2007/2008 PROPOSED CHANGES TO THE INTERNATIONAL BUILDING CODE — GENERAL

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TENTATIVE ORDER OF DISCUSSION

2007/2008 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.

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G1–07/08
101.2

Proponent: Tom Lariviere, Fire Department, Madison, MS, representing the Joint Fire Service Review Committee

Revise as follows:

101.2 Scope. The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.

> **Exception:** Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress and their accessory structures ~~shall comply~~ built in accordance with the *International Residential Code* shall not require compliance with this code.

Reason: This proposal is intended to provide the latitude that is truly part of the codes. It is the intent, in fact, it is specifically required that a one-family dwelling be constructed in accordance with the IBC when it is **not** a detached structure. If this attached one-family dwelling could adequately be constructed according to the IBC, then why couldn't the designer choose to construct a one-family dwelling in accordance with the IBC, when it is detached.

This proposal only provides the designer with an option. The option is that the detached one-family dwelling could be constructed according to the IBC, or according to the IRC. This exception would then state that when the IRC is used, the IBC does not apply. This section would no longer mandate that the designer must use the IRC.

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

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

G2–07/08
101.2; IRC R101.2

Proponent: William W. Stewart, Architect, representing himself

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL AND THE IRC B/E CODE DEVELOPMENT COMMITTEES AS 2 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES

PART I – IBC GENERAL

Revise as follows:

101.2 Scope. The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.

> **Exception:** Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade ~~plane~~ in height with a separate means of egress and their accessory structures shall comply with the *International Residential Code*.

PART II – IRB BUILDING/ENERGY

R101.2 (Supp) Scope. The provisions of the *International Residential Code for One- and Two-family Dwellings* shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and townhouses not more than three stories above-grade plane in height with a separate means of egress and their accessory structures.

> **Exception:** Live/work units complying with the requirements of Section 419 of the *International Building Code* shall be permitted to be built as one- and two-family dwellings or townhouses. Fire suppression required by Section 419.5 of the *International Building Code* when constructed under the *International Residential Code for One- and Two-family Dwellings* shall conform to Section 903.3.1.3 of the *International Building Code*.

Reason (Part I: The 2006 IBC added "plane" to the exception as well as most other places "grade" appeared. While this was generally the technically correct solution for the Building Code it was not correct in 101.2. In making this change to 101.2 the Code Correlation Committee changed the Scope of the IRC. The IRC Building & Energy Committee resisted my attempt to coordinate the scopes of the two codes by changing the Scope of the IRC. IRC B&E Committee likes the scope of the IRC as it is written and doesn't believe that the Building Code scope is correct.

Deleting "plane" will coordinate the codes and eliminate the conflict that exists now where a user is directed out of the IBC to the IRC but the IRC is not applicable.

This change makes no technical change to the Building Code. All other references in the IBC to "grade plane" remain.

(Part II): This is the exact change I submitted last year. My only purpose then was to coordinate the IRC scope with that of the IBC. Many who use the IRC have convinced me that it was a substantial change to the IRC and that the best approach is to change the IBC back to its original language. I have submitted a change to do just that. This change is just in case the membership prefers the current IBC language

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

PART I – GENERAL

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

PART II – IRC BUILDING/ENERGY

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

G3–07/08
101.3; IFC 101.3; IRC R101.3

Proponent: Richard Schulte, Schulte & Associates

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL, IFC AND IRC BUILDING/ENERGY CODE DEVELOPMENT COMMITTEES AS 3 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

Revise as follows:

101.3 Intent. The purpose of this code is to establish ~~the~~ reasonable 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 reasonable safety ~~to~~ for fire fighters and emergency responders during emergency operations.

PART II – IFC

Revise as follows:

101.3 Intent. The purpose of this code is to establish ~~the~~ reasonable minimum requirements consistent with nationally recognized good practice for providing a reasonable level of life safety and property protection from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises and to provide reasonable safety ~~to~~ for fire fighters and emergency responders during emergency operations.

PART III – IRC BUILDING/ENERGY

R101.3 (Supp) Intent. The purpose of this code is to establish reasonable minimum requirements to safeguard the public safety, health and general welfare through affordability, structural strength, means of egress facilities, stability, sanitation, light and ventilation, energy conservation and safety to life and property from fire and other hazards attributed to the built environment and to provide reasonable safety ~~to~~ for fire fighters and emergency responders during emergency operations.

Reason: The purpose of this proposal is clarify the meaning of the "intent" statement presently contained in the *International Building Code*.

The "intent" statement presently contained in the Code is so general that practically any and all proposals to make the Code more restrictive can be justified as being necessary to "safeguard" the public or to provide safety to fire fighters and emergency responders during emergency operations, without regard to either the cost or benefit to the public. This code change attempts to clarify that both cost and benefit to the public should be considered when determining whether or not a new provision or modification to any existing provision should be included in the Code.

While the term "reasonable" is not defined any where in the Code and is a general term, this proposal improves the "intent" statement contained in the Code by at least introducing the concept that the provisions contained in the Code should be "reasonable".

If this proposal is adopted, proponents of future code changes should be required to demonstrate that the proposals pass the "reasonable" test. The "reasonable" test should disqualify code change proposals which address highly improbable events (i.e. "multi-hazard" design) or events for which it is simply impossible to address (i.e. terrorist attacks and "multi-hazard" design).

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

PART I — IBC GENERAL

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 – IRC BUILDING/ENERGY

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

G4–07/08
101.3; IFC 101.3; IRC R101.3

Proponent: Richard Schulte, Schulte & Associates

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL, IFC AND IRC BUILDING/ENERGY CODE DEVELOPMENT COMMITTEES AS 3 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

Revise as follows:

101.3 Intent. 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. Protection from property losses caused by fire and combustion products generated by fire, other than the spread of fire between buildings, is outside the scope of this code.

PART II – IFC

Revise as follows:

101.3 Intent. The purpose of this code is to establish the minimum requirements consistent with nationally recognized good practice for providing a reasonable level of life safety and property protection from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises and to provide safety to fire fighters and emergency responders during emergency operations. Protection from property losses caused by fire and combustion products generated by fire, other than the spread of fire between buildings, is outside the scope of this code.

PART III – IRC BUILDING/ENERGY

R101.3 (Supp) Intent. The purpose of this code is to establish minimum requirements to safeguard the public safety, health and general welfare through affordability, structural strength, means of egress facilities, stability, sanitation, 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. Protection from property losses caused by fire and combustion products generated by fire, other than the spread of fire between buildings, is outside the scope of this code.

Reason: The purpose of this code change is to clarify that it is not the intent of the code to address property losses or business interruption caused by a fire and combustion products generated by a fire, other than the spread of fire between buildings.

In recent code change cycles, manufacturers and installers of passive fire protection products have sought to make more restrictive changes to the code utilizing property protection from fire, smoke and other combustion products as the rationale for the code change proposal. Based upon the fire safety and fire protection provisions presently contained in the code, it can be concluded that it is clearly not the intent of the code to address property losses or business interruption caused by fire, other than fire spread between adjacent buildings.

If the code intended to address the issue of property losses (or business interruption) due to fire, the code would not permit unprotected (non-rated) building construction types, non-rated tenant separations, unenclosed floor openings (including atriums) or unsprinklered buildings.

If it were the intent of the code to address property losses due to fire, the code would have long ago required that all buildings, including 1- and 2-family dwellings, be protected by a sprinkler system.

Including the exception above in the intent statement clarifies the intent of the code with respect to property protection from fire, smoke other and combustion products.

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

PART I – IBC GENERAL

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 – IRC BUILDING/ENERGY

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

G5–07/08

104.11.3 (New), 105.3.1; IRC R104.11.3 (New), R105.3.1

Proponent: Kirk Grundahl, PE, WTCA and Wayne R. Jewell, CBO

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL, AND IRC BUILDING/ENERGY CODE DEVELOPMENT COMMITTEES AS 2 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

1. Add new text as follows:

104.11.3 Rejected approval. If the research report and/or tests are properly submitted in accordance with the statutes of the jurisdiction by a registered design professional or approved agency and the building official rejects the approval of the alternative material, design or method of construction, the building official shall recite the specific section(s) of the code that have been violated and state the specific reasons and/or interpretations that have caused the rejection. Approval of properly submitted work by a registered design professional shall not be withheld without specific cause cited.

2. Revise as follows:

105.3.1 Action on application. The building official shall examine or cause to be examined applications for permits and amendments thereto within a reasonable time after filing. If the application or the construction documents do not conform to the requirements of pertinent laws, the building official shall reject such application in writing, reciting each specific section of the code that has been violated stating the reasons and/or interpretations therefor. If the building official is satisfied that the proposed work conforms to the requirements of this code and laws and ordinances applicable thereto, the building official shall issue a permit therefor as soon as practicable.

PART II – IRC BUILDING/ENERGY

1. Add new text as follows:

R104.11.3 Rejected approval. If the research report and/or tests are properly submitted in accordance with the statutes of the jurisdiction by a registered design professional or approved agency and the building official rejects the approval of the alternative material, design or method of construction, the building official shall recite the specific

section(s) of the code that have been violated and state the specific reasons and/or interpretations that have caused the rejection. Approval of properly submitted work by a registered design professional shall not be withheld without specific cause cited.

2. Revise as follows:

R105.3.1 Action on application. The building official shall examine or cause to be examined applications for permits and amendments thereto within a reasonable time after filing. If the application or the construction documents do not conform to the requirements of pertinent laws, the building official shall reject such application in writing, reciting each specific section of the code that has been violated stating the reasons and/or interpretations therefor. If the building official is satisfied that the proposed work conforms to the requirements of this code and laws and ordinances applicable thereto, the building official shall issue a permit therefor as soon as practicable.

Reason: The purpose of the proposed code changes is to clarify the:
1. actions that need to be taken by the building official when a building permit application, research report or product test(s) is rejected.
2. specific actions that need to be taken by the building official upon reject of any of these items.

There are times when it is not clear why a building official has rejected a building permit application, research report or product test. This change is to emphasize that it is important that any rejection clearly define the reason for the rejection so that the person submitting a building permit application, research report or product test(s) knows how to successfully cure the rejected item(s).

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

PART I – IBC GENERAL

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

PART II – IRC BUILDING/ENERGY

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

G6–07/08
106.1; IFC 105.4.1; IRC R106.1; IEBC 106.1

Proponent: Lori Lee Graham, City of Portland, OR

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL, IFC, IRC BUILDING/ENERGY AND IEBC CODE DEVELOPMENT COMMITTEES AS 4 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

Revise as follows:

106.1 (Supp) General. Submittal documents consisting of construction documents, statement of special inspections and other data shall be submitted in ~~one~~ two or more sets with each permit application. The construction documents shall be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed. Where special conditions exist, the building official is authorized to require additional construction documents to be prepared by a registered design professional.

Exception: The building official is authorized to waive the submission of construction documents and other data not required to be prepared by a registered design professional if it is found that the nature of the work applied for is such that review of construction documents is not necessary to obtain compliance with this code.

PART II – IFC

Revise as follows:

105.4.1 Submittals. Construction documents shall be submitted in ~~one~~ two or more sets and in such form and detail as required by the fire code official. The construction documents shall be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.

PART III – IRC BUILDING/ENERGY

Revise as follows:

R106.1 Submittal documents. Submittal documents consisting of construction documents, ~~special inspection and structural observation programs~~ and other data shall be submitted in ~~one~~ two or more sets with each application for a permit. The construction documents shall be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed. Where special conditions exist, the building official is authorized to require additional construction documents to be prepared by a registered design professional.

> **Exception:** The building official is authorized to waive the submission of construction documents and other data not required to be prepared by a registered design professional if it is found that the nature of the work applied for is such that reviewing of construction documents is not necessary to obtain compliance with this code.

PART IV – IEBC

Revise as follows:

106.1 (Supp) General. Submittal documents consisting of construction documents special inspection and structural observation programs, investigation and evaluation reports, and other data shall be submitted in ~~one~~ two or more sets with each application for a permit. The construction documents shall be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed. Where special conditions exist, the code official is authorized to require additional construction documents to be prepared by a registered design professional.

> **Exception:** The code official is authorized to waive the submission of construction documents and other data not required to be prepared by a registered design professional if it is found that the nature of the work applied for is such that reviewing of construction documents is not necessary to obtain compliance with this code

Reason: Section 106.3.1 of the IBC requires that when the construction documents are approved, one set is retained by the building official and one set is returned to the applicant to be kept at the work site. Since at least 2 sets are required at permit issuance, there should be at least 2 sets submitted. With respect to this requirement the 2006 I-codes are consistent in requiring 2 sets at issuance, but inconsistent in requiring 2 sets at application. As currently written the IBC, IFC, IRC and IEBC require one set at application; the IMC, IPC, IWUIC and the IFGC require 2 sets at application. The codes should be consistent. Companion proposals have been submitted for the IFC, IRC and IEBC.

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

PART I – IBC GENERAL

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 – IRC BUILDING/ENERGY

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

PART IV – IEBC

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

G7–07/08
106.2.3 (New), IEBC 106.2.3 (New)

Proponent: Bill McHugh, Firestop Contractors International Association

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL AND IEBC CODE DEVELOPMENT COMMITTEES AS 2 SEPARATE CODE CHANGES. SEE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

Revise as follows:

106.2.3 Fire and smoke protection features shop drawings. Shop drawings for fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions, horizontal assemblies; rolling and swinging fire doors and hardware; fire rated glazing; fire, smoke or fire/smoke dampers; and through or membrane penetration firestops, shall be submitted to indicate conformance with this code and the construction documents shall be approved prior to the start of system installation.

(Renumber subsequent sections)

PART II – IEBC

Revise as follows:

106.2.3 Fire and smoke protection features shop drawings. Shop drawings for fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions, horizontal assemblies; rolling and swinging fire doors and hardware; fire rated glazing; fire, smoke or fire/smoke dampers; and through or membrane penetration firestops, shall be submitted to indicate conformance with this code and the construction documents shall be approved prior to the start of system installation.

(Renumber subsequent sections)

Reason: Effective fire and smoke resistance rated compartmentation systems features should be given the same level of attention in the code as fire sprinklers, detection and alarm systems, and means of egress as already exists currently in the building code in Chapter 106.1.1.1, Fire protection system shop drawings.

If means of egress and other compartments are to be protected with fire and smoke resistance rated construction, then it is considered vital in importance and attention should be heightened for fire safety, means of egress and general safety. When fire, smoke, or fire/smoke resistance rated compartmentation (firestopping, fire and smoke, fire/smoke dampers, fire rated glazing, rolling and swinging fire doors, fire barriers, fire walls, fire partitions, smoke barriers and smoke partitions) is used for safety, it should be examined with the same scrutiny as other fire protection items during permit application.

Where required by code, compartmentation needs to be properly designed, installed, inspected and maintained for effectiveness when called upon to protect people in buildings. This code change addresses compartmentation fire and smoke protection features importance through construction documents to communicate its importance throughout the design and building process.

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

Analysis: In the 2007 Supplement the sections in the IBC and IEBC are numbered as follows:
106.2.1 Information on construction documents (IEBC Quality of Construction documents)
106.2.2 Fire protection shop drawings
106.2.3 Means of egress
106.2.4 Exterior wall envelope

PART I – IBC GENERAL

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

PART II – IEBC

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

G8–07/08
106.2.3 (New); IEBC 106.2.3(New)

Proponent: Bill McHugh, Firestop Contractors International Association

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL AND IEBC CODE DEVELOPMENT COMMITTEES AS 2 SEPARATE CODE CHANGES. SEE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

Add new text as follows:

106.2.3 Compartmentation elements shop drawings. Shop drawings for the elements of compartmentation systems shall be submitted to indicate conformance with this code and the construction documents shall be approved prior to the start of system installation.

(Renumber subsequent sections)

PART II – IEBC

Add new text as follows:

106.2.3 Compartmentation elements shop drawings. Shop drawings for the elements of compartmentation systems shall be submitted to indicate conformance with this code and the construction documents shall be approved prior to the start of system installation.

(Renumber subsequent sections)

Reason: Effective fire and smoke resistance rated compartmentation systems should be given the same level of attention in the code as fire sprinklers, detection and alarm systems, and means of egress as already exists currently in the building code in Chapter 106.1.1.1, Fire protection system shop drawings.

If means of egress and other compartments are to be protected with fire and smoke resistance rated construction, then it is considered vital in importance and attention should be heightened for fire and life safety. When a fire, smoke, or fire/smoke resistance rated compartmentation (firestopping, fire and smoke, fire/smoke dampers, fire rated glazing, rolling and swinging fire doors, fire barriers, fire walls, fire partitions, smoke barriers and smoke partitions) is used for safety, it should be examined with the same scrutiny as other fire protection items during permit application.

Where required by code, compartmentation needs to be properly designed, installed, inspected and maintained for effectiveness when called upon to protect people in buildings. This code change addresses compartmentation's importance through construction documents to communicate throughout the design and building process.

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

Analysis: In the 2007 Supplement the sections in the IBC and IEBC are numbered as follows:
106.2.1 Information on construction documents (IEBC Quality of Construction documents)
106.2.2 Fire protection shop drawings
106.2.3 Means of egress
106.2.4 Exterior wall envelope

PART I – IBC GENERAL

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

PART II – IEBC

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

G9–07/08

109.3.5, 109.3.5.2 (New), 109.3.6, 109.3.5.4 (New); IEBC 109.3.5, 109.3.5.2 (New), 109.3.6, 109.3.5.4 (New)

Proponent: Bill McHugh, Firestop Contractors International Association

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL AND IEBC CODE DEVELOPMENT COMMITTEES AS 2 SEPARATE CODE CHANGES. SEE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

Revise as follows:

109.3.5 Fire and smoke-resistance-rated construction. The inspection of fire and smoke resistance-rated construction shall be in accordance with Section 109.3.5.1 through 109.3.5.4.

109.3.5.1 Lath and gypsum board inspection. Lath and gypsum board inspections shall be made after lathing and gypsum board, interior and exterior, is in place, but before any plastering is applied or gypsum board joints and fasteners are taped and finished.

Exception: Gypsum board that is not part of a fire-resistance-rated or a shear assembly.

109.3.5.2 Masonry and concrete inspection. The inspection of concrete shall be in accordance with Sections 1704.4, 720, and 721.The inspection of masonry shall be in accordance with Sections 1704.5, 720 and 721.

109.3.5.3 ~~109.3.6~~ Fire and Smoke-Resistant Penetrations. Protection of joints and penetrations in fire-resistance-rated assemblies, smoke barriers and smoke partitions shall not be concealed from view until inspected and approved.

109.3.5.4 Fire and smoke-resistant openings. Protection of openings in fire-resistance-rated assemblies, smoke barriers and smoke partitions shall not be concealed from view until inspected and approved.

(Renumber subsequent sections)

PART II – IEBC

Revise as follows:

109.3.5 Fire and Smoke-Resistance-Rated Construction. The inspection of fire and smoke resistance-rated construction shall be in accordance with Section 109.3.5.1 through 109.3.5.4.

109.3.5.1 Lath or gypsum board inspection. Lath and gypsum board inspections shall be made after lathing and gypsum board, interior and exterior, is in place but before any plastering is applied or before gypsum board joints and fasteners are taped and finished.

Exception: Gypsum board that is not part of a fire-resistance-rated assembly or a shear assembly.

109.3.5.2 Masonry and concrete inspection. The inspection of concrete shall be in accordance with the *International Building Code*, Sections 1704.4, 720, and 721. The inspection of masonry shall be in accordance with the *International Building Code*, Sections 1704.5, 720 and 721.

109.3.5.3 ~~109.3.6~~ Fire and Smoke-Resistant Penetrations. Protection of joints and penetrations in fire-resistance-rated assemblies, smoke barriers and smoke partitions shall not be concealed from view until inspected and approved.

109.3.5.4 Fire and Smoke-Resistant Openings. Protection of openings in fire-resistance-rated assemblies, smoke barriers and smoke partitions shall not be concealed from view until inspected and approved.

(Renumber subsequent sections)

Reason: Where used in the code, fire and smoke resistance rated compartmentation is vital to fire and life safety, providing protection that must perform when called upon. The purpose of this code change is to reorganize this section for ease of use of the code. The change also makes reference to fire and smoke resistance rated construction that makes compartmentation systems work in buildings.

Protection of penetrations and joints in fire and smoke resistance rated construction is very important to maintain tenability for egress or until evacuated from a compartment, in compartmentation used in corridors, occupancy separations, and between floors. Current code only requires that fire resistant penetrations and joints not be concealed from view until inspected and approved. Both fire and smoke-resistance-rated penetrations and joints should be included.

This code change proposal brings consistency between the fire-resistance-rated penetrations and the fire/smoke-resistance-rated or smoke-resistance-rated penetrations, which may or may not have a fire-resistance-rating, while bringing all elements of compartmentation to one location, so all elements and assemblies, penetrations and openings are included.

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

PART I – IBC GENERAL

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

PART II – IEBC

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

G10–07/08
109.3.6; IEBC 109.3.6

Proponent: Bill McHugh, Firestop Contractors International Association

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL AND IEBC CODE DEVELOPMENT COMMITTEES AS 2 SEPARATE CODE CHANGES. SEE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

Revise as follows:

109.3.6 Fire and smoke-resistant penetrations. Protection of joints and penetrations in fire-resistance-rated assemblies, smoke barriers and smoke partitions shall not be concealed from view until inspected and approved.

PART II – IEBC

Revise as follows:

109.3.6 Fire and smoke-resistant penetrations. Protection of joints and penetrations in fire-resistance-rated assemblies, smoke barriers and smoke partitions shall not be concealed from view until inspected and approved.

Reason: Protection of penetrations and joints in fire and smoke resistance rated construction is very important to maintain tenability for egress or remaining in place until evacuated from a compartment, in compartmentation used in corridors, occupancy separations, and between floors.

Current code only requires that fire resistant penetrations and joints not be concealed from view until inspected and approved. Both fire and smoke-resistance-rated penetrations and joints should be included as smoke travel is very important for tenability. This code change proposal brings consistency between the fire-resistance-rated penetrations and the fire/smoke-resistance-rated or smoke-resistance-rated penetrations, which may or may not have a fire-resistance-rating.

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

PART I – IBC GENERAL

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

PART II – IEBC

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

G11–07/08
109.3.6, 109.3.7 (New), Chapter 35 (New)

Proponent: Tony Crimi, A.C. Consulting Solutions, Inc., representing the International Firestop Council

1. Revise as follows:

109.3.6 Fire-resistant penetrations. Protection of ~~joints and~~ penetrations in fire-resistance-rated assemblies shall not be concealed from view until inspected and approved. The building official is authorized in accordance with Section 109.4 to allow inspection of penetrations of the types specified in 712.3.1.2 and 712.4.1..12 by an approved inspection agency in accordance with ASTM E2174, or to adopt other policies and procedures in compliance with the intent and purpose of this code.

2. Add new text as follows:

109.3.7 Fire-resistive joints. Protection of joints in fire-resistance-rated assemblies shall not be concealed from view until inspected and approved. The building official is authorized in accordance with Section 109.4 to allow inspection of joints of the types specified in 713.3 and 713.4 by an approved inspection agency in accordance with ASTM E2393, or to adopt other policies and procedures in compliance with the intent and purpose of this code.

(Renumber subsequent sections)

3. Add standards to Chapter 35 as follows:

ASTM

E2174-04	Standard Practice for On-Site Inspection of Installed Fire Stops
E2393-04	Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barrier

Reason: Add a reference to two new Consensus Standards developed at ASTM for inspection of installed penetration firestop systems, fire-resistive joints, and perimeter fire barriers.

The Code already mandates proper installation of penetration firestops to maintain the integrity of vertical and horizontal fire or smoke separations. This Standard identifies effective techniques for the field inspection of these systems, and provides consistent procedures needed to conduct and document the on-site assessment of the installations.

Installation of firestop systems and joints is often conducted by trades who do not have the extensive knowledge or training needed to ensure that these critical life safety systems are installed correctly. At the same time, firestop and joint system designs and materials are increasing in number and sophistication. The current code relies heavily on Installers, Designers, and Code Officials to verify proper system selection and installation. In response to this reality, a standard practice was developed within the ASTM process to allow inspections of through-penetration firestops, joints, and perimeter fire barrier systems to be conducted in a thorough and consistent manner, with standardized report formats, regardless of the Trade or individual conducting the inspection. Part of the impetus for the development of that standard was the recognition that jurisdictions sometimes do not have sufficient resources themselves to ensure that all penetrations and joints are firestopped properly. In any project, the number of joints and penetrations can range from hundreds to a few thousand in a single building. The addition of these new Standards to the Code would provide and identify a means for both large and small building departments to have effective tools to instruct either their own staff or third party inspection agencies on good methodologies for inspection of these important systems. The inclusion of consensus standards would ensure that required inspections are conducted consistently, fairly, and adequately, while also standardizing inspection reports, so that they will be of a uniform high quality.

The proposed code change would provide the code official the option of having a third party (e.g. approved inspection agency) to conduct the inspection of joints and penetrations, while preserving the option to utilize other policies and procedures consistent with the intent of the Code.

The current editions of **ASTM E2174 and ASTM E2393** are dated 2004.

ASTM E2174-04 Standard Practice for On-site Inspection of Installed Fire Stops

ASTM E2393-04, Standard practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers

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 E2174 and E2393, for compliance with ICC criteria for referenced standards given in Section 3.6. of Council Policy #CP 28 will be posted on the ICC website on or before January 15, 2008.

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

G12–07/08
112.2 (New); IFC 108.2 (New); IEBC 112.2 (New); IRC R112.2 (New)

Proponent: Keith Drummond, CBO, CFM, MCP, County of Greenville, NC

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL, IFC, IEBC AND IRC BUILDING AND ENERGY CODE DEVELOPMENT COMMITTEES AS 4 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

Add new text as follows:

112.2 Application for appeal. Any person directly affected by a decision of the code official or a notice or order issued under this code shall have the right to appeal to the board of appeals, provided that a written application for appeal is filed within 20 days after the day the decision, notice or order was served. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted there under have been incorrectly interpreted, the provisions of this code do not fully apply, or the requirements of this code are adequately satisfied by other means

(Renumber subsequent sections)

PART II – IFC

Add new text as follows:

108.2 Application for appeal. Any person directly affected by a decision of the code official or a notice or order issued under this code shall have the right to appeal to the board of appeals, provided that a written application for appeal is filed within 20 days after the day the decision, notice or order was served. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted there under have been incorrectly interpreted, the provisions of this code do not fully apply, or the requirements of this code are adequately satisfied by other means

(Renumber subsequent sections)

PART III – IEBC

Add new text as follows:

112.2 Application for appeal. Any person directly affected by a decision of the code official or a notice or order issued under this code shall have the right to appeal to the board of appeals, provided that a written application for appeal is filed within 20 days after the day the decision, notice or order was served. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted there under have been incorrectly interpreted, the provisions of this code do not fully apply, or the requirements of this code are adequately satisfied by other means

(Renumber subsequent sections)

PART IV – IRC BUILDING/ENERGY

Add new text as follows:

R112.2 Application for appeal. Any person directly affected by a decision of the code official or a notice or order issued under this code shall have the right to appeal to the board of appeals, provided that a written application for appeal is filed within 20 days after the day the decision, notice or order was served. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted there under have been incorrectly interpreted, the provisions of this code do not fully apply, or the requirements of this code are adequately satisfied by other means

(Renumber subsequent sections)

Reason: This change was forwarded to the Code Correlation Committee Secretary and direction was given that this change would have to be approved by the ICC body**.** This change would bring all ICC Codes into uniformity to establish a requirement for a definitive time to file an appeal with the Board of Appeals. This period would be 20 days after the decision or Notice from the Code Official. Currently some of the ICC Codes have the 20 day requirement, and Code Change Proposals have been submitted for all ICC Codes to contain this 20 day time frame.

