APPENDIX L (NEW) #2-G-SKALKO-THOMPSON.doc

G254 – 12

Appendix N (NEW)

Proponent: Barry Greive, Target Corporation (barry.greive@Target.com)

Add new text as follows:

APPENDIX N **REPLICABLE BUILDINGS**

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION N101 **GENERAL**

N101.1 Scope. The purpose of this appendix shall establish the minimum requirements for a replicable building review and approval process.

N101.2 Design. Buildings and facilities shall be designed and constructed in accordance with all applicable provisions of this code and referenced standards.

SECTION N102 **DEFINITIONS**

N102.1 Definitions. The following words and terms shall, for the purposes of this appendix, have the meanings shown herein.

QUALIFIED AGENCY. A qualified individual, company, or jurisdiction approved by the code official.

REPLICABLE BUILDINGS. A building whose construction plans have been reviewed and deemed code compliant by an *approved* designated third party.

REPLICABLE BUILDING DESIGN. A proposed design, whether it be a new building or remodel, that is based on a given prototype to be built in a variety of locations but that maintains consistent overall design parameters.

SECTION N103 **SCOPING REQUIREMENTS**

N103.1. General Design Requirements. A *replicable building* shall be based on a prototype design and several building elements that must be considered.

1. The building shall have the same use, occupancy, construction type, fire resistance, fire protection system, means of egress, and accessibility regardless of location.
2. The building form shall be consistent height and square footage with variations complying with Section N103.2
3. The building shall incorporate the same general *approved* structural design and address various regional conditions such as wind, hurricane, snow, and seismic loads.
4. The building shall have consistent basic mechanical, electrical and plumbing systems.
5. The building shall include *approved* options for various exterior of finish materials, veneers and details based on regional architectural styles. Changes to the façade shall have no impact on the operation, function or life safety requirement of the building.
6. Where the interior décor is different, the same materials, or materials of the same Class in accordance with their flame spread and smoke-developed indexes shall be used.

7. The building plans shall be reviewed and *approved* within the context of the site and other applicable, locally adopted development regulations and standards.

N103.2 Allowable Variations to the Replicable Design. The following are allowable variations to a *replicable building design*.

1. Reductions to the design height or square footage that have no impact on egress requirements.
2. Increases of no more than 5 percent to the design height or square footage to accommodate local requirements such as planning/zoning, development agreements and design image issues.
3. Modifications to the building envelope and mechanical, electrical and plumbing systems to accommodate local conditions and requirements, such as energy efficiency, ventilation, climate and local codes.

SECTION N104 **REPLICABLE BUILDING REVIEW**

N104.1 General. *Replicable buildings* shall be reviewed by an approved third party agency or the local jurisdiction.

N104.2. Qualified Agency Requirements. When using a third party agency or other qualified individuals the desired level of expertise provided for the review shall be approved by the code official and in accordance with one or more of the following.

1. Any *qualified agency* involved in the review shall be certified by *International Code Council* or equivalent organization for every code discipline reviewed.
2. Acceptable professional individuals, including but not limited to registered engineers or licensed architects shall have a minimum number of years of experience as determined by the jurisdiction.
3. A peer review process shall be in place requiring a registered design professional or certified building official to provide oversight of the final replicable review.
4. A uniform checklist similar to the ICC plan review records shall be used to maintain consistency in the review process.

Reason: August 2010 the International Code Council published a document titled the "IGG G1-2010 Guideline for Replicable Buildings". The intent of this guideline is to give jurisdictions a tool that they could adopt to help streamline their document review process to ensure code compliance. This code change proposal adds it to an Appendix chapter so jurisdictions have an easy way of adding this concept into their building code adoption process. The intent is to streamline the plan review process at the local level allowing the plan reviewer to focus on any state and local amendments to the International Family of Codes.

Bibliography: ICC G1 – 2010 Guideline for Replicable Buildings

Cost Impact: The code change proposal will not increase the cost of construction.

G254-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

APPENDIX N (NEW)-G-GRIEVE

G255 – 12

Appendix N (NEW)

Proponent: Dru Meadows, theGreenTeam, Inc., representing Wal-Mart Stores, Inc.
(dmeadows@thegreenteaminc.com)

Add new text as follows:

APPENDIX N **REPLICABLE BUILDINGS**

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION N101 **GENERAL**

N101.1 Scope. The provisions of this appendix shall apply to *replicable design* for new buildings and structures and for the alteration, repair, and addition of existing buildings and structures.