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

PART I – IBC GENERAL

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 – IEBC

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

PART IV – IRC BUILDING/ENERGY

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

G13–07/08

202, 502.1, 902.1 (IFC [B] 902.1), 1612.2, 412.2.2, [F] 415.4, [F] 903.2.8.1 (IFC 903.2.8.1), 1203.3, 1915.5, 2111.13.3, 2308.11.2, 2308.12.2

Proponent: Philip Brazil, PE, Reid Middleton, Inc., representing himself

Revise as follows:

SECTION 202
DEFINITIONS

BASEMENT (for other than flood loads). See Sections 502.1 ~~and 1612.2~~.

BASEMENT (for flood loads). See Section 1612.2.

STORY ABOVE GRADE PLANE. (Supp) Any story having its finished floor surface entirely above grade plane, or in which the finished surface of the floor or roof next above is:

1. More than 6 feet (1829 mm) above grade plane; or
2. More than 12 feet (3658 mm) above the finished ground level at any point.

502.1 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

BASEMENT. (Supp) A story that is not a story above grade plane (See "Story above grade plane" in Section 202).

The definition of "Basement" does not apply to the provisions of Section 1612 for flood loads (see "Basement" in Section 1612.2).

902.1 (IFC [B] 902.1) Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

FIRE AREA. The aggregate floor area enclosed and bounded by fire walls, fire barriers, exterior walls or fire resistance-rated horizontal assemblies of a building. Areas of the building not provided with surrounding walls shall be included in the fire area if such areas are included within the horizontal projection of the roof or floor next above.

1612.2 Definitions. The following words and terms shall, for the purposes of this section, have the meanings shown herein.

BASEMENT. The portion of a building having its floor subgrade (below ground level) on all sides.

The definition of "Basement" is limited in application to the provisions of Section 1612 (see "Basement" in Section 502.1).

412.2.2 Basements. Where hangars have basements, ~~the~~ floor over ~~the~~ basements shall be of Type IA construction and shall be made tight against seepage of water, oil or vapors. There shall be no opening or communication between ~~the~~ basements and the hangar. Access to ~~the~~ basements shall be from outside only.

[F] 415.4 Special provisions for Group H-1 occupancies. Group H-1 occupancies shall be in buildings used for no other purpose, shall not exceed one story in height and be without ~~a~~ basements, crawl spaces or other under-floor spaces. Roofs shall be of lightweight construction with suitable thermal insulation to prevent sensitive material from reaching its decomposition temperature. Group H-1 occupancies containing materials which are in themselves both physical and health hazards in quantities exceeding the maximum allowable quantities per control area

[F] 903.2.8.1 (IFC 903.2.8.1) (Supp) Repair garages. An automatic sprinkler system shall be provided throughout all buildings used as repair garages in accordance with Section 406, as shown:

1. Buildings having two or more stories above grade plane, including basements, with a fire area containing a repair garage exceeding 10,000 square feet (929 m_2).
2. Buildings no more than one story above grade plane, with a fire area containing a repair garage exceeding 12,000 square feet (1115 m^2).
3. Buildings with a repair garages servicing vehicles parked in ~~the~~ basements.

1203.3 Under-floor ventilation. The space between the bottom of the floor joists and the earth under any building except spaces occupied by ~~a~~ basements or cellars shall be provided with ventilation openings through foundation walls or exterior walls. Such openings shall be placed so as to provide cross ventilation of the under-floor space.

1915.5 (Supp) Fire-resistance-rating protection. Pipe columns shall be of such size or so protected as to develop the required fire-resistance ratings specified in Table 601. Where an outer steel shell is used to enclose the fire protective covering, the shell shall not be included in the calculations for strength of the column section. The minimum diameter of pipe columns shall be 4 inches (102 mm) except that in structures of Type V construction not exceeding three stories or 40 feet (12 192 mm) in height, pipe columns used in ~~the~~ basements and as secondary steel members shall have a minimum diameter of 3 inches (76 mm).

2111.13.3 Exterior air intake. The exterior air intake shall be capable of providing all combustion air from the exterior of the dwelling. The exterior air intake shall not be located within ~~the~~ a garage, attic, basement or crawl space of the dwelling nor shall the air intake be located at an elevation higher than the firebox. The exterior air intake shall be covered with a corrosion-resistant screen of $^1/_4$-inch (6.4 mm) mesh.

2308.11.2 (Supp) Concrete or masonry. Concrete or masonry walls and stone or masonry veneer shall not extend above ~~the~~ a basement.

Exceptions:

1. Stone and masonry veneer is permitted to be used in the first two stories above grade plane or the first three stories above grade plane where the lowest story has concrete or masonry walls in Seismic Design Category B, provided that structural use panel wall bracing is used and the length of bracing provided is one- and one half times the required length as determined in Table 2308.9.3(1).
2. Stone and masonry veneer is permitted to be used in the first story above grade plane or the first two stories above grade plane where the lowest story has concrete or masonry walls in Seismic Design Category B or C.
3. Stone and masonry veneer is permitted to be used in the first two stories above grade plane in Seismic Design Categories B and C, provided the following criteria are met:
   3.1. Type of brace per Section 2308.9.3 shall be Method 3 and the allowable shear capacity in accordance with Table 2306.4.1 shall be a minimum of 350 plf (5108 N/m).
   3.2. The bracing of the top story shall be located at each end and at least every 25 feet (7620 mm) o.c. but not less than 40 percent of the braced wall line. The bracing of the first story shall be located at each end and at least every 25 feet (7620 mm) o.c. but not less than 35 percent of the braced wall line.
   3.3. Hold-down connectors shall be provided at the ends of braced walls for the second floor to first floor wall assembly with an allowable design of 2,000 pounds (8896 N). Hold-down connectors

shall be provided at the ends of each wall segment of the braced walls for the first floor to foundation with an allowable design of 3,900 pounds (17 347 N). In all cases, the hold-down connector force shall be transferred to the foundation.

3.4. Cripple walls shall not be permitted.

2308.12.2 (Supp) Concrete or masonry. Concrete or masonry walls and stone or masonry veneer shall not extend above ~~the~~ a basement.

Exception: Stone and masonry veneer is permitted to be used in the first story above grade plane in Seismic Design Category D, provided the following criteria are met:

1. Type of brace in accordance with Section 2308.9.3 shall be Method 3 and the allowable shear capacity in accordance with Table 2306.4.1 shall be a minimum of 350 plf (5108 N/m).
2. The bracing of the first story shall be located at each end and at least every 25 feet (7620 mm) o.c. but not less than 45 percent of the braced wall line.
3. Hold-down connectors shall be provided at the ends of braced walls for the first floor to foundation with an allowable design of 2,100 pounds (9341 N).
4. Cripple walls shall not be permitted.

Reason: Proposal G8-06/07-AMPC1 revised the definition of "basement" to be a story that is not a story above grade plane. The proposal extends these changes to other sections of the IBC. A "story" is a vertical space between each floor and between the upper floor and the roof. There are instances where a basement is assumed to be all stories below grade plane instead of an individual story below grade plane. The proposal makes the necessary corrections for consistency with the revised definition of "basement."

A comprehensive review of the 2006 IBC and 2007 Supplement was made during the preparation of this proposal and it was determined that, except for flood loads (below), the code sections referring to basements do so consistent with the revised definition of "basement" except for the code sections in this proposal. Approximately 50 such code sections were studied.

The definition of "story "in Section 202 establishes the vertical space as "between the upper surface of a floor and the upper surface of the floor or roof next above." The proposal revises the definitions of "story above grade plane" in Section 202 and "fire area" in Section 902.1 for consistency with this definition.

The definition of "basement" in Section 502.1 applies to all provisions of the IBC except for flood loads in Section 1612 for which there is a separate definition of "basement" (see Section 1612.2). This proposal adds language following the definitions in Sections 502.1 and 1612.2 and revises Section 202 to clarify the application of both definitions.

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

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

G14–07/08

202 (New), 403.1, 707.14.1; IFC 903.3.5.2 (IBC [F] 903.3.5.2), 903.4.3 (IBC [F] 903.4.3), 907.2.12 (IBC [F] 907.2.12), 907.7.3.2 (IBC [F] 907.7.3.2)

Proponent: Tom Lariviere, Madison Fire Department, MS, representing the Joint Fire Service Review Committee

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL AND IFC CODE DEVELOPMENT COMMITTEES AS 2 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

1. Add a new definition as follows:

SECTION 202
DEFINITIONS

HIGH-RISE BUILDING. A building with an occupied floor located more than 75 feet (23 m) above the lowest level of fire department vehicle access.

2. Revise as follows:

403.1 Applicability. ~~The provisions of this section shall apply to buildings with an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.~~ High rise buildings shall comply with Section 403.2 through 403.18.

Exception: The provisions of ~~this~~ Section 403.2 through 403.18 shall not apply to the following buildings and structures:

1. Airport traffic control towers in accordance with Section 412.
2. Open parking garages in accordance with Section 406.3.
3. Buildings with an occupancy in Group A-5 in accordance with Section 303.1.
4. Low-hazard special industrial occupancies in accordance with Section 503.1.1.
5. Buildings with an occupancy in Group H-1, H-2 or H-3 in accordance with Section 415.

707.14.1 (Supp) Elevator lobby. An enclosed elevator lobby shall be provided at each floor where an elevator shaft enclosure connects more than three stories. The lobby shall separate the elevator shaft enclosure doors from each floor by fire partitions equal to the fire-resistance rating of the corridor and the required opening protection. Elevator lobbies shall have at least one means of egress complying with Chapter 10 and other provisions within this code.

Exceptions:

1. Enclosed elevator lobbies are not required at the street floor, provided the entire street floor is equipped with an automatic sprinkler system in accordance with Section 903.3.1.1.
2. Elevators not required to be located in a shaft in accordance with Section 707.2 are not required to have enclosed elevator lobbies.
3. Where additional doors are provided at the hoistway opening in accordance with Section 3002.6. Such doors shall be tested in accordance with UL 1784 without an artificial bottom seal.
4. In other than Group I-2 and I-3~~,~~ and high-rise buildings ~~having occupied floors located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access~~, enclosed elevator lobbies are not required where the building is protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
5. Smoke partitions shall be permitted in lieu of fire partitions to separate the elevator lobby at each floor where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
6. Enclosed elevator lobbies are not required where the elevator hoistway is pressurized in accordance with Section 707.14.2.

PART II – IFC

Revise as follows:

903.3.5.2(IBC [F] 903.3.5.2) Secondary water supply. A secondary on-site water supply equal to the hydraulically calculated sprinkler demand, including the hose stream requirement, shall be provided for high-rise buildings required to comply with Section 403 of the *International Building Code* in Seismic Design Category C, D, E or F as determined by this code. The secondary water supply shall have a duration of not less than 30 minutes as determined by the occupancy hazard classification in accordance with NFPA 13.

~~Exception:~~ ~~Existing buildings.~~

903.4.3 (IBC [F] 903.4.3) Floor control valves. Approved supervised indicating control valves shall be provided at the point of connection to the riser on each floor in high-rise buildings required to comply with Section 403 of the *International Building Code*.

907.2.12 (IBC [F] 907.2.12) (Supp) High-rise buildings. ~~Buildings with a floor used for human occupancy located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access~~ High rise buildings shall be provided with an automatic fire alarm system and an emergency voice/alarm communication system in accordance with Section 907.6.2.2.

Exceptions:

1. Airport traffic control towers in accordance with Sections 907.2.21 and 412.
2. Open parking garages in accordance with Section 406.3.
3. Buildings with an occupancy in Group A-5 in accordance with Section 303.1.
4. Low-hazard special occupancies in accordance with Section 503.1.1.
5. Buildings with an occupancy in Group H-1, H-2 or H-3 in accordance with Section 415.
6. In Group I-1 and I-2 occupancies, the alarm shall sound at a constantly attended location and general occupant notification shall be broadcast by the paging system.

907.7.3.2 (IBC [F] 907.7.3.2) (Supp) High-rise buildings. In ~~buildings with a floor used for human occupancy that is located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access,~~ high rise buildings required to comply with Section 403 of the *International Building Code*, a separate zone by floor shall be provided for all of the following types of alarm-initiating devices where provided:

1. Smoke detectors.
2. Sprinkler water-flow devices.
3. Manual fire alarm boxes.
4. Other approved types of automatic fire detection devices or suppression systems.

Reason: The term "High-Rise Building" is utilized in numerous locations through-out the IBC and IFC. However, there is no definition for a "High-Rise Building." This definition is proposed from and is consistent with the high-rise building applicability language in section 403.1 of the IBC. The definition will be applied to both the IFC and the IBC and provide consistency.

Additionally, Section 903.3.5.2 is revised by deleting the exception. The exception refers to existing buildings and is not necessary in this section. IFC Section 903.6 deals specifically with existing buildings and this provision is not required in that section. Therefore, it is not necessary under the major section 903.3 since it does not address existing buildings at all.

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

PART I – IBC GENERAL

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

PART II – IFC

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

G15–07/08
202 (New) [IFC 202 (New)]

Proponent: Anthony C. Apfelbeck, City of Altamonte Springs, FL; William Connolly, Safe Buildings Coordinating Council, Washington D.C.; James C. Gerren, Clark County Department of Development Services, NV

Add new definition as follows:

SECTION 202
DEFINITIONS

HIGH-RISE BUILDING. (IFC 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.

Reason: Apfelbeck: The term "High-Rise Building" is utilized in numerous locations through-out the IFC. However, there is no definition contained in the IFC for a "High-Rise Building." This definition is proposed from and is consistent with the high-rise building applicability language in Section 403.1 of the IBC.

Connolly: The term "High-Rise Building" is currently undefined within the IFC. This term is utilized in a number of locations within the document with specific requirements that are tied to the term. Defining "High-Rise Building" is necessary to provide guidance and clarity to the intended application of these specific code requirements. The proposed definition is derived from the high rise building applicability language in Section 403.1 of the IBC.

Gerren: The purpose of the proposed code change is to clarify the code. There is currently no specific definition of the term "high-rise building" in the IBC, although IBC Section 403.1 indicates that the provisions of Section 403, which is titled "High-Rise Buildings," apply "to buildings with an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access." There are several locations in the IBC that reference requirements for high-rise buildings without a reference to Section 403 or criteria related to an occupied floor located more than 75 feet above the lowest level of fire department vehicle access. For example:

1. Section 903.3.5.2 requires a secondary on-site water supply for "high-rise buildings in Seismic Design Category C, D, E or F."
2. Section 903.4.3 requires approved supervised indicating sprinkler system control valves at the point of connection to the riser on each floor "in high-rise buildings."
3. Section 3410.6.18 mentions "high-rise buildings" in the discussion about the evaluation of incidental use areas in the compliance alternatives approach allowed in Chapter 34 ("Existing Buildings").

The proposed addition of a definition of "high-rise building" in Section 202 is a simple way to eliminate any confusion over what the IBC considers as a high-rise building.

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

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

G16–07/08
202 (New); IECC 202; IFC 202; IFGC 202; IMC 202; IPMC 202; IRC 202

Proponent: Bob Eugene, Underwriters Laboratories Inc.

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL, IECC, IFC, IFGC, IMC, IPMC AND IRC BUILDING/ENERGY CODE DEVELOPMENT COMMITTEES AS 7 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

Add new definition as follows:

SECTION 202
DEFINITIONS

LABELED. Equipment, materials or products to which have been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

PART II – IECC

Revise as follows:

SECTION 202
GENERAL DEFINITIONS

LABELED. ~~Devices, equipment, or materials to which have been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items that attests to compliance with a specific standard.~~

Equipment, materials or products to which have been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

PART III – IFC

Revise as follows:

SECTION 202
GENERAL DEFINITIONS

LABELED. ~~Equipment or material to which has been attached a label, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of production of labeled equipment or materials, and by whose labeling is indicated compliance with nationally recognized standards or tests to determine suitable usage in a specified manner.~~

Equipment, materials or products to which have been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

PART IV – IFGC

Revise as follows:

SECTION 202 (IFGC)
GENERAL DEFINITIONS

LABELED. ~~Devices, equipment, appliances or materials to which have been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and by whose label the manufacturer attests to compliance with applicable nationally recognized standards.~~

Equipment, materials or products to which have been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

PART V – IMC

Revise as follows:

SECTION 202
GENERAL DEFINITIONS

LABELED. ~~Devices, equipment, appliances or materials to which have been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and by whose label the manufacturer attests to compliance with applicable nationally recognized standards.~~

Equipment, materials or products to which have been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

PART VI – IPMC

Revise as follows:

SECTION 202
GENERAL DEFINITIONS

LABELED. ~~Devices, equipment, appliances, or materials to which has been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and by whose label the manufacturer attests to compliance with applicable nationally recognized standards.~~

Equipment, materials or products to which have been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

PART VII – IRC BUILDING/ENERGY

Revise as follows:

LABELED. ~~Devices, equipment or materials to which have been affixed a label, seal, symbol or other identifying mark of a testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above labeled items that attests to compliance with a specific standard.~~

Equipment, materials or products to which have been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

Reason: The term "labeled" is used throughout the *International Building* Code and other I-Codes. It is preferred to have such a definition in Chapter 2 rather than elsewhere in code. The definition complements the definition of "LABEL" currently in IBC Section 1702.1 and the requirements of IBC Section 1703.5. Through a series of proposals, the exact same generic text is being proposed for each of the I-codes where the term is used.

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

PART I – IBC GENERAL

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

PART II – IECC

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

PART III – IFC

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

PART IV – IFGC

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

PART V – IMC

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

PART VI – IPMC

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

PART VII – IRC BUILDING/ENERGY

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

G17–07/08
202; IECC 202; IFC 202 (IBC [F] 902.1); IFGC 202; IMC 202; IRC 202

Proponent: Bob Eugene, Underwriters Laboratories Inc.

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL, IECC, IFC, IFGC, IMC AND IRC BUILDING/ENERGY CODE DEVELOPMENT COMMITTEES AS 6 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

1. Revise as follows:

SECTION 202
DEFINITIONS

LISTED. ~~See Section 902.1.~~ Equipment, materials, products or services included in a list published by an organization acceptable to the code official and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose.

PART II – IECC

Revise as follows:

SECTION 202
GENERAL DEFINITIONS

LISTED. ~~Equipment, appliances, assemblies or materials included in a list published by an approved testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of production of listed equipment, appliances, assemblies or material, and whose listing states either that the equipment, appliances, assemblies, or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner.~~

Equipment, materials, products or services included in a list published by an organization acceptable to the code official and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose.

PART III – IFC

Revise as follows:

SECTION 202 (IBC [F] 902.1)
GENERAL DEFINITIONS

LISTED. ~~Equipment or materials included on a list published by an approved testing laboratory, inspection agency or other organization concerned with current product evaluation that maintains periodic inspection of production of listed equipment or materials, and whose listing states that equipment or materials comply with approved nationally recognized standards and have been tested or evaluated and found suitable for use in a specified manner.~~

Equipment, materials, products or services included in a list published by an organization acceptable to the code official and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose.

PART IV – IFGC

Revise as follows:

SECTION 202
GENERAL DEFINITIONS

LISTED. ~~Equipment, appliances or materials included in a list published by a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of production of listed equipment, appliances or materials, and whose listing states either that the equipment, appliance or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner. The means for identifying listed equipment, appliances or materials may vary for each testing laboratory, inspection agency or other organization concerned with product evaluation, some of which do not recognize equipment, appliances or materials as listed unless they are also labeled. The authority having jurisdiction shall utilize the system employed by the listing organization to identify a listed product.~~

Equipment, materials, products or services included in a list published by an organization acceptable to the code official and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose.

PART V – IMC

Revise as follows:

SECTION 202
GENERAL DEFINITIONS

LISTED. ~~Equipment, appliances or materials included in a list published by a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation that maintains periodic inspection of production of listed equipment, appliances or materials, and whose listing states either that the equipment, appliances or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner. Not all testing laboratories, inspection agencies and other organizations concerned with product evaluation use the same means for identifying listed equipment, appliances or materials. Some do not recognize equipment, appliances or materials as listed unless they are also labeled. The authority having jurisdiction shall utilize the system employed by the listing organization to identify a listed product.~~

Equipment, materials, products or services included in a list published by an organization acceptable to the code official and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose.

PART VI – IRC BUILDING/ENERGY

LISTED ~~AND LISTING.~~ ~~Terms referring to equipment that is shown in a list published by an approved testing agency qualified and equipped for experimental testing and maintaining an adequate periodic inspection of current productions and whose listing states that the equipment complies with nationally recognized standards when installed in accordance with the manufacturer's installation instructions.~~

Equipment, materials, products or services included in a list published by an organization acceptable to the code official and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose.

Reason: The term "listed" is used in nearly every chapter of the *International Building Code* and throughout the other I-Codes. It is preferred to have such a definition in Chapter 2 of the IBC rather than in Chapter 9. The definition is somewhat revised from the definition currently in IBC Chapter 9, but through a series of proposals, the exact same generic text is being proposed for each of the I-codes where the term is used.

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

PART I – IBC GENERAL

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

PART II – IECC

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

PART III – IFC

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

PART IV – IFGC

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

PART V – IMC

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

PART VI – IRC BUILDING/ENERGY

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

G18–07/08
303.1 (IFC [B] 202)

Proponent: Thomas Kinsman, T. A. Kinsman Consulting Company, representing himself

Revise as follows:

303.1 (IFC [B] 202) (Supp) Assembly Group A. Assembly Group A occupancy includes, among others, the use of a building or structure, or a portion thereof, for the gathering of persons for purposes such as civic, social or religious functions; recreation, food or drink consumption; or awaiting transportation.

Exceptions:

1. A building or tenant space used for assembly purposes with an occupant load of less than 50 persons shall be classified as a Group B occupancy.
2. A room or space used for assembly purposes with an occupant load of less than 50 persons and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
3. A room or space used for assembly purposes that is less than 750 square feet (70 m_2) in area and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
4. Assembly areas that are accessory to Group E occupancies and Group B educational occupancies for students above the 12^{th} grade are not considered separate occupancies except when applying the assembly occupancy requirements of Chapter 11.
5. Accessory religious educational rooms and religious auditoriums with occupant loads of less than 100 are not considered separate occupancies.

(Portions of section not shown remain unchanged)

Reason: The purpose of this code change is to permit assembly areas accessory to Group B educational facilities to be treated similar to those accessory to Group E. The existing exception allows cafeterias, gymnasiums, and classrooms with greater than 49 occupants to remain as E occupancies, and it makes common sense to permit the same for Group B educational occupancies.

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

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

G19–07/08
303.1 (IFC 202)

Proponent: James C. Gerren, Clark County Department of Development Services, NV

Revise as follows:

303.1 (IFC 202) (Supp) Assembly Group A. Assembly Group A occupancy includes, among others, the use of a building or structure, or a portion thereof, for the gathering of persons for purposes such as civic, social or religious functions; recreation, food or drink consumption; or awaiting transportation.

Exceptions:

1. A building or tenant space used for assembly purposes with an occupant load of less than 50 persons shall be classified as a Group B occupancy.
2. A room or space used for assembly purposes with an occupant load of less than 50 persons and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
3. A room or space used for assembly purposes that is less than 750 square feet (70 m_2) in area and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
4. Assembly areas that are accessory to Group E occupancies are not considered separate occupancies except when applying the assembly occupancy requirements of Chapter 11.
5. Accessory religious educational rooms and religious auditoriums with occupant loads of less than 100 are not considered separate occupancies.

A-1 Assembly uses, usually with fixed seating, intended for the production and viewing of the performing arts or motion pictures including, but not limited to:

Motion picture theaters
Symphony and concert halls
Television and radio studios admitting an audience
Theaters

A-2 Assembly uses intended for food and/or drink consumption including, but not limited to:

Banquet halls
Night clubs
Restaurants
Taverns and bars

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
Places of religious worship
Community halls
Courtrooms
Dance halls (not including food or drink consumption)
Exhibition halls
Funeral parlors
Gymnasiums (without spectator seating)

~~Indoor~~ swimming pools (without spectator seating)
~~Indoor~~ tennis courts (without spectator seating)
Lecture halls
Libraries
Museums
Waiting areas in transportation terminals
Pool and billiard parlors

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
Tennis courts

A-5 Assembly uses intended for participation in or viewing outdoor activities including, but not limited to:
Amusement park structures
Bleachers
Grandstands
Stadiums

Reason: The purpose of the proposed code change is to clarify the code. Indoor swimming pools and indoor tennis courts without spectator seating are defined as Group A-3, while indoor swimming pools and indoor tennis courts with spectator seating are defined as Group A-4. Therefore, the current definitions of Groups A-3 and A-4 address indoor swimming pools and tennis courts, but do not address outdoor swimming pools and outdoor tennis courts without spectator seating. The proposed code change would define all swimming pools and tennis courts that have no spectator seating and are intended for recreation or amusement as Group A-3. Indoor swimming pools and indoor tennis courts with spectator seating would remain defined as Group A-4. Outdoor swimming pools and tennis courts that have spectator seating and are intended for outdoor sporting events and activities are assumed to be defined as Group A-5.

This code change is necessary to clarify the appropriate occupancy classification for outdoor swimming pools and outdoor tennis courts that are used for recreation or amusement without any spectator seating. With a large mixed occupancy facility, such as a hotel-casino resort, the swimming pools are typically outdoors and incorporated into the building design (e.g., on an occupied roof accessible to guests). In these types of environments, the swimming pools and/or tennis courts are used for recreation or amusement, not spectator viewing. As such, the use of these outdoor swimming pools and tennis courts is the same as the indoor swimming pool and indoor tennis courts currently defined as Group A-3 in IBC Section 303.1. The only difference is that in one case, the swimming pool or tennis courts are indoors. Otherwise, the use is completely identical.

The occupancy classification of outdoor swimming pools and outdoor tennis courts that are used for recreation or amusement and that have no spectator seating has a significant impact on the required minimum number of plumbing fixtures. Per IBC Section and Table 2902.1, there is a substantial difference in the minimum number of plumbing fixtures required for a Group A-3 occupancy vs. a Group A-4 occupancy. The larger number of plumbing fixtures required for Groups A-4 and A-5 (identical requirements) are not warranted for outdoor swimming pools and outdoor tennis courts that are used for recreation or amusement and that have no spectator seating. Such venues are identical in use to indoor swimming pools and indoor tennis courts that are already defined as Group A-3, and therefore should be subject to the same code requirements (i.e., plumbing fixture counts).

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

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

G20 –07/08
303.1 (IFC 202)

Proponent: Don Lee, DLR Group, representing himself

Revise as follows:

303.1 (IFC 202) (Supp) Assembly Group A. Assembly Group A occupancy includes, among others, the use of a building or structure, or a portion thereof, for the gathering of persons for purposes such as civic, social or religious functions; recreation, food or drink consumption; or awaiting transportation.

Exceptions:

1. A building or tenant space used for assembly purposes with an occupant load of less than 50 persons shall be classified as a Group B occupancy.
2. A room or space used for assembly purposes with an occupant load of less than 50 persons and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.

3. A room or space used for assembly purposes that is less than 750 square feet (70 m_2) in area and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
4. ~~Assembly areas that are accessory to Group E occupancies are not considered separate occupancies except when applying the assembly occupancy requirements of Chapter 11.~~
   For the purpose of allowable area Assembly areas that are accessory to Group E occupancies are not considered separate occupancies. All other requirements of the code for the Assembly areas shall apply.
5. Accessory religious educational rooms and religious auditoriums with occupant loads of less than 100 are not considered separate occupancies.

Reason: This change is intended to clarify the intent of the accessory assembly areas within schools. The present changes made in the 2007 Supplement do address the concern but fall short in defining the other assembly requirements of the code. The 2007 Supplement does not address the assembly portions of Chapters 9 and 10 which need to be recognized.

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

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

G21–07/08

303.1 (IFC 202); IFC 907.2.1 (IBC [F] 907.2.1); 1010.2, 1012.5, 1014.3, 1025.1, 1025.2, 1025.3, 1025.9 (IFC [B] 1010.2, [B] 1012.5, [B] 1014.3, [B] 1025.1, [B] 1025.2, [B] 1025.3, [B] 1025.9)

Proponent: Jason Thompson, PE, National Concrete Masonry Association NCMA, representing the Masonry Alliance for Codes and Standards (MACS)

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL, IBC MEANS OF EGRESS AND THE IFC CODE DEVELOPMENT COMMITTEES AS 3 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

Revise as follows:

303.1 (IFC 202) (Supp) Assembly Group A. Assembly Group A occupancy includes, among others, the use of a building or structure, or a portion thereof, for the gathering of persons for purposes such as civic, social or religious functions; recreation, food or drink consumption; or awaiting transportation.

Exceptions:

1. A building or tenant space used for assembly purposes with an occupant load of less than 50 persons shall be classified as a Group B occupancy.
2. A room or space used for assembly purposes with an occupant load of less than 50 persons and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
3. A room or space used for assembly purposes that is less than 750 square feet (70 m_2) in area and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
4. ~~Assembly areas that are accessory to Group E occupancies are not considered separate occupancies except when applying the assembly occupancy requirements of Chapter 11.~~

~~5~~ 4. Accessory religious educational rooms and religious auditoriums with occupant loads of less than 100 are not considered separate occupancies.

(Portion of section not shown remain unchanged)

PART II – IFC

Revise as follows:

907.2.1 (IBC [F] 907.2.1) (Supp) Group A. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in Group A occupancies having an occupant load of 300 or more. ~~Portions of Group E occupancies occupied for assembly purposes shall be provided with a fire alarm system as required for the Group E occupancy.~~

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

PART III – IBC MEANS OF EGRESS

Revise as follows:

1010.2 (IFC [B] 1010.2) (Supp) Slope. Ramps used as part of a means of egress shall have a running slope not steeper than one unit vertical in 12 units horizontal (8-percent slope). The slope of other pedestrian ramps shall not be steeper than one unit vertical in eight units horizontal (12.5-percent slope).

Exception: Aisle ramp slope in occupancies of Group A ~~or assembly occupancies accessory to Group E occupancies~~ shall comply with Section 1025.11.

1012.5 (IFC [B] 1012.5) (Supp) Handrail extensions. Handrails shall return to a wall, guard or the walking surface or shall be continuous to the handrail of an adjacent stair flight. Where handrails are not continuous between flights the handrails shall extend horizontally at least 12 inches (305 mm) beyond the top riser and continue to slope for the depth of one tread beyond the bottom riser. At ramps where handrails are not continuous between runs, the handrail shall extend horizontally above the landing 12 inches (305 mm) minimum beyond the top and bottom of ramp runs.

Exceptions:

1. Handrails within a dwelling unit that is not required to be accessible need extend only from the top riser to the bottom riser.
2. Aisle handrails in Group A ~~and E~~ occupancies in accordance with Section 1025.13.
3. Handrails for alternating tread devices may terminate at a location vertically above the top and bottom risers. Handrails for alternating tread devices are not required to be continuous between flights or to extend beyond the top or bottom risers.

1014.3 (IFC [B] 1014.3) (Supp) Common path of egress travel. In occupancies other than Groups H-1, H-2 and H-3, the common path of egress travel shall not exceed 75 feet (22 860 mm). In Group H-1, H-2, and H-3 occupancies, the common path of egress travel shall not exceed 25 feet (7620 mm). For common path of egress travel in Group A occupancies ~~and assembly occupancies accessory to Group E occupancies~~ having fixed seating, see Section 1025.8.

Exceptions:

1. The length of a common path of egress travel in Group B, F and S occupancies shall not be more than 100 feet (30 480 mm), provided that the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.
2. Where a tenant space in Group B, S and U occupancies has an occupant load of not more than 30, the length of a common path of egress travel shall not be more than 100 feet (30 480 mm).
3. The length of a common path of egress travel in a Group I-3 occupancy shall not be more than 100 feet (30 480 mm).
4. The length of a common path of egress travel in a Group R-2 occupancy shall not be more than 125 feet (38 100 mm), provided that the building is protected throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

1025.1 (IFC [B] 1025.1) (Supp) General. Occupancies in Group A ~~and assembly occupancies accessory to Group E~~ which contain seats, tables, displays, equipment or other material shall comply with this section.

1025.2 (IFC [B] 1025.2) (Supp) Assembly main exit. Group A occupancies ~~and assembly occupancies accessory to Group E occupancies~~ that have an occupant load of greater than 300 shall be provided with a main exit. The main exit shall be of sufficient width to accommodate not less than one-half of the occupant load, but such width shall not be less than the total required width of all means of egress leading to the exit. Where the building is classified as a Group A occupancy, the main exit shall front on at least one street or an unoccupied space of not less than 10 feet (3048 mm) in width that adjoins a street or public way.

Exception: In assembly occupancies 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.

1025.3 (IFC [B] 1025.3) (Supp) Assembly other exits. In addition to having access to a main exit, each level in a Group A ~~or assembly occupancies accessory to Group E occupancies~~ occupancy having an occupant load greater than 300 shall be provided with additional means of egress that shall provide an egress capacity for at least one-half of the total occupant load served by that level and comply with Section 1015.2.

Exception: In assembly occupancies 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.

1025.9 (IFC [B] 1025.9) (Supp) Assembly aisles are required. Every occupied portion of any occupancy in Group A ~~or assembly occupancies accessory to Group E~~ that contains seats, tables, displays, similar fixtures or equipment shall be provided with aisles leading to exits or exit access doorways in accordance with this section. Aisle accessways for tables and seating shall comply with Section 1014.4.3.

Reason: We are proposing to delete Exception 4 because we don't believe it is necessary and it may actually create conflicts with the enforcement of other provisions of this code related to Group A assembly occupancies. This exception is most likely the result of improper interpretation of the occupancy classification description for the Group A Assembly and the Group E Educational occupancies.

It is clear that Section 303.1 Assembly Group A defines a Group A assembly occupancy as one used "for the gathering of person for purposes such as civic, social, or religious functions: recreation, food, or drink consumption or awaiting transportation." This is clearly not an educational function. On the other hand, Section 305.1 Educational Group E defines Group E Educational occupancies as those buildings used by six or more persons at any time for educational purposes through the twelfth grade.

Therefore, it follows that if an assembly area affiliated with a Group E occupancy is integrally related to the Group E occupancy's main function which is for educational purposes, for example, a gymnasium used only by the students for physical education, then it is clearly part of the Group E occupancy and is not a Group A assembly occupancy. Its primary function is to be used for educational purposes and not for "civic, social, or religious functions or for recreation, food, or drink consumption or awaiting transportation." Therefore, there is no need to provide an Exception 4 to the accessory occupancies requirements in Section 303.1.

Furthermore, the real danger we see in not deleting this exception is that many parts of a school in which assembly occupancies are attached which are used for more than the education of students at the educational occupancy would not be considered as separate assembly areas for the purposes of applying the code. Today's schools are being designed and built more to accommodate the needs of the local community and provide facilities for the citizens to gather for "the purpose such as a civic, social, or religious functions or for recreation, food, or drink consumption." Whenever the public, i.e. those who are not students at the educational facility, are allowed to use the assembly areas affiliated with a Group E Educational occupancy, it is our opinion that those assembly areas should be treated as separate occupancies and not considered to be part of the Group E occupancy. Most educational facilities now contain multipurpose rooms which are used in the evenings and weekend by the residents of the school district. Schools also contain theaters that are used at night and on weekends as well by the public. And gymnasiums with movable or even permanent seating are also used by the public to view spectator sports. These gymnasiums are often used for other assembly purposes involving occupants other than students that involve large numbers of people which is clearly an assembly occupancy.

In conclusion, Exception 4 is actually superfluous and should be deleted because it also ignores the realities of assembly use areas in Group E Educational facilities today where the public is allowed to use those facilities when the students are not there. (Code change G137 moved this exception from 2006 IBC Section 508.3.1 to 2007 IBC Supplement Section 303.1.)

The revisions to Chapter 9 and 10 are intended for correlation. The revisions to Chapter 10 were added to the 2007 Supplement by E152-06/07 during the last cycle. The reason given was concern over interpretation of assembly spaces accessory to Group E.

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

PART I – IBC GENERAL

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 – IBC MEANS OF EGRESS

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

G22–07/08
308.6 (New) (IFC [B] 202) (New)

Proponent: Larry Litchfield PE, and Marge McAllister, Schirmer Engineering

Add new text as follows:

308.6 (IFC [B] 202) Group I-5 Independently accredited health care facilities. This group shall include health care facilities intended to be designed and constructed to be accredited by a nationally recognized accreditation

organization to meet federal or state requirements and which follow the requirements of NFPA 101. Group I-5 occupancies shall comply with the provisions of this section and that of Group I-2 occupancy as required by this code. Where the code requirements create a conflict, the more restrictive code requirement shall apply.

Accredited health care facilities include:

308.6.1 (IFC [B] 202) Group I-5.1 New health care. A new occupancy used for the purpose of medical or other treatment or care of four or more persons where such occupants are mostly incapable of self-preservation due to age, physical or mental disability or because of security measures not under the occupant's control and following the provisions of NFPA 101, Chapter 18 as required by the accreditation organization.

308.6.2 (IFC [B] 202) Group I-5.2 Existing health care. An existing occupancy or portions thereof occupied as health care occupancies following the provisions of NFPA 101, Chapter 19 as required by the accreditation organization.

308.6.3 (IFC [B] 202) Group I-5.3 New ambulatory health care. A building or portion thereof used to provide services or treatment simultaneously to four or more patients that provides, on an outpatient basis, one or more of the following:

1. Treatment for patients that renders the patients incapable of taking action for the self-preservation under emergency conditions without action from others;
2. Anesthesia that renders a patient incapable of taking action for self-preservation under emergency conditions without action from others;
3. Emergency or urgent care for patients who, due to the nature of their illness or injuries, are incapable of taking action for self-preservation under emergency conditions, and follow the provisions of NFPA 101, Chapter 20 as required by the accreditation organization.

308.6.4 (IFC [B] 202) Group I-5.4 Existing ambulatory health care occupancies. Existing health care buildings or a portion thereof currently occupied as ambulatory health care occupancies following the provisions of NFPA 101, Chapter 21 as required by the accreditation organization.

Reason: The IBC provides no separate recognition for independent health care facilities which are required to meet the NFPA 101 life safety code to receive and maintain accreditation from a nationally recognized accreditation organization to meet federal and state requirements. Most health care facilities opt to be accredited by an independent agency, such as JAHCO, in order to be certified to treat patients covered by Medicare and Medicaid. Congress amended the social security act in 1965 to require that health care facilities be accredited by JAHCO. JAHCO uses the provisions of the life safety code as the basis of their accreditation.

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

Analysis: It is unclear how this new occupancy classification will address code requirements such as heights and areas.

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

G23–07/08

304.1, 202 (New) [IFC [B] 202 (New)], 421 (New); IFC 903.2.2 (New) [IBC [F] 903.2.2 (New)], 907.2.2 (IBC [F] 907.2.2)

Proponent: John Williams, State of Washington Department of Health, Construction Review Services, WA

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL AND IFC CODE DEVELOPMENT COMMITTEES AS 2 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

1. Revise as follows:

304.1 (IFC [B] 202) 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 (see section 421)
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 (architects, attorneys, dentists, physicians, engineers, etc.)
Radio and television stations
Telephone exchanges
Training and skill development not within a school or academic program

2. Add new definition as follows:

SECTION 202 (IFC 202)
DEFINITIONS

AMBULATORY HEALTH CARE FACILITY. Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to individuals who are rendered incapable of self-preservation.

3. Add new text as follows:

SECTION 421
AMBULATORY CARE FACILITIES

421.1 General. Occupancies classified as Group B Ambulatory Health Care Facilities shall comply with the provisions of this section and other applicable provisions of this code.

421.2 Smoke barriers. Smoke barriers shall be provided to subdivide every ambulatory care facility greater than 10,000 square feet (929 m^2) into a minimum of two smoke compartments. 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 installed in accordance with Section 709.

421.3 Refuge area. At least 30 net square feet (2.8 m^2) per nonambulatory patient shall be provided within the aggregate area of corridors, patient rooms, treatment rooms, lounge or dining areas and other low-hazard areas on each side of each smoke barrier.

421.4 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.

421.5 Automatic Sprinkler Systems. Automatic sprinklers systems shall be provided for ambulatory care facilities in accordance with Section 903.2.2.

421.6 Fire alarm systems. A fire alarm system shall be provided in accordance with Section 907.2.2.

PART II – IFC

1. Add new text as follows:

903.2.2 (IBC [F] 903.2.2) Group B ambulatory health care facilities. An automatic sprinkler system shall be provided for Group B Ambulatory Health Care Facility occupancies when either of the following conditions are met:

1. Four or more care recipients are incapable of self preservation at any given time
2. One or more care recipients that are incapable of self preservation are located at other than the level of exit discharge.

(Renumber subsequent sections)

2. Revise as follows:

907.2.2 (IBC [F] 907.2.2) (Supp) Group B. A manual fire alarm system that activates the occupant notification system in accordance with Section 907.6 shall be installed in Group B occupancies where one of the following conditions exists:

1. The combined Group B occupant load of all floors is 500 or more.
2. The Group B occupant load is more than 100 persons above or below the lowest level of exit discharge.

   Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

A manual and automatic fire alarm system shall be installed in all Group B Ambulatory Health Care Facilities.

Reason: This code change is intended to address the issue of ambulatory surgery centers. Thirty years ago, few surgical procedures were performed outside of the hospital. Today, complex outpatient surgeries outside of the hospital are commonplace. They are performed in facilities often called "day surgery centers" or "Ambulatory surgical centers (ASC's)" because patients are able to walk in and walk out the same day. Procedures render patients temporarily incapable of self-preservation by application of nerve blocks, sedation, or anesthesia. Patients in these facilities typically recover quickly.

The IBC identifies the healthcare Group I occupancies as having 24 hour stay. Without 24 stay these surgery centers are being classified as Group B. Essentially this allows you to render an unlimited number of people incapable of self preservation with no more protection than a business office. Since there is no distinct classification for ASC's in the I codes, the total number of these facilities cannot be quantified. These types of facilities contain distinctly different hazards to life and safety than other Business Occupancies, such as:

- Patients incapable of self-preservation require rescue by other occupants or fire personnel.
- Medical staff must stabilize the patient prior to evacuation; therefore, staff may require evacuation as well.
- Use of oxidizing medical gases such oxygen and nitrous oxide
- Prevalence of surgical fires.

Past changes have tried to force these occupancies into the Group I-2 category. This is a poor fit, because these are not hospitals. Other Federal and State jurisdictions have recognized that there is a middle ground somewhere in between Group B and I-2. This proposal provides a scaled approach to protection. Occupancy classification stays as group B. A fire alarm is required in all facilities for increased staff awareness. A sprinkler is required when several people are incapable of self preservation. In larger facilities, a smoke compartment is provided to allow more of a protect in place environment. These allow staff a safer environment to stabilize the patients before evacuation, and protection for fire personnel who may have to evacuate both patients and staff.

An ICC CTC study group was formed last year to examine these facilities and determine what if any changes to the code are necessary. Unfortunately, scheduling did not allow enough time for the study group to complete a proposal for a code change. Hundreds of these facilities are being built every year, and those are the ones that we know about. Please do not wait until 2012 to provide a safer environment for this very sensitive population of patients.

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

PART I – IBC GENERAL

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

PART II – IFC

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

G24 –07/08
304.1.1 (IFC [B] 202)

Proponent: Roger Severson, RSA Consulting, representing the Oregon Department of Health Services

Add new text as follows:

304.1.1 (IFC [B] 202) Definitions. The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

CLINIC-OUTPATIENT. A medical office or facility serving patients who are capable of self-preservation, or where not more than three patients are rendered incapable of self-preservation and the facility is on the level of exit discharge. Facilities with four or more patients who are rendered incapable of self-preservation or where one or more patients that are incapable of self preservation are located at other than the level of exit discharge are Ambulatory Health Care Facilities (see Section 421.)

Reason: This code change is intended to be submitted in collaboration with the state of Washington to correlate with their new proposal in Section 421 for Ambulatory Health Care Facilities. Oregon, as well as other states, have made modifications to areas of the code affected by Clinic-outpatient facilities. These modifications and national certification requirements recognize that there are additional levels of protection required where patients are not capable of caring for them self. Finding common ground and putting these modifications into the model code would provide greater consistency across the country.

The amendment in Section 304.1 simply limits the number of patients who are not capable of self-preservation to three or fewer by adding a definition. There is also a reference that sends the reader to Section 421 for facilities that provide service to more than three patients incapable of self preservation.

Cost Impact: For facilities abiding by the requirements for federal funding, or for those areas who are modifying the code in a similar respect, the code change proposal will not increase the cost of construction.

However, for areas where outpatient clinics are allowed to provide services that would render patients incapable of self-preservation and be classified as a B occupancy, there would be an increase to the cost of construction.

Additionally, when a facility is not built to the standards required to receive federal funding, and they would then choose to become certified later, another additional cost could be imposed upon the facility.

Analysis: Note that the Section 421 that is referenced in this definition is a new section proposed in code change proposal Williams G23-07/08.

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

G25–07/08

306.2 (IFC [B] 202), 311.2 (IFC 202.1), 311.3 (IFC 202.1), 421.2.1(New), [F] 412.2.6 (IFC 914.8.2), Table [F] 421.2.6 (IFC Table 914.8.2) (New), [F] 412.2.6.1 (IFC 914.8.2.1) (New), [F] 412.2.6.2 (IFC 914.8.2.2) (New)

Proponent: Tom Lariviere, Fire Department, Madison, MS, representing the Joint Fire Service Review Committee

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL AND IFC CODE DEVELOPMENT COMMITTEES AS 2 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

Revise as follows:

306.2 (IFC 202) Factory Industrial F-1 Moderate-hazard Occupancy. Factory industrial uses which are not classified as Factory Industrial F-2 Low Hazard shall be classified as F-1 Moderate Hazard and shall include, but not be limited to, the following:

Aircraft <u>(manufacturing, not to include repair)</u>
Appliances
Athletic equipment
Automobiles and other motor vehicles
Bakeries
Beverages; over 12-percent alcohol content
Bicycles
Boats
Brooms or brushes
Business machines
Cameras and photo equipment
Canvas or similar fabric
Carpets and rugs (includes cleaning)
Clothing
Construction and agricultural machinery
Disinfectants
Dry cleaning and dyeing
Electric generation plants
Electronics
Engines (including rebuilding)
Food processing
Furniture

Hemp products
Jute products
Laundries
Leather products
Machinery
Metals
Millwork (sash & door)
Motion pictures and television filming (without spectators)
Musical instruments
Optical goods
Paper mills or products
Photographic film
Plastic products
Printing or publishing
Refuse incineration
Shoes
Soaps and detergents
Textiles
Tobacco
Trailers
Upholstering
Wood; distillation
Woodworking (cabinet)

311.2 (IFC 202) Moderate-hazard storage, Group S-1. Buildings occupied for storage uses that are not classified as Group S-2, including, but not limited to, storage of the following:

Aerosols, Levels 2 and 3
Aircraft ~~repair~~ hangar
Bags: cloth, burlap and paper
Bamboos and rattan
Baskets
Belting: canvas and leather
Books and paper in rolls or packs
Boots and shoes
Buttons, including cloth covered, pearl or bone
Cardboard and cardboard boxes
Clothing, woolen wearing apparel
Cordage
Dry boat storage (indoor)
Furniture
Furs
Glues, mucilage, pastes and size
Grains
Horns and combs, other than celluloid
Leather
Linoleum
Lumber
Motor vehicle repair garages complying with the maximum allowable quantities of hazardous materials listed in Table 307.1(1) (see Section 406.6)
Photo engravings
Resilient flooring
Silks
Soaps
Sugar
Tires, bulk storage of
Tobacco, cigars, cigarettes and snuff
Upholstery and mattresses
Wax candles

311.3 (IFC 202) Low-hazard storage, Group S-2. Includes, among others, buildings used for the storage of noncombustible materials such as products on wood pallets or in paper cartons with or without single thickness divisions; or in paper wrappings. Such products are permitted to have a negligible amount of plastic trim, such as knobs, handles or film wrapping. Storage uses shall include, but not be limited to, storage of the following:

~~Aircraft hangar~~
Asbestos
Beverages up to and including 12-percent alcohol in metal, glass or ceramic containers
Cement in bags
Chalk and crayons
Dairy products in nonwaxed coated paper containers
Dry cell batteries
Electrical coils
Electrical motors
Empty cans
Food products
Foods in noncombustible containers
Fresh fruits and vegetables in nonplastic trays or containers
Frozen foods
Glass
Glass bottles, empty or filled with noncombustible liquids
Gypsum board
Inert pigments
Ivory
Meats
Metal cabinets
Metal desks with plastic tops and trim
Metal parts
Metals
Mirrors
Oil-filled and other types of distribution transformers
Parking garages, open or enclosed
Porcelain and pottery
Stoves
Talc and soapstones
Washers and dryers

PART II – IFC

1. Revise as follows:

[F] 412.2.6 (IFC 914.8.2) Fire suppression. Aircraft hangars shall be provided with a fire suppression system designed in accordance with ~~as required by~~ NFPA 409, based upon the classification for the hangar given in Table 412.2.6.

Exception: When a Fixed Base Operator has separate repair facilities on site, Group II hangars operated by a Fixed Base Operator used for storage of transient aircraft only~~, as defined in NFPA 409, storing private aircraft without major maintenance or overhaul are~~ shall have a fire suppression system, but the system is exempt from foam ~~suppression~~ requirements.

2. Add new table and text as follows:

[F] TABLE 412.2.6 (IFC TABLE 914.8.2)
HANGAR FIRE SUPPRESSION REQUIREMENTS[a,b]

Maximum Single Fire Area, sq. ft. (m^2)	Type of Construction								
	IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
>40,001 (3,716)	Group I	Group I	Group I	Group I	Group I	Group I	Group I	Group I	Group I
40,000 (3,716)	Group II	Group II	Group II	Group II	Group II	Group II	Group II	Group II	Group II
30,000 (2,787)	Group III	Group II	Group II	Group II	Group II	Group II	Group II	Group II	Group II
20,000 (1,858)	Group III	Group III	Group II	Group II	Group II	Group II	Group II	Group II	Group II
15,000 (1,394)	Group III	Group III	Group III	Group II	Group III	Group II	Group III	Group II	Group II
12,000 (1,115)	Group III	Group III	Group III	Group III	Group III	Group III	Group III	Group II	Group II
8,000 (743)	Group III	Group III	Group III	Group III	Group III	Group III	Group III	Group III	Group II
5,000 (465)	Group III	Group III	Group III	Group III	Group III	Group III	Group III	Group III	Group III

a. Aircraft hangars with a door height greater than 28 feet shall be provided with fire suppression for a Group I hangar regardless of maximum fire area.
b. Groups shall be as classified in accordance with NFPA 409.

[F] 412.2.6.1 (IFC 914.8.2.1) Hazardous Operations. Any Group III aircraft hangar according to Table 914.8.2 that contains hazardous operations including, but not limited to, the following shall be provided with a Group I or Group II fire suppression system in accordance with NFPA 409 as applicable:

1. Doping.
2. Hot work including, but not limited to welding, torch cutting, and torch soldering.
3. Fuel transfer.
4. Fuel tank repair or maintenance not including de-fueled tanks per NFPA 409, inerted tanks or tanks that have never been fueled.
5. Spray finishing operations.
6. Total fuel capacity of all aircraft within the non-sprinklered single fire area in excess of 1,600 gal (6057 L).
7. Total fuel capacity of all aircraft within the maximum single fire area in excess of 7,500 gal (28,390 L) for a hangar with a fire sprinkler system per Section 903.3.1.1.

[F] 412.2.6.2 (IFC 914.8.2.2) Separation of maximum single fire areas. Maximum single fire areas established in accordance with hangar classification and construction type in Table 914.8.2 shall be separated by 2 hour fire walls constructed in accordance with Section 705.

412.2.1 DEFINITIONS. The following word and term shall, for the purposes of this chapter and as used elsewhere in this code, have the meaning shown herein.

FIXED BASE OPERATOR (FBO). A commercial business granted the right by the airport sponsor to operate on an airport and provide aeronautical services such as fueling, hangaring, tie-down and parking, aircraft rental, aircraft maintenance, and flight instruction.

TRANSIENT AIRCRAFT. Aircraft based at another location and is at the transient location for not more than 90 days.

Reason: The current fire suppression requirements found in the IBC and IFC for aircraft hangars are confusing at best. The IBC and IFC require: "Aircraft hangars shall be provided with fire suppression as required by NFPA 409." Neither the IBC nor the IFC gives any guidance when going to NFPA 409 on how to use that standard. In addition, the exception to the fire suppression requirements uses two terms that have no definition. Those terms are: "private aircraft" and "major maintenance or overhaul."

"Private aircraft" is difficult to define. For example, is a Cessna 210 owned my a corporation a private aircraft or the Gulfstream V (which carries over 6,700 gallons of fuel and has a range of that similar to a 737) owned by a celebrity a private aircraft? The FAA does not define aircraft this way and the reference to "private aircraft" is confusing and difficult to enforce and administer.

"Major maintenance or overhaul" is another term that is difficult to define. The FAA cannot even define "major maintenance" in a way intended by the IBC and IFC. The FAA has a document that all aircraft owners and operators have. It is CFR Part 43 Appendix A. There is no definitive list is this document that the code official can use when determining the extent of maintenance in an aircraft hangar. In addition, NFPA 409 makes no mention of "maintenance" for any of its requirements except for certain "hazardous operations" in Group III hangars.

This proposal will eliminate these two terms because they are difficult to define and they are not necessary when determining the fire suppression requirements from NFPA 409. There is an exception for the foam requirements in the IBC and IFC that use these terms. The exception to 914.8.2 is intended for those aircraft hangars that Flight Base Operators (FBO) use for visiting aircraft to an airport. The FBO will have other repair facilities on the airport and the "storage" hangar is intended for short-term storage only inside a hangar from the weather.

In place of the "private aircraft" and "major maintenance" terms, this proposal adds the term "transient aircraft." This better identifies the intent of this type of aircraft hangar. It seems that most frequently, the owner that wants to develop an aircraft hangar that fits the Group II category, will do no "major maintenance" and will only "store" airplanes in their hangar. This becomes a significant enforcement issue after the hangar is built and occupied, as everyone will then only be doing minor repair even though the aircraft engine is in pieces or a wing is lying on the floor of the hangar. NFPA 409 does not use "maintenance" as a criterion to determine the fire suppression requirements for any aircraft hangars except for Group III hangars where certain "hazardous" operations are conducted. Even then, if those "hazardous" operations are done, the group type of the hangar goes from a Group III hangar to a Group II.

The other aspect of maintenance that the IBC and IFC ignore is that of the maintenance of "experimental" aircraft. The experimental aircraft owner will always maintain and repair his or her aircraft as an FAA mechanic "will not" work on an experimental aircraft. An FAA mechanic cannot work on an experimental aircraft because there is no "service manual" for the aircraft like there is for a factory built aircraft. On every airport in the country where there are T-hangars, one will find experimental aircraft. As the codes currently read, this then becomes an enforcement problem requiring the code official to monitor maintenance in the T-hangars, which is not the intent of NFPA 409. NFPA 409 intends that maintenance be done in the small hangars just like in the large hangars.