SECTION N102 **DEFINITIONS**

N102.1 Definitions. The following words and terms shall, for the purposes of this appendix, have the meanings shown herein.

APPROVED AGENCY. An independent person, firm or corporation, or other agency or organization, acceptable to the building official or authority having jurisdiction.

REPLICABLE BUILDING. Building or structure utilizing a *replicable design*.

REPLICABLE DESIGN. A prototypical design developed for application in multiple locations with minimal variation or modification.

SECTION N103 **REPLICABLE DESIGN REQUIREMENTS**

N103.1 Prototypical construction documents. A *replicable design* shall establish prototypical construction documents for application at multiple locations. The construction documents shall include details appropriate to each wind region, seismic design category, and climate zone for locations in which the *replicable design* is intended for application. Application of *replicable design* shall not vary with regard to the following, except for allowable variations in accordance with Section N106.1.1.

1. Use and occupancy classification
2. Building height and area limitations
3. Type of construction classification
4. Fire resistance ratings
5. Interior finishes
6. Fire protection system
7. Means of egress
8. Accessibility
9. Structural design criteria
10. Energy efficiency
11. Type of mechanical and electrical systems
12. Type of plumbing system and number of fixtures

SECTION N104
REPLICABLE DESIGN SUBMITTAL REQUIREMENTS

N104.1 General. A summary description of the *replicable design* and related construction documents shall be submitted. Where approval is requested for elements of the *replicable design* not within the scope of the *International Building Code*, the construction documents shall specifically designate the codes for which review is sought. Construction documents shall be signed, sealed and dated by the registered design professional.

N104.1.1 Architectural plans and specifications. Where approval of the architectural requirements of the *replicable design* is sought, the submittal documents shall include architectural plans and specifications as follows:

1. Description of uses and the proposed occupancy groups for all portions of the building.
2. Proposed type of construction of the building.
3. Fully dimensioned drawings to determine building areas and height.
4. Adequate details and dimensions to evaluate means of egress, including occupant loads for each floor, exit arrangement and sizes, corridors, doors, stairs.
5. Exit signs and means of egress lighting, including power supply.
6. Accessibility scoping provisions.
7. Description and details of proposed special occupancies such as a covered mall, high-rise, mezzanine, atrium, and public garage.
8. Adequate details to evaluate fire resistive construction requirements, including data substantiating required ratings.
9. Details of plastic, insulation, and safety glazing installation.
10. Details of required fire protection systems.

N104.1.2 Structural plans, specifications, and engineering details. Where approval of the structural requirements of the *replicable design* is sought, the submittal documents shall include details for each wind region, seismic design category and climate zone for which approval is sought; and, shall include the following:

1. Signed and sealed structural design calculations which support the member sizes on the drawings.
2. Design load criteria, including: frost depth; live loads; snow loads; wind loads; earthquake design data; other special loads.
3. Details of foundations and superstructure.
4. Provisions for required special inspections.
5. Material specifications demonstrating fire resistance criteria.

N104.1.3 Energy conservation details. Where approval of the energy conservation requirements of the *replicable design* is sought, the submittal documents shall include details for each climate zone for which approval is sought; and, shall include the following:

1. Climate zones for which approval is sought.
2. Building envelope details.
3. Building mechanical systems details.
4. Details of electrical power and lighting systems.
5. Provisions for system commissioning.

SECTION N105
REVIEW AND APPROVAL OF REPLICABLE DESIGN

N105.1 General. Proposed *replicable design* shall be reviewed by an *approved agency*. The review shall be applicable only to the *replicable design* features submitted in accordance with Section N104.

The review shall determine compliance with this code and additional codes specified under Section N104.1.

N105.2 Documentation. The results of the review shall be documented indicating compliance with the code requirements.

N105.3 Deficiencies. Where the review of the submitted construction documents identifies elements where the design is deficient and will not comply with the applicable code requirements, the *approved agency* shall notify the proponent of the *replicable design*, in writing, of the specific areas of non-compliance and request correction.

N105.4 Approval. Where the review of the submitted construction documents determines that the design is in compliance with the codes designated in Section N104.1, and where deficiencies identified in Section N105.3 have been corrected, the *approved agency* shall issue a Summary Report of Approved Replicable Design. The Summary Report shall include a reference to the specific plans approved and shall include any limitations on the approved *replicable design* including, but not limited to climate zones, wind regions and seismic design categories.