Because repair is intended in NFPA 409 in aircraft hangars, this proposal eliminates the S-2 occupancy classification for "storage" aircraft hangars. The S-2 occupancy classification is confusing to the designer and code official and serves no purpose. The S-1 occupancy classification is all that is needed. When one looks at NFPA 409 to determine the fire suppression requirements, one will find that the Group III hangars have no fire suppression requirements except for during certain hazardous operations. NFPA 409 recognizes that in these small aircraft hangars there will be repair operations and has determined that fire suppression is not required due to the small size of the aircraft hangars. As the IBC and IFC are currently worded, if a designer were to select the S-2 occupancy classification, that hangar could not contain any repair operations. This does a disservice to the hangar owner and anyone who may lease or rent an aircraft space in that hangar. A Group III hangar could be as large as 12,000 square feet in area with Type IIB construction without any fire suppression systems and NFPA 409 would allow repair activities in that aircraft hangar.

NFPA 409 also limits the size of the small hangars with the definitions of a "single hangar building" and the "cluster hangar" for Group III aircraft hangars. These two definitions limit the size and location separations of these two types of hangars, which is part of the fire suppression scheme for Group III hangars. NFPA handles the lack of required separation of hangar buildings by requiring two two-hour walls on each hangar building. This seems to be like a "fire wall" as defined by IBC Section 705. This proposal thus adds this requirement for separation of single hangar buildings with a fire wall as defined by IBC Section 705 in lieu of the NFPA 409 requirement of two 2-hour walls.

NFPA 409 specifies fire protection for aircraft hangars based on Group I, Group II or Group III hangar, but the IBC and IFC do not define aircraft hangars using these terms. This proposal adds a table that coordinates the IBC/IFC terms and construction requirements with the fire protection design requirements found in NFPA 409 for Group I, II and III hangars. This table is based on correlating the NFPA construction and area limits with the IBC and IFC construction requirements. This table combines several tables in NFPA 409 into a single table that allows determination of the group type for aircraft hangars based on construction type and area before proceeding to NFPA 409 for the suppression requirements.

This proposal will simplify the current IBC and IFC requirements for aircraft hangars and make the codes easier to use by both the aircraft hangar designer and the code official.

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

PART I – IBC GENERAL

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

PART II – IFC

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

G26–07/08

306.2, 306.3, 311.3 (IFC [B] 202)

Proponent: Gary L. Rencehausen, Lewiston, ID, representing himself

1. Revise as follows:

306.2 (IFC [B] 202) Factory Industrial F-1 Moderate-hazard Occupancy. Factory industrial uses which are not classified as Factory Industrial F-2 Low Hazard shall be classified as F-1 Moderate Hazard and shall include, but not be limited to, the following:

Aircraft
Appliances
Athletic equipment
Automobiles and other motor vehicles
Bakeries
Beverages; over ~~12~~ 16-percent alcohol content
Bicycles
Boats
Brooms or brushes
Business machines

Cameras and photo equipment
Canvas or similar fabric
Carpets and rugs (includes cleaning)
Clothing
Construction and agricultural machinery
Disinfectants
Dry cleaning and dyeing
Electric generation plants
Electronics
Engines (including rebuilding)
Food processing
Furniture
Hemp products
Jute products
Laundries
Leather products
Machinery
Metals
Millwork (sash & door)
Motion pictures and television filming (without spectators)
Musical instruments
Optical goods
Paper mills or products
Photographic film
Plastic products
Printing or publishing
Recreational vehicles
Refuse incineration
Shoes
Soaps and detergents
Textiles
Tobacco
Trailers
Upholstering
Wood; distillation
Woodworking (cabinet

306.3 (IFC [B] 202) Factory Industrial F-2 Low-hazard Occupancy. Factory industrial uses that involve the fabrication or manufacturing of noncombustible materials which during finishing, packing or processing do not involve a significant fire hazard shall be classified as F-2 occupancies and shall include, but not be limited to, the following:

Beverages; up to and including ~~12~~ 16-percent alcohol content
Brick and masonry
Ceramic products
Foundries
Glass products
Gypsum
Ice
Metal products (fabrication and assembly)

311.3 (IFC [B] 202) Low-hazard storage, Group S-2. Includes, among others, buildings used for the storage of noncombustible materials such as products on wood pallets or in paper cartons with or without single thickness divisions; or in paper wrappings. Such products are permitted to have a negligible amount of plastic trim, such as knobs, handles or film wrapping. Storage uses shall include, but not be limited to, storage of the following:

Aircraft hangar
Asbestos
Beverages up to and including ~~12~~ 16-percent alcohol in metal, glass or ceramic containers
Cement in bags
Chalk and crayons
Dairy products in nonwaxed coated paper containers

Dry cell batteries
Electrical coils
Electrical motors
Empty cans
Food products
Foods in noncombustible containers
Fresh fruits and vegetables in nonplastic trays or containers
Frozen foods
Glass
Glass bottles, empty or filled with noncombustible liquids
Gypsum board
Inert pigments
Ivory
Meats
Metal cabinets
Metal desks with plastic tops and trim
Metal parts
Metals
Mirrors
Oil-filled and other types of distribution transformers
Parking garages, open or enclosed
Porcelain and pottery
Stoves
Talc and soapstones
Washers and dryers

Reason: I am proposing a change and an alternative, and I will try and explain both.

I am part owner in a small startup winery and we are hoping to relocate into part of an older existing downtown building. For us getting the code change would allow us to build a 2 hour fire wall, opposed to a 3 hour fire wall required by the F-1, moderate hazard class for liquids 12% alcohol and above.

The 12% was a relatively arbitrary number. I spoke with William Stuart the architect who submitted the change to allow up to 12% from the 0% that it was prior to 2000. He stated that not being a avid wine drinker he had simply reached in to the cupboard and pulled out a bottle of Gallo and it listed it's alcohol at 12% and that was what he used as his standard. If his intent was to allow the production and storage of wine in the F-2 class then for the most part he failed…

In my opinion there are two other logical choices for an alcohol % limit. Twenty percent alcohol would be the first choice with 16% being the alternate. I will try to explain both. I don't know how familiar the code council is with the making of wine so I will include a very brief description of the process. In a juice adding a yeast will turn the natural sugar into alcohol. It is a self limiting process, in that most common wine yeast will die off as the alcohol raises to between 12 and 16.% (depending mostly on the type of yeast). A good dry red wine will often finish at 14 to 15 %. (And it may be a little higher at some point during the process) To reach a higher alcohol % the wine needs to be fortified by adding alcohol. Such is the case of Port style wines where brandy is added to bring the alcohol up 18 -20% which is the usual upper limit of fortified wines. I hope that explains my justification for the two higher limit proposals.

From the chart included (Flash Points of Ethanol based Water Solutions) you can see if you extrapolate 15% would be about 120 degrees F. Now it is possible that during the fermentation process the must (the juice, skin and seed solution) might approach 95 to 100 degrees F. This would typically be near the mid point of the fermentation cycle when the alcohol would be in the 8-10% range. As the process continues and must (wine) reaches the 15 % level the fermentation slows down and the temp drops to room temp (65 to 70 degrees F). Were the wine then to be fortified it is here at this temp that alcohol would be added. I might also add here that another byproduct of the fermentation process is the production of CO_2 and being heaver than air it floats on top of the fermentation vats. CO_2 will not support combustion, in fact one method of checking to insure the fermentation process is still working is to hold a match over the vat, as soon as the match drops below the rim of the vat it goes out.

In conclusion I have added a couple of letters that give a little insight into how an alcohol/water solution is classified as a waste product. It doesn't appear that raising the limit to 16 or 20 % significantly raises the risks in the production of wine. The 16 or 20 % alcohol is still less than the ignitability of wine with the temperatures we see in the production of wine.

I think that raising the limit would not only open up some possibilities for other wineries but also for other downtown areas where a winery might well help in their revitalization.

Cost Impact: The code change proposal will actually decrease the cost of construction.

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

G27–07/08
306.2, 306.3, 311.3, (IFC [B] 202)

Proponent: Gary L. Rencehausen, Lewiston, ID, representing himself

Revise as follows:

306.2 (IFC [B] 202) Factory Industrial F-1 Moderate-hazard Occupancy. Factory industrial uses which are not classified as Factory Industrial F-2 Low Hazard shall be classified as F-1 Moderate Hazard and shall include, but not be limited to, the following:

Aircraft
Appliances
Athletic equipment
Automobiles and other motor vehicles
Bakeries
Beverages; over ~~12-~~ 20-percent alcohol content
Bicycles
Boats
Brooms or brushes
Business machines
Cameras and photo equipment
Canvas or similar fabric
Carpets and rugs (includes cleaning)
Clothing
Construction and agricultural machinery
Disinfectants
Dry cleaning and dyeing
Electric generation plants
Electronics
Engines (including rebuilding)
Food processing
Furniture
Hemp products
Jute products
Laundries
Leather products
Machinery
Metals
Millwork (sash & door)
Motion pictures and television filming (without spectators)
Musical instruments
Optical goods
Paper mills or products
Photographic film
Plastic products
Printing or publishing
Recreational vehicles
Refuse incineration
Shoes
Soaps and detergents
Textiles
Tobacco
Trailers
Upholstering
Wood; distillation
Woodworking (cabinet

306.3 (IFC [B] 202) Factory Industrial F-2 Low-hazard Occupancy. Factory industrial uses that involve the fabrication or manufacturing of noncombustible materials which during finishing, packing or processing do not involve a significant fire hazard shall be classified as F-2 occupancies and shall include, but not be limited to, the following:

Beverages; up to and including ~~12~~ 20-percent alcohol content
Brick and masonry
Ceramic products
Foundries
Glass products
Gypsum
Ice
Metal products (fabrication and assembly)

311.3 (IFC [B] 202) Low-hazard storage, Group S-2. Includes, among others, buildings used for the storage of noncombustible materials such as products on wood pallets or in paper cartons with or without single thickness divisions; or in paper wrappings. Such products are permitted to have a negligible amount of plastic trim, such as knobs, handles or film wrapping. Storage uses shall include, but not be limited to, storage of the following:

Aircraft hangar
Asbestos
Beverages up to and including ~~12~~ 20-percent alcohol in metal, glass or ceramic containers
Cement in bags
Chalk and crayons
Dairy products in nonwaxed coated paper containers
Dry cell batteries
Electrical coils
Electrical motors
Empty cans
Food products
Foods in noncombustible containers
Fresh fruits and vegetables in nonplastic trays or containers
Frozen foods
Glass
Glass bottles, empty or filled with noncombustible liquids
Gypsum board
Inert pigments
Ivory
Meats
Metal cabinets
Metal desks with plastic tops and trim
Metal parts
Metals
Mirrors
Oil-filled and other types of distribution transformers
Parking garages, open or enclosed
Porcelain and pottery
Stoves
Talc and soapstones
Washers and dryers

Reason: I am proposing a change and an alternative, and I will try and explain both.

I am part owner in a small startup winery and we are hoping to relocate into part of an older existing downtown building. For us getting the code change would allow us to build a 2 hour fire wall, opposed to a 3 hour fire wall required by the F-1, moderate hazard class for liquids 12% alcohol and above.

The 12% was a relatively arbitrary number. I spoke with William Stuart the architect who submitted the change to allow up to 12% from the 0% that it was prior to 2000. He stated that not being an avid wine drinker he had simply reached in to the cupboard and pulled out a bottle of Gallo and it listed it's alcohol at 12 % and that was what he used as his standard. If his intent was to allow the production and storage of wine in the F-2 class then for the most part he failed…

In my opinion there are two other logical choices for an alcohol % limit. Twenty percent alcohol would be the first choice with 16% being the alternate. I will try to explain both. I don't know how familiar the code council is with the making of wine so I will include a very brief description of the process. In a juice adding a yeast will turn the natural sugar into alcohol. It is a self limiting process, in that most common wine yeast will die off as the alcohol raises to between 12 and 16.% (depending mostly on the type of yeast). A good dry red wine will often finish at 14 to 15%. (And it may be a little higher at some point during the process). To reach a higher alcohol % the wine needs to be fortified by adding alcohol. Such is the case of Port style wines where brandy is added to bring the alcohol up 18 -20 % which is the usual upper limit of fortified wines. I hope that explains my justification for the two higher limit proposals.

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In conclusion I have added a couple of letters that give a little insight into how an alcohol/water solution is classified as a waste product. It doesn't appear that raising the limit to 16 or 20 % significantly raises the risks in the production of wine. The 16 or 20 % alcohol is still less than the ignitability of wine with the temperatures we see in the production of wine.

I think that raising the limit would not only open up some possibilities for other wineries but also for other downtown areas where a winery might well help in their revitalization.

Cost Impact: The code change proposal will actually decrease the cost of construction.

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

G28–07/08
[F] 307.1 (IFC 202)

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing himself

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

Revise as follows:

[F] 307.1 (IFC 202) (Supp) High-hazard Group H. High-hazard Group H occupancy includes, among others the use of a building or structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities in excess of those allowed in control areas complying with Section 414, based on the maximum allowable quantity limits for control areas set forth in Tables 307.1(1) and 307.1(2). Hazardous occupancies are classified in Groups H-1, H-2, H-3, H-4 and H-5 and shall be in accordance with this section, the requirements of Section 415 and the *International Fire Code*.

Exceptions: The following shall not be classified as Group H, but shall be classified as the occupancy that they most nearly resemble.

1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the *International Fire Code*.
2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the *International Fire Code*.
3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher In closed systems employing equipment listed by an approved testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour fire barriers or 1-hour horizontal assemblies or both.
5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).
6. Liquor stores and distributors without bulk storage.
7. Refrigeration systems.
8. The storage or utilization of materials for agricultural purposes on the premises.
9. Stationary batteries utilized for facility emergency power, uninterrupted power supply or telecommunication facilities, provided that the batteries are provided with safety venting caps and ventilation is provided in accordance with the *International Mechanical Code*.
10. Corrosives shall not include personal or household products in their original packaging used in retail display or commonly used building materials.
11. Buildings and structures occupied for aerosol storage shall be classified as Group S-1, provided that such buildings conform to the requirements of the *International Fire Code*.
12. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not exceeding the maximum allowable quantity per control area in Group M or S occupancies complying with Section 414.2.5.

13. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the *International Fire Code*.
14. Canopies used to shelter dispensing operations where flammable compressed gases are located on the roof of the canopy, provided that such canopies comply with Section 406 and the *International Fire Code.*

Reason: Section 307.1 Applies to buildings or structures. A canopy at a motor fuel-dispensing facility is a structure. This proposed code change is intended to clarify that canopies that are used to shelter dispensing operations where flammable compressed gases are located on the roof of the canopy should not be classified in Group H.

The need for this clarification was identified during a "Hydrogen Fueling Station Permitting Workshop" held on July 10, 2007 that was co-sponsored by the United States Department of Energy and the National Association of State Fire Marshals. Building and fire code officials participating in the workshop believe the plain language of Section 307.1 would require classifying the canopy, (which is enclosed at the roof line on four sides), as an H Group structure, and that an exception should be added as clarification.

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

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

G29–07/08
[F] 307.1 (IFC 202), Chapter 35 (New)

Proponent: Cynthia A. Wilk, State of New Jersey, – Department of Community Affairs - Division of Codes and Standards, representing the NJ-DCA Division of Codes and Standards

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

Revise as follows:

[F] 307.1 (IFC 202) (Supp) High-hazard Group H. High-hazard Group H occupancy includes, among others the use of a building or structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities in excess of those allowed in control areas complying with Section 414, based on the maximum allowable quantity limits for control areas set forth in Tables 307.1(1) and 307.1(2). Hazardous occupancies are classified in Groups H-1, H-2, H-3, H-4 and H-5 and shall be in accordance with this section, the requirements of Section 415 and the *International Fire Code*.

Exceptions: The following shall not be classified as Group H, but shall be classified as the occupancy that they most nearly resemble.

1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the *International Fire Code*.
2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the *International Fire Code*.
3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher In closed systems employing equipment listed by an approved testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour fire barriers or 1-hour horizontal assemblies or both.
5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).
6. Liquor stores and distributors without bulk storage.
7. Refrigeration systems.
8. The storage or utilization of materials for agricultural purposes on the premises.
9. Stationary batteries utilized for facility emergency power, uninterrupted power supply or telecommunication facilities, provided that the batteries are provided with safety venting caps and ventilation is provided in accordance with the *International Mechanical Code*.
10. Corrosives shall not include personal or household products in their original packaging used in retail display or commonly used building materials.
11. Buildings and structures occupied for aerosol storage shall be classified as Group S-1, provided that such buildings conform to the requirements of the *International Fire Code*.

12. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not exceeding the maximum allowable quantity per control area in Group M or S occupancies complying with Section 414.2.5.
13. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the *International Fire Code*.
14. Buildings storing mattresses containing polyurethane foam that have been tested and meet the criteria of 16 CFR Part 1633, Standard for the Flammability of Mattress Sets, shall not be considered Group H-3.

2. Add standard to Chapter 35 as follows:

CPSC

16 CFR Part 1633 Consumer Product Safety Commission Standard for the Flammability of Mattress Sets

Reason: Using the definitions set forth in the International Building Code Section 307.2, polyurethane foam has been identified to be a flammable solid. Tests have documented that polyurethane foam meets both the "burns so vigorously and persistently when ignited…" and the "self sustained flame rate of greater than 0.1 inch (2.5mm) per second…" benchmarks[i]. This creates a large impact when assigning occupancy groups to storage and mercantile facilities that contain both upholstered furniture and mattresses. The proper application of the code with this new information would be to classify them as H-3 due to the presence of flammable solids. While this may not be widely known or understood by enforcers or the regulated community, it is nevertheless substantiated by current code language and laboratory analysis.

The proposed exception will provide a remedy for all Group S and M occupancies that store, display, and sell mattresses. The CPSC Standard 16 CFR Part 1633 tests the mattress assembly as it is produced which more accurately represents the hazard as a whole. As per section 1633.3(b) of the CPSC Standard, the mattress set is deemed to comply when the test specimen meets both of the following criteria: (1) The peak rate of heat release does not exceed 200 Kilowatts at any time within the 30 minute test and (2) The total heat release does not exceed 15 megajoules for the first ten minutes of the test. Without this exception, facilities that store, display or sell mattresses, like those facilities that store, display or sell upholstered furniture containing polyurethane foam, would be classified as Group H-3 occupancy.

[i] 16 CFR1500.44 Testing For National Association of State Fire Marshals on Poly Foam/ Vtec #100-2519-2/Tested: November 2, 2006. VTEC Laboratories Inc.

Cost Impact: This proposal will reduce the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, CPSC16 CFR Part 1633 , for compliance with ICC criteria for referenced standards given in Section 3.6. of Council Policy #CP 28 will be posted on the ICC website on or before January 15, 2008.

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

G30–07/08

308.3 (IFC [B] 202), 308.3.1(IFC [B] 202)

Proponent: Roger Severson, RSA Consulting, representing the Oregon Department of Health Services

1. Revise as follows:

308.3 (IFC [B] 202) Group I-2. This occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing or custodial care ~~on a 24-hour basis~~ for ~~more than five~~ persons who are not capable of self-preservation. This group shall include, but not be limited to, the following:

Hospitals
Nursing homes ~~(both intermediate care facilities and skilled nursing facilities)~~
Mental hospitals
Detoxification facilities

~~A facility such as the above with five or fewer persons shall be classified as Group R-3 or shall comply with the *International Residential Code*.~~

2. Revise as follows:

308.3.1 (IFC [B] 202) Definitions. The following words and terms shall, for the purposes of this section and as used elsewhere in this code, have the meanings shown herein.

CHILD CARE ~~FACILITY~~ FACILITIES. ~~A~~ Child care ~~facility~~ facilities that provide~~s~~ care on a 24-hour basis to more than five children, $2^1/_2$ years of age or less, shall be classified as Group I-2.

DETOXIFICATION FACILITY. Detoxification facilities serve patients who are provided treatment for substance abuse on a 24-hour basis and who are incapable of self-preservation or who are harmful to others.

HOSPITALS AND MENTAL HOSPITALS. A building or portion thereof used on a 24-hour basis for the medical, psychiatric, obstetrical, or surgical treatment of inpatients who are incapable of self-preservation.

NURSING HOMES. Nursing homes are long-term care facilities on a 24-hour basis, including both intermediate care facilities and skilled nursing facilities, serving more than five persons and any of the persons are incapable of self-preservation.

Reason: (Note: Sections 308.1 and 308.2 are unchanged. Section 308.3 is amended for greater conformity of specific facility functions by moving the "hourly basis" and the number of persons into definitions specific to each topic.) A new facility title has been added which works in concert with an amendment to Section 304.1, clinic-outpatient. This new facility reference is for Ambulatory Health Care Facilities and completes the package for outpatient care where patients are not capable of self-preservation.

The only existing sub-section in 308.3 is for Child Care Facilities. Because it is written to look like a defined statement, it's section was changed to become a definitions section and the title and content for Child care facilities was added to the new list of definitions.
The reference to R-3 is deleted because I-2 health care facilities, such as these, are not legally capable of operating in R-3 occupancies, regardless of the number of patients.

Cost Impact For facilities abiding by the requirements for federal funding, or for those areas who are modifying the code in a similar respect, the code change proposal will not increase the cost of construction.

However, for areas where outpatient clinics are allowed to provide services that would render patients incapable of self-preservation and be classified as a B occupancy, there would be an increase to the cost of construction.

Additionally, when a facility is not built to the standards required to receive federal funding, and they would then choose to become certified, another additional cost could be imposed upon the facility.

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

G31–07/08
308.5.1 (IFC [B] 202)

Proponent: Betsy Voss Lease, Christole, Incorporated and Bert Clemons, Brown County Partnership, Accessibility Committee

Revise as follows:

308.5.1 (IFC [B] 202) (Supp) Adult care facility. A facility that provides accommodations for less than 24 hours for more than five unrelated adults and provides supervision and personal care services shall be classified as Group I-4.

Exception: A facility where occupants are capable of responding to an emergency situation without physical assistance from the staff shall be classified as Group ~~R-3~~ A-3.

Reason: The purpose of this proposal is to restore the correct group for over 55 gathering centers/adult day care facilities. The correct group for large adult centers where people are capable of self preservation is A-3 (as indicated in previous editions), not a single family home (Group R-3) as approved for the 2007 Supplement. Group R-3 may be appropriate for adult day care with five or fewer, but Section 308.5.1 is addressing only 5 or more – including large facilities.

Our county recently did a needs survey for the residents. The family assessments indicated a need for day time care facilities for the grandparents living in the home. Concerns were proper nutrition, socialization and safety for the grandparents when the children and parents were away at school and work. Planning has begun for adult day care facilities that will provide a supervised environment, activities and some meals. Each facility can handle from 30 to 100 customers. The buildings being investigated for possible locations are the YMCA, a tenant space in a strip mall, the park district facilities, incorporated into a child care facility, etc. There will be no sleeping facilities. When the day care facility will include adults that may have some forms of Alzheimer's or dementia or mobility impairment that limits their reaction to an emergency, a Group I-4 designation is appropriate, However, when all adults are capable of self-preservation, this facility should not be considered a single family home (Group R-3), but a place where people gather for recreation and amusement (Group A-3).

The change to Group R-3 was not been completely thought out. For example, if these adult centers are evaluated as Group R-3 there is a requirements for sprinklers (903.2.7), and smoke detectors (907.2.10.1.2). While this may be considered a plus for safety – the appropriate requirements should be addressed specifically to this use, not through single family homes. The result is that it does eliminate many of the existing facilities we are investigating as possible locations. What is of additional concern is that there are many exceptions for Group R-3 that are not appropriate for these facilities. For example: as a Group R-3 these facilities can have one exit (1019.2, Item 2), doors that swing in (1008.1.2 Exp. 4), steeper stairways (1009.3, Exp 4) and no accessibility requirements (1107.6.3 only addressed dwelling and sleeping units) to name a few.

We respectively request that you restore the Group A-3 indicated in the 2006 IBC.

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

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

G32–07/08
308.5.1 (IFC [B] 202)

Proponent: Sana Touma, City of Mansfield, TX, representing the North Texas Chapter, ICC

Revise as follows:

308.5.1 (IFC [B] 202) (Supp) Adult care facility. A facility that provides accommodations for less than 24 hours for more than five unrelated adults and provides supervision and personal care services shall be classified as Group I-4.

> **Exception:** A facility where occupants are capable of responding to an emergency situation without physical assistance from the staff shall be classified as Group R-3 when providing accommodations for five or fewer, Group B when providing accommodations for more than five and less than 50, and Group A-3 when providing accommodations for 50 or more.

Reason: The purpose of this code change is to clarify and to clearly state that adult care facilities shall be considered as a Group R-3 only when the occupant load does not exceed five persons capable of responding to an emergency and where the length of stay is less than 24 hours. The code historically permitted a small daycare operation to be classified as a Group R-3 and have the same code requirements as a single family home; however the code limited Group R-3 to those facilities providing accommodations to five or less. It is also reasonable and most fitting to classify more than five but less than 50 persons capable of responding to an emergency as a Group B. When the occupant load is 50 or more Group A-3 is the most appropriate choice. This clarification is need for the proposed language in the 2007 Supplement and to clarify that a daycare classified as a Group R-3 is not unlimited to how many people it may accommodate.

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

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

G33–07/08
302.1, 308.1 (IFC 202), 308.6 (IFC 202), 409 (New),Table 503, 508.3.3, Table 508.4, 708.1, Table 803.9, 804.4.1, 1014.2.3 (IFC [B] 1014.2.3), Table 1016.1 (IFC [B] Table 1016.1), Table 1017.1 (IFC[B] Table 1017.1), 1017.3 (Supp) (IFC [B] 1017.3); IFC 408.6, Table 803.3, 807.1 (IBC [F] 806.1); IPC Table 403.1 (IBC Table [P] 2902.1)

Proponent: Tom Lariviere, Madison Fire Department, MS, representing the Joint Fire Service Review Committee

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL, IBC FIRE SAFETY, IBC MEANS OF EGRESS, IFC AND IPC CODE DEVELOPMENT COMMITTEES AS 5 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

1. Add new text as follows:

308.6 (IFC 202) Group I-5. This occupancy includes buildings or structures, or portions thereof, used to provide treatment for more than three persons on an outpatient basis that reduces the patient's ability of taking action for self-preservation without assistance from others due to the actual treatment procedures or due to the use of general anesthesia.

2. Revise as follows:

308.1 (IFC 202) Institutional Group I. Institutional Group I occupancy includes, among others, the use of a building or structure, or a portion thereof, in which people are cared for or live in a supervised environment, having physical limitations because of health or age are harbored for medical treatment or other care or treatment, or in which people 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 and I-5.

3. Revise as follows:

302.1 General. Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed below. A room or space that is intended to be occupied at different times for different purposes shall comply with all of the requirements that are applicable to each of the purposes for which the room or space will be

occupied. Structures with multiple occupancies or uses shall comply with Section 508. Where a structure is proposed for a purpose that is not specifically provided for in this code, such structure shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved.

1. Assembly (see Section 303): Groups A-1, A-2, A-3, A-4 and A-5
2. Business (see Section 304): Group B
3. Educational (see Section 305): Group E
4. Factory and Industrial (see Section 306): Groups F-1 and F-2
5. High Hazard (see Section 307): Groups H-1, H-2, H-3, H-4 and H-5
6. Institutional (see Section 308): Groups I-1, I-2, I-3 ~~and~~ I-4 and I-5
7. Mercantile (see Section 309): Group M
8. Residential (see Section 310): Groups R-1, R-2, R-3 and R-4
9. Storage (see Section 311): Groups S-1 and S-2
10. Utility and Miscellaneous (see Section 312): Group U

4. Add new text as follows:

SECTION 409
GROUP I-5

409.1 General. Occupancies in Group I-5 shall comply with the provisions of this section and other applicable provisions of this code.

409.2 Occupancy and tenant separation. Group I-5 occupancies shall be separated from other tenants and occupancies by fire partitions with at least a one-hour fire-resistance rating. Doors in such partitions shall be solid core wood of $1^3/_4$ inches or equivalent and shall be equipped with a closing device and positive latch. Vision panels in fire partitions or doors, if provided, shall be fixed fire window assemblies in accordance with Table 715.5.

Exception Mixed-use occupancies classified as separated occupancies which meet the requirements of Section 508.3.3.

409.3 Smoke barriers. Smoke barriers shall be provided to subdivide every story used by patients for sleeping or treatment and to divide other stories with an occupant load of 50 or more persons, into at least two smoke compartments.

Exceptions:

1. Facilities of less than 5,000 square feet (465 m^2) protected by an approved automatic smoke detection system installed in accordance with Section 907.
2. Facilities of less than 10,000 square feet (930 m^2) protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

Such stories shall be divided into smoke compartments with an area of not more than 22,500 square feet (2092 m^2) and the travel distance from any point in a smoke compartment to a smoke barrier door shall not exceed 200 feet (61 m). The smoke barrier shall be in accordance with Section 709.

409.3.1 Refuge area. On floors not housing patients confined to a bed or litter, a minimum of 6 net square feet (0.56 m^2) per occupant shall be provided on each side of each smoke barrier for the total number of occupants in adjoining smoke compartments. On floors housing patients confined to a bed or litter, a minimum of 15 net square feet (2.8 m^2) per patient shall be provided within the aggregate area of corridors, patient rooms, treatment rooms, lounge or dining areas and other similar areas on each side of each smoke barrier.

409.3.2 Independent egress. A means of egress shall be provided from each smoke compartment without having to return through the smoke compartment from which means of egress originated.

409.3.3 Adjoining occupancies. An area in an adjoining occupancy shall be permitted to serve as a smoke compartment for a Group I-5 occupancy where all of the following criteria are met:

1. The separating wall and both compartments meet the requirements of Section 409.3 through 409.3.3.
2. The Group I-5 occupancy is less than 22,500 square feet (2092 m^2).
3. Access from the Group I-5 occupancy to the other occupancy is unrestricted.

5. Revise as follows:

TABLE 503
ALLOWABLE HEIGHT AND AREAS[a]
Height limitations shown as stories and feet above grade plane.
Area limitations as determined by the definition of "Area, building," per story

GROUP		TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
	HEIGHT (feet) HGT(S)	UL	160	65	55	65	55	65	50	40
I-5	S A	UL UL	11 UL	5 37,500	4[e] 23,000	5 28,500	4[e] 19,000	5 36,000	3 18,000	2[e] 9,000

e. Type IIB, IIIB and VB shall not be permitted for I-5 occupancies located below the level of exit discharge. No Group I-5 occupancy shall not be located more than one floor below the level of exit discharge in Types IIIA, IV or VA construction.

(Portions of table and footnotes not shown remain unchanged)

6. Revise as follows:

508.3.3 (Supp) Separation. No separation is required between occupancies.

Exceptions:

1. Group H-2, H-3, H-4 or H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.3.3.
2. Group I-5 occupancies shall be separated from all other occupancies in accordance with Section 409.2.

7. Revise as follows:

TABLE 508.4 (Supp)
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)

OCCUPANCY	A[d], E		I-1, I-2, I-3, I-4		I-5		R[c]		F-2, S-2[b,c], U[c]		B, 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
A[d], E[d]	N	N	1	2	2	2	1	2	N	1	1	2	NP	NP	3	4	2	3[a]
I-1, I-2, I-3, I-4	—	—	N	N	2	2	1	NP	1	2	1	2	NP	NP	3	NP	2	NP
I-5	—	—	—	—	N	N	2	NP	2	2	2	2	NP	NP	3	NP	2	NP
R[c]	—	—	—	—	—	—	N	N	1	2	1	2	NP	NP	3	NP	2	NP
F-2, S-2[b,c], U[d]	—	—	—	—	—	—	—	—	N	N	1	2	NP	NP	3	4	2	3[a]
B, F-1, M, S-1	—	—	—	—	—	—	—	—	—	—	N	N	NP	NP	2	3	1	2[a]
H-1	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	NP	NP	NP	NP
H-2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	1	NP
H-3, H-4, H-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	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. For Group H-5 occupancies, see Section 903.2.4.2.
b. Areas used only for private or pleasure vehicles shall be allowed to reduce separation by 1 hour.
c. See Section 406.1.4.
d. Commercial kitchens need not be separated from the restaurant seating areas that they serve.
e. See Section 409.2 for Group I-5 occupancies.

708.1 (Supp) General. The following wall assemblies shall comply with this section.

1. Walls separating dwelling units in the same building as required by Section 419.2.
2. Walls separating sleeping units in the same building as required by Section 419.2.
3. Walls separating tenant spaces in covered mall buildings as required by Section 402.7.2.
4. Corridor walls as required by Section 1017.1.
5. Elevator lobby separation as required by Section 707.14.1.
6. Walls separating Group I-5 occupancies from other occupancies and tenants as required by Section 409.2.

PART II – IBC FIRE SAFETY

Revise as follows:

TABLE 803.9 (Supp)
INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY

GROUP	SPRINKLERED			UNSPRINKLERED		
	Exit enclosures and exit passageways	Corridors	Rooms and enclosed spaces	Exit enclosures and exit passageways[a,b]	Corridors	Rooms and enclosed spaces[c]
B, E, M, R-1, R-4, I-5	B	C	C	A	B	C

(Portions of table and footnotes not shown remain unchanged)

804.4.1 Minimum critical radiant flux. Interior floor finish and floor covering materials in exit enclosures, exit passageways and corridors shall not be less than Class I in Groups I-2 and I-3 and not less than Class II in Groups A, B, E, H, I-4, I-5, M, R-1, R-2 and S. In all areas, floor covering materials shall comply with the DOC FF-1 "pill test" (CPSC 16 CFR, Part 1630).

Exception: Where a building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, Class II materials are permitted in any area where Class I materials are required, and materials complying with the DOC FF-1 "pill test" (CPSC 16 CFR, Part 1630) are permitted in any area where Class II materials are required.

PART III – IBC MEANS OF EGRESS

1. Add new text as follows:

1014.2.3 (IFC [B]1014.2.3) Group I-5. In Group I-5 occupancies, any room or suite of rooms of more than 2,500 square feet (232 m²) shall have at least two exit access doors remotely located from each other.

(Renumber subsequent sections)

2. Revise as follows:

TABLE 1016.1 (IFC [B] TABLE 1016.1)
CORRIDOR FIRE-RESISTANCE RATING

OCCUPANCY	WITHOUT SPRINKLER SYSTEM (feet)	WITH SPRINKLER SYSTEM[d] (feet)
I-2, I-3, I-4, I-5	150	200

(Portions of table not shown remain unchanged)

For SI: 1 foot = 304.8 mm.

a. See the following sections for modifications to exit access travel distance requirements:
   Section 402: For the distance limitation in malls.
   Section 404: For the distance limitation through an atrium space.
   Section 1016.2 For increased limitations in Groups F-1 and S-1.
   Section 1025.7: For increased limitation in assembly seating.
   Section 1025.7: For increased limitation for assembly open-air seating.
   Section 1019.2: For buildings with one exit.
   Chapter 31: For the limitation in temporary structures.
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 in accordance with Section 903.3.1.2 are permitted.
c. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.
d. The length of exit access travel between any occupiable room door and the exit shall not exceed 150 feet in Group I-5 occupancies.

TABLE 1017.1 (IFC [B] TABLE 1017.1)
CORRIDOR FIRE-RESISTANCE RATING

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING	
		Without sprinkler system	With sprinkler system
I-2[a], I-4, I-5	All	NP	0

(Portions of table and footnotes not shown remain unchanged)

1017.3 (Supp) (IFC [B] 1017.3) 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 Group I-3 occupancies ~~in Group I-3~~ of Occupancy Condition 2, 3 or 4 (see Section 308.4), the dead end in a corridor shall not exceed 50 feet (15 240 mm).
2. In ~~occupancies in~~ Group B, E, F, I-1, I-5, M, R-1, R-2, R-4, S, and U occupancies, where the building is equipped throughout with an automatic sprinkler system in accordance with 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.

PART IV – IFC

Revise as follows:

408.6 Group I-2 and I-5 occupancies. Group I-2 and I-5 occupancies shall comply with the requirements of Sections 408.6.1 and 408.6.2 and Sections 401 through 406. Drills are not required to comply with the time requirements of Section 405.4.

TABLE 803.3
INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY

GROUP	SPRINKLERED			UNSPRINKLERED		
	Exit enclosures and exit passageways	Corridors	Rooms and enclosed spaces	Exit enclosures and exit passageways[a,b]	Corridors	Rooms and enclosed spaces[c]
B, E, M, R-1, R-4, I-5	B	C	C	A	B	C

(Portions of table and footnotes not shown remain unchanged)

807.1 (IBC [F] 806.1) General requirements. In occupancies in Groups A, E, I and R-1 and dormitories in Group R-2, curtains, draperies, hangings and other decorative materials suspended from walls or ceilings shall meet the flame propagation performance criteria of NFPA 701 in accordance with Section 806.2 or be noncombustible.

In Groups I-1, ~~and~~ I-2 and I-5, combustible decorative materials shall meet the flame propagation criteria of NFPA 701 unless the decorative materials, including, but not limited to, photographs and paintings, are of such limited quantities that a hazard of fire development or spread is not present. In Group I-3, combustible decorative materials are prohibited.

Fixed or movable walls and partitions, paneling, wall pads and crash pads, applied structurally or for decoration, acoustical correction, surface insulation or other purposes, shall be considered interior finish if they cover 10 percent or more of the wall or of the ceiling area, and shall not be considered decorative materials or furnishings.

In Group B and M occupancies, fabric partitions suspended from the ceiling and not supported by the floor shall meet the flame propagation performance criteria in accordance with Section 807.2 and NFPA 701 or shall be noncombustible.

PART V – IPC

Revise table as follows:

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

NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTON	WATER CLOSETS (URINALS SEE SECTION 419.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAINS (SEE SECTION 410.1)	OTHER
				Male	Female	Male	Female			
5	Institutional	I-2, I-5	Hospitals, ambulatory nursing home patients[b]	1 per room[c]		1 per room[c]		1 per 15	1 per 100	1 service sink per floor

(Portions of table and footnotes not shown remain unchanged)

Reason: This proposal establishes a new Group I-5 occupancy for Ambulatory Surgical Care Facilities. Currently the IBC classifies these facilities as Group B occupancies. These facilities typically include patients who are not capable of self-preservation in an emergency. These new provisions will provide a level of safety by bringing the ambulatory surgical centers to a higher level of protection, however not quite provide as high a level of safety equivalent to a Group I-2 occupancy.

It is not sensible, to allow the patients to be in a position of unconsciousness, sometimes for hours, and not provide a higher level of protection. This includes level of safety for fire suppression, construction, flame spread, etc. This proposal establishes this occupancy as a separate occupancy but does not require 24 hour stay. The concept of currently allowing a patient to be totally subject to someone else to provide evacuation and care for them when they are unconscious should not be occurring in a B occupancy. In a B occupancy, occupants are awake, they are aware, they are capable of fending for themselves.

This proposal includes height and area, construction allowances, egress requirements, fire drill and evacuation plans, plumbing requirements, separation requirements, and smoke barrier construction. Fire sprinklers and fire alarm will be required since this occupancy will be an I occupancy.

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

Analysis: Note that the changes proposed in Parts II through V of this change are dependent upon the outcome in Part I.

PART I – IBC GENERAL

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

PART II – IBC FIRE SAFETY

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

PART III – IBC MEANS OF EGRESS

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

PART IV – IFC

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

PART V – IPC

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

G34–07/08
304.1 (IFC [B] 202)

Proponent: Larry Litchfield PE and Marge McAllister, Schirmer Engineering

Revise as follows:

304.1 (IFC [B] 202) 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
Animal hospitals, kennels and pounds
Banks
Barber and beauty shops
Car wash
Civic administration
Clinic—outpatient (Non-accredited)
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 (architects, attorneys, dentists, physicians, engineers, etc.)
Radio and television stations
Telephone exchanges
Training and skill development not within a school or academic program

Reason: The IBC provides no separate recognition for independent health care facilities which are required to meet the NFPA 101 life safety code to receive and maintain accreditation from a nationally recognized accreditation organization to meet federal and state requirements. Most health care facilities opt to be accredited by an independent agency, such as JAHCO, in order to be certified to treat patients covered by Medicare and Medicaid. Congress amended the social security act in 1965 to require that health care facilities be accredited by JAHCO. JAHCO uses the provisions of the life safety code as the basis of their accreditation.

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

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

G35–07/08
308.2 (IFC [B] 202), 310.1 (IFC [B] 202)

Proponent: Tom Lariviere, Fire Department, Madison, MS, representing the Joint Fire Service Review Committee

Revise as follows:

308.2 (IFC [B] 202) Group I-1. This occupancy shall include buildings, structures or parts thereof housing more than 16 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following:

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

A facility such as the above ~~with~~ housing five or fewer persons shall be classified as a Group R-3 ~~or shall comply with the *International Residential Code* in accordance with Section 101.2~~. A facility such as above, housing at least six and not more than 16 persons, shall be classified as Group R-4.

310.1 (IFC [B] 202) (Supp) 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* in accordance with Section 101.2. Residential occupancies shall include the following:

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

Boarding houses (transient)
Hotels (transient)
Motels (transient)

Congregate living facilities (transient) with 10 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

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 (not transient)
Convents
Dormitories
Fraternities and sororities
Hotels (nontransient)
Live/work units
Monasteries
Motels (nontransient)
Vacation timeshare properties

Congregate living facilities with 16 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

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.
Adult care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.
Child care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.

Congregate living facilities with 16 or fewer persons.
~~Adult care and child care facilities that are within a single-family home are permitted to comply with the *International Residential Code.*~~

Exception: Occupancies complying with the *International Residential Code* shall not be required to be classified as Group R-3 provided that the building is protected by an automatic extinguishing system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.

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R-4 Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living facilities including more than five but not more than 16 occupants, excluding staff.

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code, or shall comply with the *International Residential Code.*

Reason: The proposal will require that the design of these facilities will stay within the IBC. The IRC does not require sprinklers and many of the occupants of a small facility for the mentally retarded are not capable of self preservation in an emergency.

This proposal will allow these facilities to be constructed either as an R-3 under the IBC which will require a fire sprinkler system, or as a one-family dwelling under the IRC provided a fire sprinkler system is installed.

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

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

G36–07/08
310.1 (IFC [B] 202)

Proponent: Tom Lariviere, Fire Department, Madison, MS, representing the Joint Fire Service Review Committee

Revise as follows:

310.1 (IFC [B] 202) (Supp) 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* in accordance with Section 101.2. Residential occupancies shall include the following:

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

Boarding houses (transient)
Hotels (transient)
Motels (transient)

Congregate living facilities (transient) with 10 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

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 (not transient)
Convents
Dormitories
Fraternities and sororities
Hotels (nontransient)
Live/work units
Monasteries
Motels (nontransient)
Vacation timeshare properties

Congregate living facilities with 16 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

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.
Adult care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.
Child care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.
Congregate living facilities with 16 or fewer persons.

Adult care and child care facilities that are within a single-family home are permitted to comply with the *International Residential Code*

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R-4 Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living facilities including more than five but not more than 16 occupants, excluding staff.

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code~~, or shall comply with the *International Residential Code*~~.

Exception: Facilities complying with the *International Residential Code* need not meet the construction requirements of a Group R-3 provided that the building is protected by an automatic extinguishing system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

Reason: R-4 occupancies can house residents who cannot evacuate within a reasonable amount of time. This change would restrict builders from using the less restrictive IRC unless the home is equipped with a fire sprinkler system. This proposal will require a fire sprinkler system in all R-4 occupancies. A fire sprinkler system is required by federal regulations for any of these facilities that may also be licensed.

Cost Impact: This proposal will increase the cost of construction, unless the facility is also desiring compliance with federal regulations.

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

G37–07/08
312.1 (IFC [B] 202)

Proponent: Robert Braun, CBO, City of Woodinville, WA, representing himself.

Revise as follows:

312.1 (IFC [B] 202) General. Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this code commensurate with the fire and life hazard incidental to their occupancy. Group U shall include, but not be limited to, the following:

Agricultural buildings
Aircraft hangars, accessory to a one- or two-family residence (see Section 412.3)
Barns
Carports
Fences more than 6 feet (1829 mm) high
Grain silos, accessory to a residential occupancy
Greenhouses
Livestock shelters
<u>Playground equipment over 10 feet high</u>
Private garages
Retaining walls
Sheds
Stables
Tanks
Towers

Reason: This would be a new category in the Utility and Miscellaneous structures use and occupancy classification. There is an exempt provision in 105.2 IBC that has been amended in several jurisdictions to include commercial parks equipment. This provision placed in the body of the code will cause reviews for these structures to take place as many are becoming 3 and 4 stories tall, calling themselves “challenge courses” and like structures. This is an emerging industry and therefore presents an immediate need for use classification. Since the current code is silent on this type of use, logical reason suggests that playground equipment (structures) be identified to its use and current provisions located elsewhere in the body of the code applied. The ten foot height limitation was chosen as representing a one story maximum height limitation for falling from guard free playground equipment. There are current standards (ACCT) for these kind of courses. Until ICC can evaluate the ACCT standards, current code provisions and standards should be used.

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

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

G38–07/08
402.2, 402.5.2 (New), 402.9

Proponent: Kerwin Lee, Rolf Jensen & Associates, Inc.

1. Revise as follows:

402.2 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

COVERED MALL BUILDING. A single building enclosing a number of tenants and occupants 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. For the purpose of this chapter, 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 by this section.

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 by this section.

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. For the purpose of this chapter, anchor buildings are not considered as a part of the open mall building.

2. Add new text as follows:

402.5.2 Minimum width open mall. The minimum floor and roof opening width above grade shall be 20 feet (9096 mm) in open malls.

3. Revise as follows:

402.9 (Supp) Smoke control. Where a covered mall building contains an atrium, a smoke control system shall be provided in accordance with Section 404.4.

Exceptions:

1. A smoke control system is not required in covered mall buildings, when an atrium connects only two stories.
2. An open mall building.

Reason: The purpose of the proposed changes is to provide a code process for addressing covered mall types of building projects that do not have a roof over the common pedestrian circulation area. Projects of this type are common, particularly in the "sun belt" areas of the country and in similar climates around the world. These projects should have the same benefits from the covered mall provisions, because an open to the sky mall provides equivalent or better life safety and property protection.

The key to this concept is to have everything a covered mall building would have, except for the roof over the mall area. The requirement for an open mall requires a minimum dimension of 20 feet from grade through the roof. This dimension aligns with Section 402.5.1, minimum mall width for egress. This provides a dimensional value for the required open portion. The open portion would be required from the lowest/grade level to the roof. This will provide ventilation from the lowest level. The intent of this requirement should not prevent the use of balconies on either side of the opening or pedestrian bridges across the opening.

Section 402.9 refers to Section 404, Atriums, for smoke control. When a mall becomes three levels, smoke control is required. The change removes the requirement for smoke control in an open mall. Without a roof over the mall area and required openings from grade level, natural ventilation is provided and mechanical smoke control is no longer necessary. This would include smoke control within the tenant spaces. The main reason for smoke control is to maintain a tenable environment in the mall area to permit occupants of the covered mall building to safely egress. The intent of this change should not affect any other requirements associated with Covered Malls.

Cost Impact: The code change proposal may decrease the cost of construction with the removal of the roof and smoke control system.

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

G39–07/08

402.2, 402.4 (New), 402.7.3, 402.7.3.1; 402.7.3.1.1, 402.4.1.1, 402.4.1.5 (New), 402.4.1.5.1 (New)

Proponent: Sarah A. Rice, CBO, Schirmer Engineering Corporation

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL AND IBC MEANS OF EGRESS COMMITTEES AS 2 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

1. Revise as follows:

402.2 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

COVERED MALL BUILDING. A single building enclosing a number of tenants and occupants such as retail stores, drinking and dining establishments, entertainment and amusement facilities, passenger transportation terminals, offices, and other similar uses, with or without an anchor building(s) attached. ~~wherein two or more tenants have a main entrance into one or more malls. For the purpose of this chapter, anchor buildings shall not be considered as a part of the covered mall building.~~

2. Add new text as follows:

402.4 Mall access. A minimum of two tenant spaces shall have an entrance opening onto a mall, or malls.

402.7.3 Anchor building. Where an anchor building is attached to a covered mall building, the anchor building shall be constructed as a separate building, and not considered as a part of the covered mall building.

3. Revise as follows:

~~**402.7.3**~~ **402.7.3.1 Anchor building separation.** An anchor building shall be separated from the covered mall building by fire walls complying with Section 705.

> **Exception:** Anchor buildings of not more than three stories above grade plane that have an occupancy classification the same as that permitted for tenants of the covered mall building shall be separated by 2-hour fire-resistive fire barriers complying with Section 706.

402.7.3.1.1 ~~**402.7.3.1**~~ **Openings between anchor building and mall.** Except for the separation between Group R-1 sleeping units and the mall, openings between anchor buildings of Type IA, IB, IIA and IIB construction and the mall need not be protected.

PART II – IBC MEANS OF EGRESS

1. Revise as follows:

402.4.1.1 Occupant formula. In determining required means of egress of the mall, the number of occupants for whom means of egress are to be provided shall be based on gross leasable area of the covered mall building (excluding anchor buildings) and the occupant load factor as determined by the following equation.

$$OLF = (0.00007)\ (GLA) + 25 \qquad \textbf{(Equation 4-1)}$$

where:

OLF = The occupant load factor (square feet per person).
GLA = The gross leasable area (square feet).

Exception: Tenant spaces attached to a covered mall building but with a means of egress system that is totally independent of the covered mall building shall not be considered as gross leasable area for determining the required means of egress for the covered mall building.

2. Add new text as follows:

402.4.1.5 Exterior tenant spaces Tenant spaces that do not have an entrance opening onto a mall shall have a main entrance opening directly to the exterior. The main entrance shall be of sufficient width to accommodate not less than one-half the occupant load of the tenant space.

402.4.1.5.1 Exit passageways. Where exit passageways provide a secondary means of egress from both an interior and exterior tenant space, the exit passageway shall be of sufficient width to accommodate both the occupant load from the mall and not less than one-half the occupant load of the each exterior tenant discharging into the exit passageway.

Reason: This proposal seeks recognize how covered mall buildings are being designed today by providing guidance on how to address a tenant spaces, that is are physically part of a covered mall building, but does not have an opening onto a mall with but rather to the exterior of the building. This type of design often creates an "outer loop" of tenant spaces which have no communication with the interior of the mall.

The only element that will vary for these tenant spaces is how they contribute to the design of the means of egress system of the covered mall building. All other elements remain the same, e.g., fire alarm, sprinkler, etc.

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

PART I – IBC GENERAL

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

PART II – IBC MEANS OF EGRESS

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

G40–07/08
402.2

Proponent: Don Lee, DLR Group, representing himself

Revise as follows:

402.2 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

COVERED MALL BUILDING. A single building enclosing single or multiple tenants and occupancies with ~~a number of tenants and occupants 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. For the purpose of this chapter, anchor buildings shall not be considered as a part of the covered mall building.

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.

Reason: The code currently literally applies Section 402 to multiple tenants. This limits the use of the section when it comes to single tenant facilities when in fact those are under single management. The ability to use Section 402 for a single tenant is currently used for airport terminal buildings.

The definition of the covered mall seems to limit the occupancy classification by the use of the tem "such as" rather than restricting the occupancies allowed. As such it has not given any restriction to the occupancy of the covered mall. This is reinforced by 402.1, Exception 1 which states the foyers and lobbies in B, R-1 and R-2 occupancies are not required to comply with 402. To clarify the intent of the code we propose deleting the list of facilities without adding occupancy limitations.

The mall definition also refers to two or more tenants and unnecessarily omits the single tenant facility. Delete the reference to the number of tenants without substitution.

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

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

G41–07/08
402.9 (New), [F] 402.8 (IFC 914.2.1), [F] 402.8.1 (IFC 914.2.2)

Proponent: Jerry J. Barbera, Port of Seattle Airport Building Department, representing himself

THESE PROPOSALS ARE ON THE AGENDA FOR THE IBC GENERAL AND IFC CODE DEVELOPMENT COMMITTEES AS 2 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IBC GENERAL

1. Add new text as follows:

402.9 Courts in Malls. Malls shall be considered open when containing a court or courts that complies with Section 1206.3. Such courts shall be a minimum of 20 feet (6096 mm) wide at roof and floor openings above grade.

2. Revise as follows:

~~402.9~~ **402.10 (Supp) Smoke control**. Where a covered mall building contains an atrium, a smoke control system shall be provided in accordance with Section 404.4.

Exceptions:

1. A smoke control system is not required in covered mall buildings, when an atrium connects only two stories.
2. A smoke control system shall not be required in covered malls containing courts in accordance with Section 402.9 where it can be demonstrated that a tenable environment can be provided at least 6 feet from any walking surface that forms a portion of a required egress system within the covered mall building.

(Renumber the subsequent sections)

PART II – IFC

Revise as follows:

[F] 402.8 (IFC 914.2.1) Automatic sprinkler system. The covered mall building and buildings connected shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, which shall comply with the following:

1. The automatic sprinkler system shall be complete and operative throughout occupied space in the covered mall building prior to occupancy of any of the tenant spaces. Unoccupied tenant spaces shall be similarly protected unless provided with approved alternate protection.
2. Sprinkler protection for the mall shall be independent from that provided for tenant spaces or anchors. Where tenant spaces are supplied by the same system, they shall be independently controlled.

   Exceptions:

   1. An automatic sprinkler system shall not be required in spaces or areas of open parking garages constructed in accordance with Section 406.2.
   2. Sprinkler systems are not required in covered mall buildings containing courts in accordance with Section 402.9 where it can be demonstrated that a tenable environment can be provided at least 6 feet from any walking surface that forms a portion of a required egress system within the covered mall building.

[F] 402.8.1 (IFC 914.2.2) Standpipe system. The covered mall building shall be equipped throughout with a standpipe system as required by Section 905.3.3.

Exception: Where approved, standpipe systems are not required in covered mall buildings containing courts in accordance with Section 402.9

Reason: The purpose of this proposal is to have simpler requirements that allow "malls" to be open to the sky in part or fully. Many proponents in the 2006/2007 Code Development Process tried to allow roof openings in "Covered" Malls but none of them received approval. In my opinion, this was principally because they are making the task much too complicated by adding definitions for "Covered" and "Open" Malls, and do forth. The reason that "covered" malls were designed to be covered began when this type of merchandizing concept was originally invented; the premise was that the shoppers wanted to be in a controlled environment. In many parts of the country, that concept will definitely still be valid, but I don't think it was ever intended to imply that an enclosure over the mall would be particularly more special than an open or even a partially-covered mall; in fact, because they could have originally just been called "Malls" and nothing much really would have changed their design except that some special conditions would have become superfluous, such as smoke control, when malls were mostly open to the sky.

Courts. One other thing that is particularly "special" for covered malls is a potential for fire and/or smoke spreading from floor to floor without being enclosed in a shaft. That issue was mitigated by a sprinkler system and potential for a smoke control system. These items may or may not be a concern for an open mall concept except for sprinklers in the tenant spaces. For malls consisting of one long court or many courts bridged occasionally with walkways across the mall to allow access and cut down travel distance, smoke control and perhaps sprinklers would be largely unnecessary.

Since any building may have a court within it, designers need only be "allowed" to use them specifically; this simplifies the need for descriptions of a completely "open" mall, or a mall designed with one long court, and/or many courts with or without roof overhangs in areas between them and so forth. Using this simple concept eliminates any need for complicated definitions subject to many interpretations. It allows innovative designs including those with partially-roofed areas or bridges across courts.