SECTION N106 **SITE SPECIFIC APPLICATION OF APPROVED REPLICABLE DESIGN**

N106.1 General. Where site specific application of a *replicable design* which has been approved under the provisions of Section N105 is sought, the construction documents submitted to the jurisdiction shall comply with this section.

N106.1.1 Allowable Variations. Where an approved *replicable design* is proposed for use in a specific location, variations to the approved design shall be limited to the following:

1. Reductions in the building height that do not impact compliance with the means of egress requirements.
2. Reductions in the building area that do not impact compliance with the means of egress requirements.
3. Increases to height that do not exceed 5 percent of the approved replicable design or that are necessary to comply with local requirements.
4. Increases to area that do not exceed 5 percent of the approved replicable design or that are necessary to comply with local requirements.
5. Modifications to the exterior walls, roof assemblies, mechanical, electrical, or plumbing to accommodate local conditions such as climate and energy requirements of the jurisdiction.
6. Modifications to *interior finishes* which are of the same classification, or better, than those provided in the approved *replicable design*.
7. Modifications to the exterior walls which are of the same classification, or higher, than those provided in the approved *replicable design*.
8. Modifications to mechanical, electrical, or plumbing systems that increase efficiency and that do not alter type of system or fixture count.
9. Modifications as approved by the building official.

N106.2 Submittal Documents. A summary description of the *replicable design* and related construction documents shall be submitted. Construction documents shall be signed, sealed and dated by the registered design professional. Construction documents shall identify allowable variations to the *replicable design* reviewed by the *approved agency*. A statement, signed, sealed and dated by the registered design professional, that the *replicable design* submitted for local review is the same as the *replicable design* reviewed by the *approved agency* shall be submitted.

N106.2.1 Architectural plans and specifications. Architectural plans and specifications shall include the following:

1. Construction documents for variations from the *replicable design*.
2. Construction documents for portions of the building that are not part of the *replicable design*.
3. Documents for local requirements as identified by the building official.

N106.2.2 Structural plans, specifications, and engineering details. Structural plans, specifications, and engineering details shall include the following:

1. Construction documents for variations from the *replicable design*.
2. Construction documents for portions of the building that are not part of the *replicable design*.
3. Documents for local requirements as identified by the building official.
4. Soils report indicating the soil type and recommended allowable bearing pressure and foundation type.

N106.2.3 Site plans. Site plans shall include the following:

1. Size and location of all new construction and all existing structures on the site.
2. Distances from lot lines and existing buildings or structures.
3. Established street grades and proposed finish grades.

SECTION N107 **SITE SPECIFIC REVIEW AND APPROVAL OF REPLICABLE DESIGN**

N107.1 General. Proposed site specific application of *replicable design* shall be submitted for permit in accordance with the provisions of Chapter 1 and Appendix N.

N107.2 Site specific review and approval of *replicable design*. The building official shall verify that the *replicable design* submitted for site specific application is the same as the approved *replicable design* reviewed by the *approved agency*. In addition, the building official shall review the following for code compliance:

1. Variations, other than allowable variations, from *replicable design*.
2. Portions of the building that are not part of the *replicable design*.
3. Local requirements as identified by the building official.

Reason: This proposed code change is intended to provide the specific requirements for replicable building review, consistent with the ICC GI-2010 Guideline for Replicable Buildings. Replicable buildings use a prototypical design developed for application in multiple locations with minimal variation or modification.

ICC GI-2010 was developed to “help state and local jurisdictions—as well as owners, architects, builders and engineers—to streamline a building document review process to examine and verify replicable construction documents; thus eliminating repetitive code compliance reviews.”

The ICC guideline outlines the principles of a centralized or “global” review for prototypical design elements. However, it does not provide specific requirements.

This addition is needed to provide specific requirements. This addition will expand on the objectives of the ICC guideline.

- It responds to changing technology and capabilities. As owners, architects, builders and engineers continue to utilize technology and systems to increase their efficiencies, regulatory efficiency must also continue to advance.
- It promotes efficiency. A centralized review of prototypical design elements can save considerable state and local resources and time by eliminating repetitive code-compliance reviews. Local jurisdictions can then utilize their resources to focus on reviews of complex and high-risk projects.
- It supports quality control. By coupling centralized review of prototypical design elements with a local review of unique jurisdictional requirements, replicable buildings that utilize this process can be constructed with greater consistency.

Bibliography: ICC GI-2010 Guideline for Replicable Buildings

Cost Impact: The code change proposal will not increase the cost of construction.

G255-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

APPENDIX X (NEW)-G-MEADOWS.doc