Smoke Control. Smoke control will be obviously unnecessary at most courts just so long as they meet minimum requirements that are already in Section 402.5. In enclosed malls, the smoke evacuation concept is that the exhaust openings in the roof and intake at floor levels are wide enough to allow a chimney effect to remove and dilute smoke. Travel distance restrictions will still help to achieve a speedy escape.

To make sure no smoke control is needed, the designer needs to demonstrate that no such system is required. That could be by providing a rational analysis of the architectural design concept to see if any thing is necessary. This exception allows for, say, designs involving large roofed areas with scattered courts in the design or if there is no inlet or other constraints to provide the stack effect to provide a flow described in the Airflow Design Method of Section 909.7 and provides control for innovative designs..

Sprinklers and Standpipes. I also searched the IBC for those sections where "covered mall" could be possibly be replaced with word, "mall" or "mall building", from all relevant sections. But I found that nothing will have changed except for where standpipes and sprinkler systems or similar fire protection systems may be necessary in it even though the mall is not covered. It would seem that if I built any building with a relatively wide open court, there would be no requirement for standpipes that I could see. So, rather than complicating the proposal further, I chose to show an exception that would allow the building and fire officials to judge whether this is actually required.

I left the provisions for manual fire alarms in IBC Section 402.13 and 402.14 (more or less cross referenced from IFC Section 907.2.13 and 907.2.20) to be conservative.

Cost Impact: There will be no increased cost impact at all and, in fact, construction costs should be substantially less because less building materials, smoke removal systems and other mechanical equipment, sprinklers in the court areas and so forth would no longer be required

PART I – IBC GENERAL

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

PART II – IFC

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

G42–07/08
402.9

Proponent: Sarah A. Rice, CBO, Schirmer Engineering Corporation

Delete and substitute as follows:

~~**402.9 (Supp) Smoke control.** Where a covered mall building contains an atrium, a smoke control system shall be provided in accordance with Section 404.4.~~

~~**Exception:** A smoke control system is not required in covered mall buildings, when an atrium connects only two stories.~~

402.9 Penetrations of horizontal assemblies. Penetrations of horizontal assemblies in covered mall buildings shall comply with Section 711.

Reason: The proposal seeks to further simplify the whole issue of how to treat penetrations in the floor of a covered mall building. As with any other building, floor construction in a covered mall building is subject to the rules set for in Section 711 for horizontal assemblies. And logic goes that any hole (whether through-penetration or membrane penetration) in the floor (or floors) should be treated just the same as one that is not in a covered mall building.

The proposed language seeks to create a direct connection to the provisions for penetrations in horizontal assemblies, one of which is to use the atrium provisions.

There is a companion change to this one which edits the definition of "atrium" so that the use of the atrium provisions as allowed by the exceptions in Section 707.2 work.

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

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

G43–07/08
402.9

Proponent: Jerry J. Barbera, Port of Seattle Airport Building Department, representing himself

Delete and substitute as follows:

~~**402.9 (Supp) Smoke control.** Where a covered mall building contains an atrium, a smoke control system shall be provided in accordance with Section 404.4.~~

~~**Exception:** A smoke control system is not required in covered mall buildings, when an atrium connects only two stories.~~

402.9 Smoke control. A smoke control system complying with Section 909 shall be provided in covered malls that connect more than two stories.

Reason: The purpose of this proposal is to have a simple requirement that defines when "malls" need to have a smoke control system,. The provisions for smoke control in Atriums in Section 404.4 were modified for the 2003 IBC supposedly cleared this all up, but it was little better than before and is still written in a manner to confuse rather than elucidate the code's intent. The many public comments in the 2006/2007 Code Development Cycle to try to fix this up, graphically showed that it is still a problem.

It is believed that the proposal above makes it clearer that the point that a Mall needs a smoke control system is exactly when it is required for Atriums.

That "when" was gleaned from the 2006 IBC Code Commentary, which interpreted the words "*where required for atriums*" [emphasis is mine], to mean more than 2 stories because the exception to Section 404.4 includes the exception from smoke control, "*Smoke control is not required for atriums that connect only two stories*." Therefore, one must conclude that smoke control is required when a mall is also over two stories!

An Atrium, like a Mall, can include combinations of floors and mezzanines. Atriums could theoretically have a two-story condition with more than 3 levels even if they were only two stories high with a mezzanine on the first story and they would not need a smoke control system. Contrast that with a Mall, which can also have floors or mezzanines, but they all count towards the maximum of "three levels" specified in the definition of a MALL in Section 402. Even though a mall could consist of combinations of floors (including basements, which is a story) and mezzanines up to three levels, by this proposal, there would only be two unique combinations with three levels – i.e., three stories (including a basement) or two stories plus a mezzanine – that would trigger a sprinkler system.

Cost Impact: There will be no increased cost impact at all and, in fact, the exact condition when sprinklers are required would be defined, lessening the chance that designers or code official feel they have to provide a sprinkler system that wasn't needed.

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

G44–07/08
403.1

Proponent: Gregory R. Keith, Professional heuristic Development, representing the Boeing Company

Revise as follows:

403.1 Applicability. The provisions of this section shall apply to buildings with an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

Exception: The provisions of this section shall not apply to the following buildings and structures:

1. Airport traffic control towers in accordance with Section 412.
2. Open parking garages in accordance with Section 406.3.
3. Buildings with ~~an occupancy~~ in Group A-5 occupancy in accordance with Section 303.1.
4. ~~Low-hazard~~ special industrial occupancies in accordance with Section 503.1.1.
5. Buildings with an ~~occupancy in~~ Group H-1, H-2 or H-3 occupancy in accordance with Section 415.

Reason: As proponents of Item G96-04/05, it was our intent to remove some inconsistencies in Section 503.1.1 as regards which hazard categories qualified as special industrial occupancies. At the time, the section limited that designation to low-hazard occupancies, although, some of the examples cited in the provision were moderate-hazard occupancies. Our proposal suggested adding moderate-hazard occupancies to the provision. The code development committee agreed with our concern; however, took it one step further and modified the proposal to increase the flexibility of the provision by eliminating reference to any specific hazard category. Since this provision has appeared in the 2006 Edition of the IBC, it has been noted that Section 403.1 has an exception that references Section 503.1.1, but contains the former "low-hazard" language. Section 403.1 should have been correlated with the change to Section 503.1.1 at the time. This proposal corrects that oversight. It also makes a couple of editorial changes to the exception so that the terminology is consistent with that used elsewhere in the code.

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

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

G45–07/08
403.1

Proponent: Lawrence G. Perry, AIA, representing Building Owners and Managers Association (BOMA) International

Revise as follows:

403.1 Applicability. The provisions of this section shall apply to buildings with an occupied floor located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.

Exception: The provisions of this section shall not apply to the following buildings and structures:

1. Airport traffic control towers in accordance with Section 412.
2. Open parking garages in accordance with Section 406.3.
3. Buildings with an occupancy in Group A-5 in accordance with Section 303.1.
4. Low-hazard special industrial occupancies in accordance with Section 503.1.1.
5. Buildings with an occupancy in Group H-1, H-2 or H-3 in accordance with Section 415.
6. Buildings having an occupied floor level located more than 420 feet (128 m) above the lowest level of fire department vehicle access, where designed using the *ICC Performance Code for Buildings and Facilities.*

Reason: There will undoubtedly again this cycle be a large number of code change proposals seeking to introduce new code requirements for 'mega' high-rise buildings. To date, these issues have been addressed in a piecemeal fashion, with no concerted effort to assess the impact and effectiveness of the various pieces, or to validate requirements based on any rational cost-benefit analysis.

By allowing the use of the ICC *Performance Code*, any new mega high-rise building will require review and analysis by all of the 'stakeholders' in the project.

This code change has been noted as 'increasing the cost' of construction; while use of the Performance Code will likely incur additional up-front design costs, the impact on the construction cost will depend on the design solutions utilized to meet the agreed-upon objectives for the project.

Note that in many cases, the performance-based design will likely utilize portions of the 'prescriptive' I-codes and reference standards. The local jurisdiction (both the building and fire department) are active stakeholders in the process, and will have an active role in determining the goals and objectives for the project, and in approving the resulting design solutions.

The above paragraphs are the reason statement included in the a similar code change submitted last cycle, During last cycle, code changes were approved that:

- Increase by a factor of 7 the required bond strength of spray-applied fire resistant materials (SFRM) in buildings greater than 420' in height, while making no changes to code provisions for alternate methods of protection (such as gypsum board), and without consideration of the cost impact or any explanation of the 'threat' this change supposedly mitigates.
- Add an additional exit stair to buildings above 420' in height, without any consideration of cost, occupant load, or the effect on egress times.

It has become even clearer that the current direction of the I-codes is to simply make buildings greater than 420' in height unfeasible. In certain markets, this is an unrealistic 'solution', and the direction of the IBC over the last several cycles shows that an alternative is needed.

BOMA International believes that the ICC *Performance Code* provides an appropriate framework for all parties to work together as a team to ensure that new very tall buildings are built in a safe, cost-effective manner. This change, as revised from the similar proposal last cycle, will allow the use of the *Performance Code* as an option, rather than as a mandate, for buildings greater than 420' in height.

Cost Impact: This code change will increase the cost of construction.

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

G46–07/08

[F] 403.2.1 (New), 403.2.1.1 (New), [F] 403.2.1.1.1 (New), [F] 403.2.1.2 (New), [F] 403.2.2 (New) [IFC 914.3.1.1 (New), IFC 914.3.1.1.1 (New), IFC 914.3.1.1.1.1 (New), IFC 914.3.1.1.2 (New), IFC 914.3.1.2 (New); IFC 509.1 (IBC [F] 911.1)

Proponent: Gary Lewis, Chair, representing the ICC Ad Hoc Committee on Terrorism Resistant Buildings

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

1. Add new text as follows:

[F] 403.2.1 (IFC 914.3.1.1) Sprinkler riser redundancy and isolation. All buildings that are more than 420 feet (128 m) in height shall have all risers supplying automatic sprinkler systems interconnected to each other at the top and bottom most floor of each vertical riser zone. The interconnections shall be at least as large as the largest riser supplied.

[F] 403.2.1.1 (IFC 914.3.1.1.1) Number of risers and separation. A minimum of two sprinkler water supply risers shall be provided in each vertical riser zone of the building. Sprinkler water supply risers 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 the nearest portion of the sprinkler water supply risers.

[F] 403.2.1.1.1 (IFC 914.3.1.1.1.1) Hydraulic design evaluations. Independent hydraulic design evaluations shall be completed utilizing individual water supply risers for each vertical riser zone. System hydraulic design shall not be based upon redundancy of water supply risers for each vertical riser zone.

[F] 403.2.1.2 (914.3.1.1.2) Control valves. Manual and remote control valves shall be provided on all riser piping supplying automatic sprinkler systems at every third floor of the building served. This requirement is independent of sprinkler floor control valves required by Section 903.4.3

[F] 403.2.2 (IFC 914.3.1.2) Water supply to required fire pumps. Required fire pumps shall draw from a minimum of two independent street level water mains located in different streets.

> **Exception**: When the street level water main is a looped or gridded system, two taps may by drawn from the same main provided the main is valved such that an interruption on one side of the loop or grid can be isolated so that the water supply will continue without interruption through at least one of the taps. Each tap shall be sized to supply the required flow. The taps shall be located as remote from one another as is practicable given the site conditions.

2. Revise as follows:

IFC 509.1 (IBC [F] 911.1) (Supp) Features. Where required by other sections of this code and in all buildings classified as high-rise buildings by the *International Building Code*, a fire command center for fire department operations shall be provided. The location and accessibility of the fire command center shall be approved by the fire department. The fire command center shall be separated from the remainder of the building by not less than a 1-hour fire barrier constructed in accordance with Section 706 of the *International Building Code* or horizontal assembly constructed in accordance with Section 711 of the *International Building Code*, or both. The room shall be a minimum of 96 square feet (9 m^2) with a minimum dimension of 8 feet (2438 mm). A layout of the fire command center and all features required by this section to be contained therein shall be submitted for approval prior to installation. The fire command center shall comply with NFPA 72 and shall contain the following features:

1. The emergency voice/alarm communication system unit.
2. The fire department communications system.
3. Fire-detection and alarm system annunciator system.
4. Annunciator visually indicating the location of the elevators and whether they are operational.
5. Status indicators and controls for air-handling systems.
6. The fire-fighter=s control panel required by Section 909.16 for smoke control systems installed in the building.
7. Controls for unlocking stairway doors simultaneously.
8. Sprinkler valve and water-flow detector display panels.
9. Emergency and standby power status indicators.

10. A telephone for fire department use with controlled access to the public telephone system.
11. Fire pump status indicators.
12. Schematic building plans indicating the typical floor plan and detailing the building core, means of egress, fire protection systems, fire-fighting equipment and fire department access.
13. Work table.
14. Generator supervision devices, manual start and transfer features.
15. Public address system, where specifically required by other sections of this code.
16. Elevator fire recall switch in accordance with ASME A17.1.
17. Elevator emergency or standby power selector switch(es), where emergency or standby power is provided.
18. Controls and status indicators for remote control valves on vertical sprinkler/standpipe risers

Reason: The purpose of this proposed change is to increase the reliability of fire suppression systems in very tall buildings, those that exceed 420 feet in height, by requiring looping of sprinkler uses and independent street-level water feeds.

The difficulty of fighting fires in very tall buildings ranges from hard to virtually impossible. Accordingly, the reliable functioning of required sprinkler systems is critically important. The National Institute of Standards and Technology (NIST) World Trade Center (WTC) Report documented that the proximate cause of the collapse was a building contents fire that raged out of control, in part at least, because the building's fire sprinkler systems were non-functional due to the initial aircraft attack. Events far less dramatic could knock out or make a sprinkler riser inoperative, thereby leaving the structure very vulnerable to fire.

Recommendation 12 of the NIST WTC report calls for the redundancy of active fire suppression systems to be increased to accommodate the greater risks associated with increasing building height and population. This proposal seeks to do that by providing two water feeds to each floor designed such that the system will function as intended if one of those feeds is damaged or otherwise interrupted.

It is interesting to note that existing standards for water mains in residential subdivisions call for looping and valving to ensure that no more than 20 homes could be cut off by a water main break. Such a break would create a fire suppression risk for 4 people (the average occupancy of one home) or no more than 80 people (assuming all 20 homes catch fire). In contrast, we do not require looping and valving to isolate failure in buildings that might contain 10,000 occupants. This proposal seeks to correct that problem.

Proposed new Subsection 403.2.1 requires the interconnection (looping) of sprinkler risers in each vertical zone.

Proposed new Subsection 403.2.1.1 requires two risers for every zone and specifies a separation distance to reduce the possibility that one incident could incapacitate both risers.

Proposed new Subsection 403.2.1.1.1 ensures that the sprinkler system will be designed to function as intended and required from either riser. This is consistent with the goal of providing redundancy.

Proposed new Subsection 403.2.1.2 requires riser control valves at every third floor of the building. This provision supports the stated intent of this code change by ensuring that a riser break (or other problem eliminating the riser's functionality) will not leave more then two floors without the required sprinkler protection. Standpipe control valves are already required to be monitored and NFPA 14 requires redundancy. However, the control valves required by new section 403.2.1.2 are in addition to the control valves required by NFPA 14. Along with the redundant sprinkler riser that is required by section 403.2.1, the valves required by this new section will assure that any riser break will not leave more than two floors without the required sprinkler protection.

These new valves raise the possibility that someone will inadvertently close one or more. Accordingly, a proposed amendment to Section 911.1 of the Code requires that these automatic valves be able to be monitored from the fire command center by the use of status indicators. This will make it possible to monitor continuously all riser valves from one location and correct any problem from that location.

New Subsection 403.2.2 requires fire pumps to be fed from two independent water mains in separate streets. This will greatly reduce the possibility of the loss of water due to a main break, given the valving which is a feature of public water systems.

Bibliography:

National Institute of Standards and Technology. Final Report of the National Construction Safety Team on the Collapses of the World Trade Center Towers. United States Government Printing Office: Washington, D.C. September 2005.

Cost Impact: This proposal will increase the cost of construction for very tall buildings, but the additional cost is warranted by the additional risk inherent in such buildings.

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

G47–07/08

403.3.1

Proponent: Eric H. Cote, PE, Hughes Associates, Inc., representing Worthington Integrated Building Systems

Revise as follows:

403.3.1 (Supp) Type of construction. The following reductions in the minimum fire resistance rating of the building elements in Table 601 shall be permitted as follows:

1. For buildings not greater than 420 feet (128 m) in height, the fire resistance rating of the building elements in Type IA construction shall be permitted to be reduced to the minimum fire resistance ratings for the building elements in Type IB.

   Exception: The required fire-resistance rating of columns supporting floors shall not be permitted to be reduced.

2. In other than Groups F-1, M and S-1, the fire resistance rating of the building elements in Type IB construction shall be permitted to be reduced to the fire resistance ratings in Type IIA.

   Exception: In buildings with a Group M occupancy located in a basement or first story above grade plane the fire resistance rating of the building elements in Type IB construction shall be allowed to be reduced to the fire resistance ratings in Type IIA when the following conditions are met:

   1. The basement or first story above grade plane containing the Group M occupancy shall be of Type IA construction and is separated from the stories above with a horizontal assembly having a minimum 3-hour fire resistance rating constructed in accordance with Section 711.
   2. Shaft, stairway, ramp, or escalator enclosures through the 3 hour fire resistance rated horizontal assembly shall be constructed of fire barriers in accordance with Section 706 having not less than a 2-hour fire-resistance rating with opening protectives in accordance with Table 715.4. Enclosure walls connecting less than four stories shall be permitted to be constructed of fire barriers in accordance with Section 706 having a 1 hour fire resistance rating with 1 hour rated opening protectives above the 3 hour fire resistance rated horizontal assembly where the enclosure walls below the horizontal assembly are constructed of fire barriers in accordance with Section 706 having a 3 hour fire resistance rating with opening protectives in accordance with Table 715.4.

3. The height and area limitations of a building containing building elements with reduced fire resistance ratings shall be permitted to be the same as the building without such reductions.

Reason: Where a high-rise, mixed occupancy building contains "street level" Group M occupancy areas that are in excess of the accessory occupancy thresholds (IBC 508.3.1), application of the construction reduction provision (Type IB to Type IIA) in IBC 403.3.1(2) is not permitted. As a result, the construction classification of the building and the associated structural fire resistance ratings, building wide, are dictated by the existence of the Group M occupancy area. The Code Commentary suggests that the construction reduction "is not applicable to moderate-hazard buildings because of their customarily higher fuel loads." However, the combination of IBC 508.3.1 and 602.1 are such that there is no accommodation for mixed occupancy high-rise buildings, which are predominately low-hazard buildings but include "street level" Group M occupancy tenants; such occupancies being required in many instances by municipal planning boards and/or zoning regulations. The current Code provisions are overly restrictive in this regard.

The code change proposal incorporates a new exception to IBC 403.3.1(2) that allows for the inclusion of "street level" Group M occupancy retail areas in high-rise, mixed occupancy buildings, which are of Type IIA construction (reduced from Type IB). The proposal requires 3-hour structural fire resistance ratings within the Group M occupancy area(s) and 3-hour separation from the floors above. The proposed 3-hour structural fire resistance ratings and separation are consistent with the provisions in IBC 705.4 and the supporting fuel load-fire severity studies/tests referred to in the Code Commentary. Additional fuel-load-fire severity information is found in the following publication: Boring, Delbert F., James C. Spence, Walter G. Wells. "Fire Protection through Modern Building Codes, Fifth Edition." American Iron and Steel Institute. Washington D.C. 1981 (pp. 34, 66-67, 75).

Bibliography

1. Boring, Delbert F., James C. Spence, Walter G. Wells. "Fire Protection through Modern Building Codes, Fifth Edition." American Iron and Steel Institute. Washington D.C. 1981.
2. International Code Council. "2006 International Building Code - Code and Commentary Volume 1." International Code Council, Inc. United States of America. 2006.

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

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

G48–07/08

403.3.1, 403.3.2, 507.8, 3310.1 (IFC [B] 1411.1)

Proponent: Philip Brazil, PE, Reid Middleton, Inc., representing himself

Revise as follows:

403.3.1 (Supp) Type of construction. The following reductions in the minimum fire resistance rating of the building elements in Table 601 shall be permitted as follows:

1. For buildings not greater than 420 feet (128 m) in building height, the fire resistance rating of the building elements in Type IA construction shall be permitted to be reduced to the minimum fire resistance ratings for the building elements in Type IB.

   Exception: The required fire-resistance rating of columns supporting floors shall not be permitted to be reduced.

2. In other than Groups F-1, M and S-1, the fire resistance rating of the building elements in Type IB construction shall be permitted to be reduced to the fire resistance ratings in Type IIA.
3. The height and area limitations of a building containing building elements with reduced fire resistance ratings shall be permitted to be the same as the building without such reductions.

403.3.2 Shaft enclosures. For buildings not greater than 420 feet (128 m) in building height, the required fire-resistance rating of the fire barriers enclosing vertical shafts, other than exit enclosures and elevator hoistway enclosures, shall be reduced to 1 hour where automatic sprinklers are installed within the shafts at the top and at alternate floor levels.

507.8 (Supp) 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 412.4 and is entirely surrounded by public ways or yards not less in width than one and one-half times the ~~height of the~~ building height.

3310.1 (IFC [B] 1411.1) Stairways required. Where a building has been constructed to a building height ~~greater than~~ of 50 feet (15 240 mm) or four stories, or where an existing building exceeding 50 feet (15 240 mm) in building height is altered, at least one temporary lighted stairway shall be provided unless one or more of the permanent stairways are erected as the construction progresses.

Reason: The changes are proposed for consistency with the actions taken by the membership on Proposal G81-06/07-AS. In IBC Section 3310.1 and IFC Section 1411.1, "greater than" is changed to "of" because "constructed to a building height of 50 feet" adequately specifies the threshold before a temporary lighted stairway is required. A related proposal adjusts the references to "height" and "building height" in Chapter 5.

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

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

G49–07/08
403.3.1

Proponent: Lee Krantz, City of Bellevue, WA, representing the Washington Association of Building Officials (WABO), Technical Development Subcommittee

Revise as follows:

403.3.1 (Supp) Type of construction. The following reductions in the minimum fire resistance rating of the building elements in Table 601 shall be permitted as follows:

1. For buildings not greater than 420 feet (128 m) in height, the fire resistance rating of the building elements in Type IA construction shall be permitted to be reduced to the minimum fire resistance ratings for the building elements in Type IB.

   Exception: In Seismic Design Categories D, E, and F, the required fire-resistance rating of the structural frame and bearing walls ~~columns supporting floors~~ shall not be permitted to be reduced.

2. In other than Groups F-1, M and S-1, the fire resistance rating of the building elements in Type IB construction shall be permitted to be reduced to the fire resistance ratings in Type IIA.

   Exception: In Seismic Design Categories D, E, and F, the required fire-resistance rating of the structural frame and bearing walls shall not be permitted to be reduced.

3. The height and area limitations of a building containing building elements with reduced fire resistance ratings shall be permitted to be the same as the building without such reductions.

Reason: The reduction in fire resistance rating allowed in this section has created an unacceptable level of safety for building occupants due to higher potential for catastrophic building collapse in the event of a fire. In mid- and high-rise construction the structural frame and/or bearing walls may serve as the sole support system for the building. In many building designs these systems may be non-redundant and support significant axial loads at the lower floor levels which will tend to increase the risk of premature failure when subjected to fire. By maintaining the fire resistance rating for the structural frame and bearing walls a higher level of safety for occupants, fire fighters and emergency responders is maintained.

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

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

G50–07/08
403.3.2

Proponent: Thomas Kinsman, T. A. Kinsman Consulting Company, representing himself

Revise as follows:

403.3.2 Shaft enclosures. For buildings not greater than 420 feet (128 m) in height, the required fire-resistance rating of the fire barriers enclosing vertical shafts, other than exit enclosures and elevator hoistway enclosures, shall be permitted to be reduced to 1 hour where automatic sprinklers are installed within the shafts at the top and at alternate floor levels.

Reason: This proposal clarifies the codes intent which is to permit the fire resistive reduction but not demand the reduction.

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

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

G51–07/08
403.4 (New), 403.2 (New)

Proponent: Gary Lewis, Chair, representing the ICC Ad Hoc Committee on Terrorism Resistant Buildings

Add new text as follows:

403.4 Structural performance. Buildings that are more than 420 feet (128 m) in height shall be designed to survive a building contents fire to burnout without more than local failure of the structural frame. The building contents fire shall be analyzed in accordance with Section 1701.3.15 of the *ICC Performance Code for Buildings and Facilities* and shall be based on an approved design fire without sprinkler activation. The design fire shall be a quantitative description of assumed design fire characteristics that can reasonably be expected to occur during the life of the building and shall take into consideration the following: fuel loading; peak heat release rate(s); amount of air available; and confinement of the fire(s). The approved design fire shall be used to conduct a deterministic fire safety engineering analysis. Minimum fire load densities for each specific occupancy within a building shall be based upon approved fire engineering guidelines and shall take into account appropriate safety factors. In a mixed used building, the appropriate fire load for each portion of the building shall be based on the occupancy classification for that portion. The fire resistance rating of the structural frame shall not be less than the fire resistance ratings prescribed in Table 601.

(Renumber subsequent sections)

403.2 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

LOCAL FAILURE. A failure of the area of floor at any story at risk of collapse that does not exceed 15% of the floor area of that story or 750 square feet, whichever is smaller, or does not extend further than the immediate adjacent story.

STRUCTURAL FRAME. The columns and the girders, beams, trusses, and spandrels having direct connections to the columns and bracing members designed to carry gravity loads. Members of floor and roof construction that are not connected to the columns shall be considered secondary members and not part of the structural frame.

(Renumber subsequent sections)

Reason: The purpose of this change is to establish a specific performance objective: that very tall buildings (those over 420 feet in height) be analyzed to ensure that they will survive a building contents fire without collapse. The change is intended to implement Recommendations of the National Institute of Standards and Technology's (NIST) World Trade Center (WTC) report.

It needs to be made clear that this new provision is *not* a performance provision. It merely establishes the same safety objective that forms the basis of the current approach to structural fire resistance, only for buildings at high risk due to the consequence of failure. In these buildings it is necessary that the safety objective be demonstrated by calculation rather than by the standard fire resistance test. To clarify that the current prescriptive approach is based on burnout without collapse, here is a brief historical perspective…

As a result of the Baltimore fire of 1904, ASTM organized Committee P on Fireproofing Materials in 1905. In 1917, Committee C-5 (renamed from Committee P) prepared a standard, C 19, (later designated E 119) which was adopted in 1918 as a specification for "Fire Tests of Materials and Construction." This standard introduced the standard time-temperature (furnace heating) curve which has remained essentially unchanged to this day. It is interesting to note that the standard heating curve was developed by consensus and was not based on temperatures achieved during a full burnout (Hall 2004). Ingberg's work at NBS (now NIST), however, led to the empirical relationship between fuel load, fire duration, and structural resistance in units of time (Bukowski 2006) and provided the scientific basis for the time-temperature curve approach to fire safety design. It was generally held that the standard time-temperature curve represented a limiting condition for a ventilation-controlled fire with typical fuel loads and ventilation characteristics of most buildings (Bukowski 2006). The fire safety design objective was that, under the worst case conditions (i.e., no suppression), all of the combustibles in the compartment should be consumed without causing failure of any structural member – that is, burnout without local or global collapse (Bukowski 2006).

When the standard fire curve was introduced in 1918, bay sizes were smaller than they are today, buildings heights were less, materials of construction were different than those used today, and combustibles had different burning characteristics than modern materials. The proposed code change is completely consistent with the *basis* for today's prescriptive approach to fire safety and is intended to insure that, for high-rise buildings – those buildings that pose the highest risk due to the consequence of failure – the basic fire safety design objective of burnout without local or global collapse is achieved.

Furthermore, by not specifying the design fire in the proposal, the engineer may utilize any number of resources for specifying the characteristics of a fire that can reasonably be expected to occur during the life of the building such as: the *SFPE Engineering Guide to Performance-Based Fire Protection* (SFPE), Chapter 8 – Developing Design Fire Scenarios; *Structural Design for Fire Safety* by Andrew Buchanan (Wiley); Chapter 4 Room Fires; Section 4.5 Design Fires; ISO/DTS 16733 "Fire Safety Engineering – Selection of design fire scenarios and design fires" (draft technical standard); Eurocode 1: Actions on structures, Part 1-2: General actions – Actions on structures exposed to fire (EN 1991-1-2:2002); Section 2 Structural fire design procedures.

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Bukowski, Richard W. (2006). "Determining Design Fires for Design-Level and Extreme Events,"SFPE 6th International Conference on Performance-Based Codes and Fire Safety Design Methods, June 14-16, 2006, Tokyo.

Hall, John R. (2004). "A Century of Fire Standards," Standardization News, December 2004, ASTM International, West Conshohocken, Pennsylvania

Cost Impact: This proposal may increase the amount of passive fire protection in very tall buildings and so increase costs. The proponents believe that there will be some increased costs in many very tall buildings, but that costs will be both moderate and warranted when the performance analysis demonstrates a potential weakness.

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

G52–07/08

403.4 (New), 403.2 (New)

Proponent: Ramon Gilsanz, Gilsanz Murray Steficek LLP

Add new text as follows:

403.4 Structural performance. Buildings that are more than 420 feet (128 m) in height shall be designed to survive a fire that burns until all combustible material is consumed without more than local collapse of the structural frame through compliance with Section 403.15.1 or 403.15.2.

403.4.1 Prescriptive method. The fire resistance rating of the structural frame and floor construction shall be a minimum of 4 hours.

403.4.2 Performance method. The structural response shall be calculated under the design fire conditions to verify that it does not produce more than a local collapse. The fire-resistance rating of the structural frame shall not be less than the current fire resistance rating prescribed in Table 601. The design fire shall assume sprinklers do not activate. The approved design fire shall address the following: fuel loading; peak heat release rate(s); amount of air available; and confinement of the fire(s). Minimum fire load densities for each specific occupancy within a building shall be based upon approved fire engineering guidelines and shall take into account appropriate safety factors. In a mixed used building, the appropriate fire load for each portion of the building shall be based on the occupancy classification for that portion.

(Renumber subsequent sections)

403.2 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

LOCAL COLLAPSE. Failure of a structural element that results in the collapse of areas being directly supported by that element and not extending vertically more than three stories.

STRUCTURAL FRAME. The columns and the girders, beams, trusses, and spandrels having direct connections to the columns and bracing members designed to carry gravity loads. Members of floor and roof construction that are not connected to the columns shall be considered secondary members and not part of the structural frame.

Reason: The purpose of this change is to establish the objective that very tall buildings (those over 420 feet in height) be analyzed to ensure that they will survive a building contents fire without collapse. Currently, it is unclear whether modern building styles can resist a total fire burnout without collapse. Until proper testing and analysis is completed it is necessary to raise the minimum fire resistance for public safety.

The goal of the structural engineering community should be to design buildings to resist collapse from fire in a manner similar to designing buildings to resist collapse when exposed to other loads (i.e. gravity, earthquakes, wind, etc.). Engineers design structures to withstand a number of potential damaging events. These events cause losses of different magnitudes, give varying levels of warning to the public, and occur with different frequencies. An earthquake does not give any warning, whereas the public is forewarned about a flood. We know that the economic loss due to a flood or an earthquake can be comparable, but because of the difference in warning times, a flood may lead to a smaller loss of human life than an earthquake.

The frequency of occurrence of each event is characterized by the probability of that event happening in any given year, and the probability of occurrence is measured by the return period. The code earthquake loads have a 2500 year return period, meaning the probability that an earthquake of the design intensity happens in a given year is 1 in 2500. The code wind load has a 500 year return period. The code flood loads have a 150 year return period. Events that give the public more warning have smaller return periods because they present a lesser threat to human life.

Fires occur without warning and can cause significant economic and human loss. Fire statistics of the past 30 to 40 years for buildings less than 100 years old may not provide a complete picture of the risk the public faces or the potential economic loss. Engineers and building professionals should establish the proper return period for fire design, the risks of building collapse due to fire, and the associated losses. As an example, even though New York City has not suffered any significant earthquake losses to date, in 1995, after evaluating whether the benefits merit the costs, the City added seismic design requirements to the building code. Although the seismic threat is small, it was still deemed significant enough to merit structural design. The threat of fire can also be substantial, and should warrant sufficient structural design as well.

Although the probability of a fire suppression system failing is low, the impacts of such a failure are significant. The public, in recent tragic disasters, has demonstrated intolerance to large life loss potentials regardless of the infrequency of such events. This code proposal would help confirm to the public that the tall buildings they or their loved ones use will not collapse under a total fire burnout. When a building collapses due to fire, its occupants and emergency responders are placed at risk, and there is potential for economic loss to the building, to neighboring structures, and to the city. In addition, in high-rise buildings, occupants may become trapped above fire level, and their safety depends on the capability of the building to avoid collapse.

The increase of the prescriptive fire resistance to four hours is based on research done for a 1942 report BMS92, “Building Materials and Structures: Fire Resistance Classifications of Building Constructions” issued by the National Bureau of Standards. This report defines “fireproof construction” as, “that type of construction in which the structural elements are of incombustible materials with fire resistance ratings sufficient to withstand the fire severity resulting from the complete combustion of the contents and finish involved in the intended occupancy”, with the resistance not less than specified minimum ratings. For Type I construction, this report sets the minimum fire resistance to 4 hours for the structural frame and floor construction. Implementing a firm definition of “fireproof construction” such as that issued in 1942 is necessary. As the viability of the current minimum values has been shown to be questionable it is necessary that they be raised until validated. Raising the values will help prevent building collapse due to burnout and ensure that modern construction is fireproof.

This increase is a reversal of the relaxation in fire resistance ratings that has occurred since the early 1900’s. They were relaxed due to the installation of fire suppression systems and the limited number of significant fires in large buildings. Over the years, the required fire resistance of major structural elements has been progressively reduced from an original requirement of 4-hour to as low as 1-hour resistance when tested using the ASTM E119 procedures. Whether relaxing the prescriptive requirements for an economic reason was correct has not been technically confirmed. This places a heavy reliance on sprinklers and fire suppression systems, with the assumption that they will be properly maintained and fully operational at the time of a fire. Until this reliance is proven to be well-founded, buildings should be designed to resist collapse due to fire in the event that a fire suppression system fails. Fire suppression systems are important life-saving devices, and the intent is not to replace them with burnout design. Rather, structural design for total burnout should supplement fire suppression systems; both should be required.

In addition to the reduction in the prescriptive requirements over time, their use has also been expanded for application to new materials and assemblies. Behavior of these new components and materials is determined through testing. The behavior of the whole system is then extrapolated from the component behavior. Although this approach is usually reasonable, its validity for new methods of construction, such as those using larger bay sizes, different and lighter materials, and different connections is unclear. The assembly may behave differently than what is predicted from the behaviors of its different components considered independently. Unfortunately, the American Society for Testing and Materials (ASTM) procedures do not address the impact of fire on the integrated structural system.

Our European counterparts have conducted full-size fire tests in Cardington, UK, demonstrating the satisfactory behavior of steel structures under total fire burnout. Unfortunately, in the US, our steel connection types differ from, and are not as strong as, the English connections that have axial strength requirements. Therefore, the UK tests cannot be applied to structures in the US. To date, we have not conducted full-size tests of our buildings. These tests, if conducted, could verify whether our current design practices are sufficient protection in the event of a total burnout. They could also reveal the strengths and weaknesses in our building design practices.

On September 11th, the failure of towers 1 and 2 of the World Trade Center (WTC) proved to us that buildings that are structurally damaged can collapse due to fire. The partial collapse of WTC 5 from fire was due to a particular steel framing system, and the total collapse of WTC 7 may be attributed in large measure to the fire in the building. The high rise building fire at One Meridian Plaza, Philadelphia, in 1991, burned 9 of the 38 floors, but the structure did not collapse. In all these buildings, the fire suppression system was not operational or was only partially operational at the time of the fire.

The uncertainty in the structural performance of buildings under total fire burnout has also been witnessed in other countries. The 2000 fire in the 540 m tall (1,772 ft) Moscow, Russia Ostankino TV tower started at 440 m (1,443 ft) and burnt down to 100 m (328 ft) above ground, tilted the spire 2 meters (6.5 ft), and lasted 24 hours. As the authorities were uncertain whether the tower would collapse, for security, they created a 700 meter (2,296 feet) exclusion zone around the tower and removed fuel from nearby fuel stations. In 2004, a fire collapsed a 12 story building in Nasr, Egypt after only 3 hours, and, in 2005, the Windsor building in Madrid, Spain burnt for 18 hours, suffered a very significant partial collapse and was later demolished. These losses, their varying burnout times, and the degree of structural failure, relay the uncertainty of whether our current designs can withstand the threat of total burnout.

By increasing the fire resistance ratings and calculating the design fire, engineers can both ensure building safety and have the opportunity to witness the strengths and weaknesses of our modern structures. The engineer may utilize any number of resources for specifying the characteristics of a design fire that can reasonably be expected to occur during the life of the building such as: the *SFPE Engineering Guide to Performance-Based Fire Protection* (SFPE), Chapter 8 – Developing Design Fire Scenarios; *Structural Design for Fire Safety* by Andrew Buchanan (Wiley); Chapter 4 Room Fires; Section 4.5 Design Fires; ISO/DTS 16733 "Fire Safety Engineering – Selection of design fire scenarios and design fires" (draft technical standard); Eurocode 1: Actions on structures, Part 1-2: General actions – Actions on structures exposed to fire (EN 1991-1-2:2002); Section 2 Structural fire design procedures.

In summary, it would behoove us to face the potential challenges that may arise with the enactment of this proposition. The advantages of having buildings that remain standing after burnout far outweigh the possible costs. Similar challenges were accepted and resolved by our predecessors, leading to major life-saving enhancements in structural design. This proposal, with its potential for a no-cost impact, should be embraced and implemented for the well-being of future generations.

Bibliography:

Federal Emergency Management Agency. "World Trade Center Building Performance Study: Data Collection, Preliminary Observations, and Recommendations." FEMA 403. May 2002.

Kevin LaMalva. "Failure Analysis of the World Trade Center 5 Building." Worcester Polytechnic Institute. Student Research. M.A. 2007

National Bureau of Standards. "Building Materials and Structures, Report BMS92: Fire Resistance Classifications of Building Constructions" Report of Subcommittee on Fire-Resistance Classifications of the Central Housing Committee on Research Design and Construction. United States Government Printing Office. Washington, D.C. October 7, 1942.

United States Fire Administration. "Technical Report Series: High Rise Office Building Fire, One Meridian Plaza, Philadelphia (February 23rd 1991)." Federal Emergency Management Agency. United States Fire Administration. National Fire Data Center. << http://www.interfire.org/res_file/pdf/Tr-049.pdf>>

Cost Impact: The cost of this proposal will depend upon the analysis option chosen and the strength of our modern building methods. If the engineer opts to use the 4-hour fire resistance there will be an increased cost. If the engineer uses the performance approach there will either be no-cost impact in the event that the calculations validate the current minimum values, or a cost that ensures the structure does not collapse.

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

G53–07/08
[F] 403.7

Proponent: Tom Lariviere, Fire Department, Madison, MS, representing the Joint Fire Service Review Committee

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

Revise as follows:

[F] 403.7 Emergency responder radio ~~Fire department~~ communications system. ~~A two-way fire department communications system shall be provided for fire department use in accordance with Section 907.2.12.3.~~
An emergency responder radio communications system shall be installed where required to provide the required level of radio coverage for emergency responders by allowing radio frequencies to be transmitted and received throughout the building. Amplifiers shall be able to handle the frequencies in operation by the local emergency responder agencies. A permanent sign shall be installed in the fire command center indicating the presence of the amplification system and the frequencies served.

Reason: To allow the emergency services to communicate properly throughout the building during an emergency. This proposal will replace the typical hardwired communications system with a radio system that will work with the FD radio system and provide adequate radio communications

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

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

G54–07/08
403.10

Proponent: Ed Donoghue, Edward Donoghue Associates Inc. (EADAI)

Revise as follows:

403.10 (Supp) 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, a minimum of ~~one~~ three fire service access elevators shall be provided in accordance with Section 3007.

Reason: This particular proposal focuses upon the number of fire service access elevators that should be provided. More specifically the Fire Service must be able to count on at least two elevators at all times upon arrival at the fire scene. Past experience during fires of this type (high-rise), is that on many occasions elevators are not available due to shut downs for various reasons. For this reason, there should be **three** fire service access elevators, to provide the probability of having a minimum of two upon arrival. These would include car shut down because of problems in operation, routine maintenance, modernization programs, EMS operations in the building prior to their arrival and many other reasons to numerous to recount.

Background. As a result of the September 11, 2001 attacks on the World Trade Center, code provisions for emergency egress from tall buildings are being re-examined. There is renewed interest in the use of elevators for both occupant egress and fire fighters access. Therefore a Workshop on the Use of Elevators in Fires and Other Emergencies was held March 2-4, 2004, in Atlanta, Georgia. The workshop was cosponsored by American Society of Mechanical Engineers (ASME International), National Institute of Standards and Technology (NIST), International Code Council (ICC), National Fire Protection Association (NFPA), U.S. Access Board, and the International Association of Fire Fighters (IAFF).

The workshop focused on two general topics:

(1) Use of Elevators by Fire fighters and

(2) Use of Elevators by Occupants during Emergencies

To follow up on the ideas generated at the workshop, 2 task groups were formed; one for each topic. Their goals are:

- Review the suggestions from the Workshop on the Use of Elevators in Fires and other Emergencies.
- Develop a prioritized list of issues.
- Conduct a hazard analysis of the prioritized list of issues to see if there are any residual hazards.
- Draft code revisions for those issues that survive the process and the task group members still want addressed.

The membership of these task groups is broad and includes representatives from the elevator industry and manufacturers of devices such as fire alarms, the fire service, model codes and standards development organizations, and the accessibility community as well as fire protection engineers, architects and specialists in human factors and behavior. Since February 2005 the groups have each been conducting a hazard analysis on their assigned topic. The results of the hazard analysis focused upon the fire fighter needs is nearing completion.

The task group studied 16 different cases. In these cases a particular hazard followed by a cause/trigger was reviewed. The result of the hazard interacting with cause/trigger events may create a particular incident/effect. To address possible incident/effects corrective actions are proposed. Such corrective actions are then reviewed to see if they create any residual hazards. The hazard analysis then carries out each of the residual hazards with additional corrective actions until the hazard is mitigated. It is strictly a hazard analysis (i.e. not probabilistic) and certain assumptions were made such as a single fire start in a high rise building.

The code changes generated by this analysis are related both to the summary of corrective actions resulting from the hazard analysis and the existing language related to fire service access elevators placed into the 2007 supplement.

These proposals will work with the 2007 supplement requirements for fire service access elevators to address these concerns. It should be noted that the hazard analysis assumed a lobby to be directly connected with the fire service access elevator thus making the result of the analysis consistent with the philosophical approach found in the 2007 Supplement.

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

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

G55–07/08

403.10 (New)

Proponent: Greg Lake, Sacramento Metropolitan Fire District, representing the California Fire Chiefs Association (Cal Chiefs)

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 text as follows:

403.10 Elevator hoistway shaft enclosure integrity. For buildings greater than 420 feet in height above grade plane, the fire-resistance rating of the elevator hoistway enclosure walls shall be determined by meeting the conditions of acceptance specified in ASTM E119 with the hose stream test conducted at the end of the fire test for the original test specimen to determine the integrity of the wall.

(Renumber subsequent sections)

Reason: Cal Chiefs has decided to submit this code change proposal as a result of discussions which occurred during the Public Hearings held at the ICC Final Action Hearings on Code Change Proposals G70-06/07 submitted by the Masonry Alliance for Codes and Standards (MACS) and G73-06/07 submitted by the Ad Hoc Committee on Terrorism Resistant Buildings to address the issue of the physical integrity of elevator hoistway and exit stairway shaft enclosures in super high rise buildings (those buildings greater than 420 in height). Both code changes received significant debate but were subsequently disapproved. However, the Class A voting membership was able to successfully overturn the Committee's recommendation for disapproval of Code Change G70-06/07 but was unsuccessful in achieving the necessary two-thirds majority vote for approval of the code change. We believe that code change had merit so we reviewed it and revised it to better clarify it and make it more enforceable in our opinion based on this code change submittal.

It is clear in the NIST Final Report of the National Construction Safety Team on the collapse of the World Trade Center Towers which can be found on the NIST website at www.NIST.gov that there is a need to provide a means for determining minimum structural integrity criteria for the means of egress in very tall buildings which may include elevator hoistways for elevators that may be used for emergency access by emergency responders, or as a method of emergency evacuation, especially for people with disabilities. Recommendation 18 in Chapter 9 of the NIST Report stated the following:

"NIST recommends that egress systems (i.e. stairs, elevators, exits) should be designed … (2) to maintain their functional integrity and survivability under foreseeable building-specific or large-scale emergencies…"

Item B in this recommendation further states:

"The design, functional integrity, and survivability of the egress and other life safety systems, (e.g., stairwell and elevator shafts…) should be enhanced by considering accidental structural loads such as those induced by overpressures (e.g., gas explosions), impacts, or major

hurricanes and earthquakes, in addition to fire separation requirements… The stairwells and elevators shafts… should have adequate structural integrity to withstand accidental structural loads and anticipated risks."

In other words, the exit stairway shaft enclosures should be "hardened" beyond what they may be today based on the fire tests currently prescribed in ASTM E119.

We believe that the most direct and effective approach at this time based on the use of nationally recognized standards to determine the structural integrity of the exit stairway shaft enclosure walls is to specify that when the fire-resistance rating for the wall assembly is determined in accordance with ASTM E119, that it is based on the hose stream test portion of the test being conducted at the end of the fire-resistance test for the original test specimen. That is one of three options prescribed in ASTM E119 for when the hose stream test is to be applied. Another option for applying the hose stream test for wall assemblies having a fire-resistance rating of 1-hour or more is to test a second test specimen for one-half the duration of the fire-resistance rating determined by the original test specimen but for not more than 1-hour and then apply the hose stream test. So for a 2-hour fire-resistance rated wall which would be required for these shaft enclosures, the hose stream test under that option would be applied after a 1-hour fire-resistance test has been conducted on a duplicate test specimen of the original 2-hour fire-resistance rated wall assembly. It is obvious to us that if we specify the hose stream test to be conducted at the end of the fire-resistance test for the original test specimen, the wall must be substantially more robust and "hardened" in order to withstand the "impact, erosion, and cooling effects of a hose stream" as specified in Section 11.1 of ASTM E119. The purpose of the hose stream test is also explained in Appendix X5 Commentary to ASTM E119. Section X5.9 Integrity states: "In this hose stream test, the ability of the construction to resist disintegration under adverse conditions is examined."

As representatives of the fire service, we are very concerned that the elevator hoistway enclosures in these very tall buildings be sufficiently "hardened" to assure that they will withstand various impacts and stresses that may occur during an uncontrolled fire. This is especially important since we may be utilizing the elevators to assist in evacuation of the occupants of the building. In the NIST Report it was estimated that the evacuation of a fully occupied World Trade Center Tower would have taken approximately 4 hours. And, of course, we may need to deal with evacuation of disabled occupants utilizing these elevators as well. Also, the responding fire department may also utilize these elevators to gain access to the fire floor since the stairways may not be practical. It was also noted in the NIST Report that it was estimated that the fire department response using the stairways to gain access to the 58th floor of a hypothetical 60 story building for fire fighting operations and rescue purposes would require at least 90 minutes provided the fire department personnel were not carrying any equipment or breathing apparatus but could take as much as 120 minutes if the emergency responders were in fact carrying equipment and breathing apparatus.

It is also important to note that the elevators will also be used for accessible means of egress as required by Section 1007.2.1 of the International Building Code (IBC). Thus, the physically disabled occupants of the building may be relying on being assisted during evacuation or rescued via the elevators so it is critically important that the elevator shafts have sufficient structural integrity during adverse fire exposure conditions to increase the probabilities that they can be utilized throughout the duration of the fire until it has been suppressed and ultimately extinguished.

In conclusion, Cal Chiefs strongly supports the need to "harden" the elevator hoistway enclosures in these super high rise buildings in order to provide adequate fire and life safety for not only the occupants of the building but also for the responding fire department and other emergency personnel who may be using those elevators to gain access to the fire floor, as well as to assist in evacuation of the occupants. We believe that this code change proposal will provide that additional degree of integrity for "hardening" these elevator hoistway enclosures.

Cost Impact: This code change will increase the cost of construction.

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

G56–07/08

403.12 (New)

Proponent: Gary Lewis, Chair, representing the ICC Ad Hoc Committee on Terrorism Resistant Buildings

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:

403.12 Structural integrity of exit stairway enclosures. For all buildings that are more than 420 feet (128 m) in height, exit stairway enclosure wall surfaces, from the top of each floor to the underside of the floor or roof above and connections to supporting members, shall be capable of resisting a factored load using strength design, expressed as a uniform pressure, of not less than 2 pounds per square inch (psi) applied perpendicular to the exterior of the enclosure. This load need not be assumed to act concurrently with the loads specified in Chapter 16 and shall be assumed to apply to one floor at a time.

Reason: The purpose of this change is to establish a standard for the structural robustness of exit stairway enclosures. It implements Recommendation 18 of the National Institute of Standards and Technology (NIST) report on the World Trade Center (WTC) tragedy.

The Code has traditionally looked upon a stair enclosure as a place of relative safety. There are any number of carefully crafted code provisions designed to ensure that goal, but they are based upon only one hazard – fire. The enclosures of these stairs are made fire resistive through the traditional rating and listing system, but the Code does not establish a criterion for structural robustness. The proponents do not believe that the existing "hose stream" test addresses this issue. The hose stream does not and cannot represent the real world impact of blast loads that a stair shaft might encounter. Neither does the ongoing industry work designed to develop an impact resistance test standard. That work relates to durability rather than safety. The proponents believe that a structural standard is needed.

The stair enclosures of the WTC were destroyed by an aircraft impact. Far lesser events, such as a gas explosion or a vehicle impact (on lower floors) can destroy a stair enclosure, especially when one considers that the Code contains no structural criteria at all. The 2 psi load requirement is consistent with the overpressure associated with a gas explosion. NIST has performed an analysis to verify this statement. Any structural robustness that existing stair shaft enclosures have is a by-product of the fire rating process; a process that was never intended to provide structural integrity.

A new criterion is needed for exit stair enclosures – a structural one.

The NIST WTC Report suggests a standard based upon resistance to over-pressure. This approach has two real advantages. It reflects one possible damage scenario and can represent others as well. Secondly, it is a performance standard. All materials can be analyzed and engineered to comply.

Compliance with this standard is determined by engineering analysis, not a test. This is a simple and direct approach that can be implemented immediately.

Bibliography:

National Institute of Standards and Technology. Final Report of the National Construction Safety Team on the Collapses of the World Trade Center Towers. United States Government Printing Office: Washington, D.C. September 2005.

Cost Impact: This proposal will increase the cost of construction but the continued absence of structural criteria for exit stairway enclosures is not possible. This is a cost that must be met for safety's sake.

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

G57–07/08

403.12 (New)

Proponent: Greg Lake, Sacramento Metropolitan Fire District, representing the California Fire Chiefs Association (Cal Chiefs)

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 text as follows:

403.12 Exit stairway shaft enclosure integrity. For buildings greater than 420 feet in height above grade plane, the fire-resistance rating of the exit stairway enclosure walls shall be determined by meeting the conditions of acceptance specified in ASTM E119 with the hose stream test conducted at the end of the fire test for the original test specimen to determine the integrity of the wall.

(Renumber subsequent sections)

Reason: Cal Chiefs has decided to submit this code change proposal as a result of discussions which occurred during the Public Hearings held at the ICC Final Action Hearings on Code Change Proposals G70-06/07 submitted by the Masonry Alliance for Codes and Standards (MACS) and G73-06/07 submitted by the Ad Hoc Committee on Terrorism Resistant Buildings to address the issue of the physical integrity of exit stairway shaft enclosures in super high rise buildings (those buildings greater than 420 in height). Both code changes received significant debate but were subsequently disapproved. However, the Class A voting membership was able to successfully overturn the Committee's recommendation for disapproval of Code Change G70-06/07 but was unsuccessful in achieving the necessary two-thirds majority vote for approval of the code change. We believe that code change had merit so we reviewed it and revised it to better clarify it and make it more enforceable in our opinion based on this code change submittal.

It is clear in the NIST Final Report of the National Construction Safety Team on the collapse of the World Trade Center Towers which can be found on the NIST website at www.NIST.gov that there is a need to provide a means for determining minimum structural integrity criteria for the means of egress in very tall buildings which includes the exit stairways, as well as elevator hoistways for elevators that may be used for emergency access by emergency responders, or as a method of emergency evacuation, especially for people with disabilities. Recommendation 18 in Chapter 9 of the NIST Report stated the following:

> "NIST recommends that egress systems (i.e. stairs, elevators, exits) should be designed … (2) to maintain their functional integrity and survivability under foreseeable building-specific or large-scale emergencies…"
>
> Item B in this recommendation further states:
>
> "The design, functional integrity, and survivability of the egress and other life safety systems, (e.g., stairwell and elevator shafts…) should be enhanced by considering accidental structural loads such as those induced by overpressures (e.g., gas explosions), impacts, or
>
> major hurricanes and earthquakes, in addition to fire separation requirements… The stairwells and elevators shafts… should have adequate structural integrity to withstand accidental structural loads and anticipated risks."

In other words, the exit stairway shaft enclosures should be "hardened" beyond what they may be today based on the fire tests currently prescribed in ASTM E119.

We believe that the most direct and effective approach at this time based on the use of nationally recognized standards to determine the structural integrity of the exit stairway shaft enclosure walls is to specify that when the fire-resistance rating for the wall assembly is determined in accordance with ASTM E119, that it is based on the hose stream test portion of the test being conducted at the end of the fire-resistance test for the original test specimen. That is one of three options prescribed in ASTM E119 for when the hose stream test is to be applied. Another option for applying the hose stream test for wall assemblies having a fire-resistance rating of 1-hour or more is to test a second test specimen for one-half the duration of the fire-resistance rating determined by the original test specimen but for not more than 1-hour and then apply the hose stream test. So

for a 2-hour fire-resistance rated wall which would be required for these shaft enclosures, the hose stream test under that option would be applied after a 1-hour fire-resistance test has been conducted on a duplicate test specimen of the original 2-hour fire-resistance rated wall assembly. It is obvious to us that if we specify the hose stream test to be conducted at the end of the fire-resistance test for the original test specimen, the wall must be substantially more robust and "hardened" in order to withstand the "impact, erosion, and cooling effects of a hose stream" as specified in Section 11.1 of ASTM E119. The purpose of the hose stream test is also explained in Appendix X5 Commentary to ASTM E119. Section X5.9 Integrity states: "In this hose stream test, the ability of the construction to resist disintegration under adverse conditions is examined."

As representatives of the fire service, we are very concerned that the stairway exit enclosures in these very tall buildings be sufficiently "hardened" to assure that they will withstand various impacts and stresses that may occur during an uncontrolled fire. This is especially important since we may be utilizing the stairs to assist in evacuation of the occupants of the building. In the NIST Report it was estimated that the evacuation of a fully occupied World Trade Center Tower would have taken approximately 4 hours. And, of course, we may need to deal with evacuation of disabled occupants utilizing these exit stairways as well. Also, the responding fire department may also utilize these exit stairways to gain access to the fire floor. It was also noted in the NIST Report that it was estimated that the fire department response using the stairways to gain access to the 58th floor of a hypothetical 60 story building for fire fighting operations and rescue purposes would require at least 90 minutes provided the fire department personnel were not carrying any equipment or breathing apparatus but could take as much as 120 minutes if the emergency responders were in fact carrying equipment and breathing apparatus.

In conclusion, Cal Chiefs strongly supports the need to "harden" the exit stairway enclosures in these super high rise buildings in order to provide adequate fire and life safety for not only the occupants of the building but also for the responding fire department and other emergency personnel who may be using those stairs to gain access to the fire floor, as well as to assist in evacuation of the occupants. We believe that this code change proposal will provide that additional degree of integrity for "hardening" these exit stair enclosures.

Cost Impact: This code change will increase the cost of construction.

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

G58–07/08

403.12.1, 707.14.1, 3002.3 (New), 3006.4, Chapter 35 (New); IFC 509.1 (IBC [F] 911.1)

Proponent: Gary Lewis, Chair, representing the ICC Ad Hoc Committee on Terrorism Resistant Buildings

THESE PROPOSALS ARE ON THE AGENDA OF THE IBC GENERAL AND IFC CODE DEVELOPMENT COMMITTEES AS 2 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES

PART I – IBC GENERAL

1. Revise as follows:

403.12.1 Stairway communications and monitoring system. The following stairway communication and monitoring systems shall be installed at every fifth floor of each required stairway and connected to an approved constantly attended station:

1. ~~A~~ Telephone or other two-way communications system ~~connected to an approved constantly attended station shall be provided at not less than every fifth floor in each required stairway where the doors to the stairway are locked.~~
2. Video surveillance system installed in accordance with NFPA 731.

2. Revise as follows:

707.14.1 (Supp) Elevator lobby. An enclosed elevator lobby shall be provided at each floor where an elevator shaft enclosure connects more than three stories. The lobby shall separate the elevator shaft enclosure doors from each floor by fire partitions equal to the fire-resistance rating of the corridor and the required opening protection. Elevator lobbies shall have at least one means of egress complying with Chapter 10 and other provisions within this code. In buildings with an occupied floor more than 75 feet above the lowest level of fire department vehicle access, the elevator lobby shall be provided with a video surveillance system installed in accordance with NFPA 731.

Exceptions:

1. Enclosed elevator lobbies are not required at the street floor, provided the entire street floor is equipped with an automatic sprinkler system in accordance with Section 903.3.1.1.
2. Elevators not required to be located in a shaft in accordance with Section 707.2 are not required to have enclosed elevator lobbies.
3. Where additional doors are provided at the hoistway opening in accordance with Section 3002.6. Such doors shall be tested in accordance with UL 1784 without an artificial bottom seal.

4. In other than Group I-2 and I-3, and buildings having occupied floors located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access, enclosed elevator lobbies are not required where the building is protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
5. Smoke partitions shall be permitted in lieu of fire partitions to separate the elevator lobby at each floor where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
6. Enclosed elevator lobbies are not required where the elevator hoistway is pressurized in accordance with Section 707.14.2.

3. Add new text as follows:

3002.3 Elevator hoistway monitoring. In buildings with an occupied floor more than 75 feet above the lowest level of fire department vehicle access, the elevator hoistway shall be provided with a video surveillance system installed in accordance with NFPA 731 at the top of each elevator hoistway mounted to look down the hoistway in the direction of the top of the elevator cab. A reflective material shall be mounted to the top of the elevator cab such that the reflection will be observable by the video surveillance system at the lowest stop of the elevator cab. The reflector shall be no less than two inches (5.1cm) by 12 inches (30.5 cm).

(Renumber subsequent sections)

4. Revise as follows:

3006.4 (Supp) Machine rooms and machinery spaces. Elevator machine rooms and machinery spaces shall be enclosed with fire barriers constructed in accordance with Section 706 or horizontal assemblies constructed in accordance with Section 711, or both. The fire-resistance rating shall not be 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. In buildings with an occupied floor more than 75 feet above the lowest level of fire department vehicle access, the machine room shall be provided with smoke detectors and a video surveillance system installed in accordance with NFPA 731.

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 706 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 4 stories or less, above grade plane when 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.

5. Add standard to Chapter 35:

NFPA

731 The Standard for the Installation of Electronic Premises Security Systems

PART II – IFC

Revise as follows:

509.1 (IBC [F] 911.1) (Supp) Features. Where required by other sections of this code and in all buildings classified as high-rise buildings by the *International Building Code*, a ~~fire~~ emergency command center for ~~fire department~~ emergency operations shall be provided. The location and accessibility of the ~~fire~~ emergency command center shall be approved by the fire department. The ~~fire~~ emergency command center shall be separated from the remainder of the building by not less than a 1-hour fire barrier constructed in accordance with Section 706 of the *International Building Code* or horizontal assembly constructed in accordance with Section 711 of the *International Building Code*, or both. The room shall be a minimum of 96 square feet (9 m2) with a minimum dimension of 8 feet (2438 mm). A layout of the ~~fire~~ emergency command center and all features required by this section to be contained therein shall be submitted for approval prior to installation. The ~~fire~~ emergency command center shall comply with NFPA 72 and shall contain the following features:

1. The emergency voice/alarm communication system unit.
2. The fire department communications system.
3. Fire-detection and alarm system annunciator system.
4. Annunciator visually indicating the location of the elevators and whether they are operational.
5. Status indicators and controls for air-handling systems.
6. The fire-fighter's control panel required by Section 909.16 for smoke control systems installed in the building.
7. Controls for unlocking stairway doors simultaneously.
8. Sprinkler valve and water-flow detector display panels.
9. Emergency and standby power status indicators.
10. A telephone for fire department use with controlled access to the public telephone system.
11. Fire pump status indicators.
12. Building emergency resource manual approved by the fire department that includes emergency operation instructions and ~~Schematic~~ building plans indicating the typical floor plan and detailing the building core, means of egress, as well as the layout and operating instructions for the emergency aspects of fire protection systems, HVAC systems, elevator controls, communication systems, utilities, fire-fighting equipment and fire department access.
13. Work table.
14. Generator supervision devices, manual start and transfer features.
15. Public address system, where specifically required by other sections of this code.
16. Elevator fire recall switch in accordance with ASME A17.1.
17. Elevator emergency or standby power selector switch(es), where emergency or standby power is provided.
18. Video monitoring for video surveillance system required by the *International Building Code* and any others used to monitor conditions or activities in the building.
19. Status indication of smoke detectors and video surveillance system for elevator machine rooms.
20. Controls and valve status indicators for remote control valves on sprinkler/standpipe vertical risers.

In buildings that are more than 420 feet (128 m) in height, systems and equipment for features 1, 2, 3, 4, 7, 15, and 20 shall be provided with redundant circuitry during normal and emergency operating modes and shall have the ability to transmit and communicate off-site, including mobile access, if required by the Fire Department.

Reason: The purpose of this change is to increase the ability of firefighters, and other emergency responders, to develop a clear picture of conditions throughout the building which will enable them to better manage evacuation, fire suppression and other emergency response activities. The purpose is also to enhance the safety of emergency responders by enabling them to maintain better situational awareness.

The National Institute of Standards and Technology's (NIST) report on the World Trade Center (WTC) tragedy amply documented the tactical and informational difficulties experienced by emergency responders and occupants during the WTC event. Similar difficulties occur in much smaller events and they place lives at risk.

The Code already requires many systems which enhance emergency responder and occupant awareness. Their use can be improved and they can be further supplemented. Recommendations 13, 14, and 15 of the WTC Report outline a number of valuable measures which are reasonable and practical. To the extent appropriate, this proposal seeks to incorporate those provisions into the Code.

This proposal seeks to improve responder awareness of conditions in the building to assist in management of an incident, improve the existing fire command center to enhance its value, require the off-site transmission of the key data available in the center, require redundancy of key emergency circuits and improve the robustness and the location of the center.

Awareness is improved by requiring control center monitoring of:

1. Video surveillance in stairway shafts, elevator lobbies, elevator hoistways, and elevator machine rooms as well as any other video in the building,
2. Remote controls and status indicators for risers and remote control valves.
3. Status indicators for all smoke detectors.

The value of the fire control center already required by the Code is enhanced by the additional monitoring made possible, and a strengthened "Emergency Resource Manual" which will now include operating instructions for emergency systems as well as information on the emergency aspects of HVAC systems, elevator controls, communication systems and utilities. The center is retitled the emergency command center to reflect its role in managing emergencies other than fire emergencies.

New language at the end of amended Section 911.1 requires the ability to transmit the information available in the center to off-site fire command facilities including mobile facilities.

There will those opponents that will claim that that the amount of information generated by the video monitoring in a large building will cause "information overload". They will question the ability of the staff in the fire command center to observe all of the required video feeds at once. In response to this, please be aware that there is commercial off-the-shelf "intelligent software" that is available such that the staff of the fire command center need not observe all of these feeds; the software is "event driven" and will select information that is pertinent and display just this information. This software is currently available off-the-shelf from companies such as Johnson Control and Honeywell. The Port Authority of New York and New Jersey is currently installing a system to monitor the perimeter of the Newark airport by the use of ***ONE*** video screen. Clearly the perimeter of this airport is substantially larger than the portions of the building that are required to be monitored as a result of this code change. By requiring these video feeds, the situational awareness of the staff in the fire command center is substantially increased. While researching the availability of this software, we were informed by Mr. Alan Reiss the building manager of the World Trade Center, that he was unaware of the magnitude of the event on September 11, 2001. In fact, he commented that the people at home watching the television had a better situational awareness than he did because of the lack of information available at the fire command center. This has to be changed and this proposal will change it.

Bibliography:
National Institute of Standards and Technology. Final Report of the National Construction Safety Team on the Collapses of the World Trade Center Towers. United States Government Printing Office: Washington, D.C. September 2005.

Cost Impact: These proposed amendments will increase the cost of construction, but, the increase will be modest when viewed as a percentage of total construction costs.

Analysis: A review of the standard proposed for inclusion in the code, NFPA 731, for compliance with ICC criteria for referenced standards given in Section 3.6. of Council Policy #CP 28 will be posted on the ICC website on or before January 15, 2008.

PART I – IBC GENERAL

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

PART I – IFC

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

G59–07/08
403.14 (New), [F] 909.2 (IFC 909.2), 1020.1.7

Proponent: Tony Crimi, A.C. Consulting Solutions, Inc., representing the International Firestop Council

1. Add new text as follows:

403.14 Stair pressurization. Every required interior exit stairway serving floors more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access shall comply with the requirements of Sections 909.20 and 1020.1.7, and shall be pressurized to a minimum of 0.15 inch of water (37 Pa) and a maximum of 0.35 inch of water (87 Pa) relative to the building measured with all stairway doors closed under maximum anticipated stack pressures.

2. Revise as follows:

[F] 909.2 (IFC 909.2) General design requirements. Buildings, structures or parts thereof required by this code to have a smoke control system or systems, or a stair pressurization system shall have such systems designed in accordance with the applicable requirements of Section 909 and the generally accepted and well-established principles of engineering relevant to the design. The construction documents shall include sufficient information and detail to adequately describe the elements of the design necessary for the proper implementation of the smoke control systems. These documents shall be accompanied by sufficient information and analysis to demonstrate compliance with these provisions.

1020.1.7 Smokeproof enclosures. In buildings required to comply with Section ~~403 or~~ 405, each of the exits of a building that serves stories where the floor surface is ~~located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access or~~ more than 30 feet (9144 mm) below the level of exit discharge serving such floor levels shall be constructed as a smokeproof enclosure or pressurized stairway in accordance with Section 909.20. In buildings required to comply with Section 403, each of the exits of a building that serves stories where the floor surface is located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access shall be a smokeproof enclosure and pressurized stairway in accordance with Section 909.20.

Reason: This proposal would require Stair pressurization for all high rise buildings with required interior stairwells serving floors over 75 ft. Smoke control systems have been required in nearly two thirds of the United States for over a decade.

High-rise buildings constructed to the requirements of International Building Code, but without any specific measures to control smoke migration, are all the more vulnerable to property damage and occupants' loss of life. In reality, all the available research indicates that the need for smoke control is more pressing in tall buildings that in any other type of construction. As a minimum, the IBC needs to provide more effective means to prevent smoke from entering critical exit stairwells in high-rise buildings. Pressurization results in airflows of high velocity in the gaps around closed doors and construction cracks, thereby preventing smoke from flowing back into the pressurized space through these openings. Pressurized stairwells are provided with the goal of maintaining a tenable environment within the escape routes in the event of a building fire.

During the Hearings in Orlando last September, the Committee indicated the option to use stairwell pressurization exists. However, the IBC does not require stairwell pressurization in high-rise buildings, and only requires smoke control in underground buildings, atriums, and covered mall buildings. Section 403.13 of the 2006 IBC requires Smokeproof exit enclosures for high-rise buildings in every required stairway serving floors more than 75 feet (22.86 m) above the ground. Section 909.20.5 merely permits sprinklered Buildings to use stairwell pressurization as an alternate to the smokeproof enclosures. Stair pressurization to provide uncontaminated air within required interior exit stairwells in high-rise buildings should be required in all cases, regardless of whether the building is sprinklered or not. In order to ensure the continuity of fresh air supply, air ducts to the interior stairwells need to be protected from the effect of fire, or constructed as fire resistant systems.

Smoke can behave very differently in tall buildings than in low buildings. The predominant factors that cause smoke movement in tall buildings are stack effects, the affect of external wind forces, and forced air movement within the building. Smoke removal and venting practices are complicated by stack effects, which will tend to favour natural air movement vertically through the building as a results of differences in temperature and densities between the inside and outside air. [1]

Options such as the use natural ventilation are only available where openings in exterior stairwells can be accommodated. Even then, a number of problems have been identified with this approach. Firstly, the required volume of fresh air is high. Secondly, natural supply and exhaust through vents may be subject to adverse exterior wind conditions, and even when functioning satisfactorily, would generally require vents located on different exterior walls. Thirdly, the performance of natural vents is influenced by building stack effects, which may be particularly significant on the upper or lowermost stories for tall buildings. This effect can range from either strong inflow or strong outflow from all natural vents on a given storey.[2]

Several incidents in North America during the past 40 years have demonstrated that serious fires can occur in modern high-rise buildings, that these fires can generate tremendous quantities of smoke, and that smoke can spread rapidly throughout these buildings. Most notable were the 1970 One New York Plaza fire, the1973 Hyatt Regency O'Hare Hotel fire, the 1980 MGM Grand Hotel in Las Vegas, a 1981 fire in North York Ontario at the Inn on the Park Hotel, the 1983 First Canadian Place in Toronto, Ontario, One Meridian Plaza, Philadelphia, Pennsylvania and the First Interstate Bank in Los Angeles, California in the 1990's.

More recently, the NIST Reports on the World Trade Center disaster discuss various aspects of the post impact condition of the exit stairwell. The NYC Building Code did not require stairwell pressurization in sprinklered buildings. However, the *NIST NCSTAR 1-7, WTC Investigation Report* contains the following quotations and comments:

"A survivor from a floor in the 20s in WTC 1: "The stairwell was lit the entire way down. There was a grayish color smoke which smelled like fuel. The more we reached the lower floors the stronger the smell became. On the 6th floor, the sprinklers were on, which slowed us down because we wanted to be cautious and not slip or fall." Interview 1000044 (NIST 2004)"[3]

"The explosion significantly damaged floors, walls, and doorways in subgrade levels and forced large amounts of smoke well away from the immediate area. In one report, visibility was reduced to 0.3 m (1 ft) within about 1 min at the 44th floor of WTC 1, largely through the spread of smoke in elevator and stairwell shafts (Isner and Klem 1993b). Before beginning evacuation, many occupants experienced smoke on occupied floors and encountered even heavier smoke as they descended the buildings in the stairwells." [3]

The IBC needs to provide more effective means to prevent smoke from entering critical exit stairwells in high-rise buildings. Pressurization prevents smoke from flowing back into the pressurized exit stairwells and smokeproof enclosures. The goal of this proposal is maintaining a tenable environment within the escape routes in the event of a building fire.

Bibliography:

1. Klote, J.H. and Milke, J.A. Fire Protection Handbook, NFPA 19th Edition, Volume II, Smoke Movement in Buildings, Chapter 6, Section 12-113 – 12-126
2. Building Research Establishment, UK, Smoke Ventillation of Common Access Areas of Flats & Maisonettes (BD2410), Final Factual Report, Appendix A (Review), BRE Ltd, 2005
3. NIST NCSTAR 1-7 (Draft), Federal Building and Fire Safety Investigation of the World Trade Center Disaster
Occupant Behavior, Egress, and Emergency Communications (Draft)

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

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

G60–07/08

403.14 (New), 3007.3 (New)

Proponent: Ed Donoghue, Edward Donoghue Associates Inc. (EADAI)

Add new text as follows:

403.14 Pressurized exit enclosures. Exit enclosures connected to a lobby serving a fire service access elevator shall be pressurized in accordance with Section 909.20.5.

(Renumber subsequent sections)

3007.3 Pressurization system. Hoistways containing fire service access elevators and fire service access elevator lobbies, shall be designed in accordance with Sections 707.14.2.1 through 707.14.2.5. Where the fire service access elevator lobby at the street floor is not enclosed, the entire area open to the elevator entrances shall be pressurized to a pressure substantially equivalent to the pressure within the hoistway at the street level. The pressurization system serving the fire service access elevator and the associated exit enclosure shall be designed to function with any two doors open to unpressurized areas.

(Renumber subsequent sections)

Reason: The Robust Fire Service Elevators (RFSE) needs to be protected from smoke entering either the hoistway directly or through the lobby or stair system that adjoins the RFSE. The proposal for a Fire Service Elevator approved during the last cycle includes elevator lobbies protected as Smoke Barriers, however the Hazard Analysis determined this was insufficient to provide the resistance to smoke intrusion necessary for these RFSE's to be of value for an extended period during a building fire.

This proposal requires that the elevator hoistway, enclosed elevator lobbies and stairways directly accessed from the lobby that are contiguous with the RFSE be pressurized at levels identical to those used for stair pressurization in high rises currently. Recognizing that in many cases one or more elevator doors and doors to either the corridor or stair system could be open (egress or blocked by fire hoses), the pressurization system must be sized to provide an adequate differential pressure even with multiple doors open.

In addition this pressurization system will be activated either by General Alarm or by the detectors involved in initiating Phase 1 recall to maximize the protection opportunity. The pressurization system must be able to function for an extended period of time to provide for extended use of the RFSE by the Fire Service even in the event of primary power loss to the elevators and pressurization system. Finally the same requirements for supply air as required for the elevator shaft pressurization system (707.14.2) are required for this system.

Background. As a result of the September 11, 2001 attacks on the World Trade Center, code provisions for emergency egress from tall buildings are being re-examined. There is renewed interest in the use of elevators for both occupant egress and fire fighters access. Therefore a Workshop on the Use of Elevators in Fires and Other Emergencies was held March 2-4, 2004, in Atlanta, Georgia. The workshop was cosponsored by American Society of Mechanical Engineers (ASME International), National Institute of Standards and Technology (NIST), International Code Council (ICC), National Fire Protection Association (NFPA), U.S. Access Board, and the International Association of Fire Fighters (IAFF).

The workshop focused on two general topics:

(1) Use of Elevators by Fire fighters and

(2) Use of Elevators by Occupants during Emergencies

To follow up on the ideas generated at the workshop, 2 task groups were formed; one for each topic. Their goals are:

- Review the suggestions from the Workshop on the Use of Elevators in Fires and other Emergencies.
- Develop a prioritized list of issues.
- Conduct a hazard analysis of the prioritized list of issues to see if there are any residual hazards.
- Draft code revisions for those issues that survive the process and the task group members still want addressed.

The membership of these task groups is broad and includes representatives from the elevator industry and manufacturers of devices such as fire alarms, the fire service, model codes and standards development organizations, and the accessibility community as well as fire protection engineers, architects and specialists in human factors and behavior. Since February 2005 the groups have each been conducting a hazard analysis on their assigned topic. The results of the hazard analysis focused upon the fire fighter needs is nearing completion.

The task group studied 16 different cases. In these cases a particular hazard followed by a cause/trigger was reviewed. The result of the hazard interacting with cause/trigger events may create a particular incident/effect. To address possible incident/effects corrective actions are proposed. Such corrective actions are then reviewed to see if they create any residual hazards. The hazard analysis then carries out each of the residual hazards with additional corrective actions until the hazard is mitigated. It is strictly a hazard analysis (I.e. not probabilistic) and certain assumptions were made such as a single fire start in a high rise building. The following link provides a summary of the cases reviewed for the fire service elevator hazard analysis (PROVIDE LINK).

The code changes generated by this analysis are related both to the summary of corrective actions resulting from the hazard analysis and the existing language related to fire service access elevators placed into the 2007 Supplement.

These proposals will work with the 2007 Supplement requirements for fire service access elevators to address these concerns. It should be noted that the hazard analysis assumed a lobby to be directly connected with the fire service access elevator thus making the result of the analysis consistent with the philosophical approach found in the 2007 Supplement.

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

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

G61–07/08

403.12 (New)

Proponent: Gary Lewis, Chair, representing the ICC Ad Hoc Committee on Terrorism Resistant Buildings

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:

403.12 Remoteness of exit stairway enclosures. The nearest wall of separate required exit stairway enclosures shall be placed a distance apart equal to not less than one-third of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between the nearest portion of the stairway enclosure. In buildings with three or more exit stairway enclosures, at least two of the exit stairway enclosures shall be placed a distance apart equal to not less than one-third of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between the nearest portion of the exit stairway enclosure. Interlocking or scissor stairs shall be counted as one exit stairway.

Reason: The purpose of this change is to add a new Section 403.19 that will require stair shafts to meet remoteness criteria, in addition to the separation distance requirements for exit access doorways of Section 1015.2.1.

The Code has long contained requirements designed to ensure that all the exit access doors on a floor are not grouped closely together. Grouping exit access doors too closely defeats the whole point of multiple exits.

The National Institute of Standards and Technology's (NIST) report on the World Trade Center (WTC) tragedy recommends a new remoteness criterion for stair shafts (Recommendation 18). The report pointed out that, at some locations, stairs that met the exit access distance requirements were, nonetheless, very closely grouped. Their shafts were very close together and all three were destroyed by the airplane impact, thereby

dooming all above. It is not the proponents' intent to make stair shafts immune to airplane attacks but the re-examination of our basic criteria that was prompted by the attack and the WTC Report suggests that far less dramatic events could render more than one stair shaft unusable. The cause need not be an act of terror either. There are other explosive hazards in high rise buildings. It is only prudent to separate the stair shafts themselves as well as the exit access doors.

It is possible that, in some high rise office buildings, this provision will result in one or more stairs being across the hall from the core rather than in the core. No additional floor area will be required for the sum total of core and stairs. If a stair is outside the traditional core, then the core itself will be smaller. Some might suggest that such a stair location might inhibit design flexibility in tenant spaces. This is simply not true. The architect might have to work a little harder to develop layouts but, with a little skill, any constraint can be incorporated into an acceptable design.

Bibliography:

National Institute of Standards and Technology. Final Report of the National Construction Safety Team on the Collapses of the World Trade Center Towers. United States Government Printing Office: Washington, D.C. September 2005.

Cost Impact: The proposal will not increase construction costs. It merely deals with the location of building elements that are already required by the Code.

Analysis: The last sentence of this proposal addresses interlocking/scissor stairways. There are other code changes dealing specifically with scissors stairways that will be heard by the IBC Means of Egress Committee.

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

G62–07/08
403.14 (New)

Proponent: Ken Kraus, Los Angeles Fire Department, CA

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

Add new text as follows:

403.14 Roof access. Every required stairway serving floors more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access where the stairway extends to the roof shall extend to the roof surface through a penthouse complying with Section 1509.2, unless the roof has a slope steeper than four units vertical in 12 units horizontal (33- percent slope).

(Renumber subsequent sections)

Reason: This change will require all stairs in High-Rise buildings to extend through to the roof surface terminating with a penthouse. This requirement is in addition to the current requirement that one stair extend to the roof surface.

Many high-rise building occupants use the stairs as part of their daily routine. If this activity occurs within an exit enclosure that has access to the roof (according to the signage) these occupants may assume that all the stairs extend to the roof surface. This flawed perception could be exactly the disadvantage that results in injury during an actual incident.

Countless times during periodic full floor evacuation drills, participants inquire what the procedures would be if it were too far or too dangerous to go down the stairs to the exit terminus. The vast majority of High-Rise building tenants believe that the roof may offer the safest and closest location to relocate.

This change is necessary to meet the public's perception and expectation that, particularly in High-Rise buildings, when motivated to leave their floor, the roof may be the most viable alternative.

Cost Impact: This code change proposal will increase the cost of construction.

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

G63–07/08
403.14 (New)

Proponent: Greg Lake, Sacramento Metropolitan Fire District, representing the California Fire Chiefs Association (Cal Chiefs)

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

Add new text as follows:

403.14 Smoke management. Each story shall be provided with an approved means to restrict smoke originating from a fire in the story from spreading to any other story in the building. The approved means shall consist of a mechanical air-handling system designed so that the return and exhaust air is moved directly to the outside without recirculation to other stories of the building under fire conditions. The system shall exhaust not less than six air changes per hour from the story. Supply air by mechanical means to the story is not required.

(Renumber subsequent sections)

Reason: We are submitting this code change proposal as a follow up to our code change G75-06/07 which was recommended for disapproval during the last code change cycle. We agreed with the Committee's reason that the reference to Section 909 was inappropriate for this proposed smoke control measure for high-rise buildings since it is not intended for the initial life safety of the occupants during a fire. Instead it is intended to provide for the protection of contents and the assistance to fire fighters for overhaul activities with an indirect effect of enhancing the overall level of life safety to the occupants and the fire fighters by limiting the spread of smoke beyond the floor on which the fire originates. However, the code official responsible for reviewing and approving the proposed method of smoke control specified in this proposal could certainly rely upon many of the design criteria, principles, and specifications contained in Section 909 to assure the proper operation, design, and reliability of the system.

We at Cal Chiefs believe that smoke management is an essential component of an overall fire protection strategy for protecting against unwanted fires in high-rise buildings. In California we have had the requirement for smoke management/control in high-rises since we first incorporated provisions for high-rise buildings in the 1970s. They have proven to be a very important and useful tool in our fire fighting operations since they have the ability to limit the smoke from an unwanted fire to the story of origin, minimizing its spread to adjacent stories and exit paths. It provides a tool for property protection, as well as for life safety, by preventing smoke exposure to occupants on floors remote from the fire and by containing the smoke so that it does not cause damage which can be very significant, especially to sensitive electronic equipment that is found in many buildings today.

The approach we have taken by proposing this requirement for smoke management is to provide the performance criteria that simply restricts the smoke from a fire from spreading to any other story in the building using an approved means which is capable of exhausting the smoke to the exterior without having it recirculated to other stories. This was the basic concept behind smoke control requirements in our previous legacy model building code, the 1997 ICBO Uniform Building Code (UBC). We believe that if we can contain the smoke to the fire floor of origin, we have a better chance of containing the fire and its impacts, as well as in evacuating the occupants to safe areas of refuge within the building or completely out of the building without having to deal with a panic situation. Our experience has shown that smoke can cause extensive property damage and often requires buildings to be shut down for long periods of time while they are rehabilitated and cleaned to eliminate the smoke damage and the smoke odor.

These systems also help us to mop up the fire scene and release our personnel earlier from the fire ground so that they are available for other emergency calls in our communities. It is often a challenge to deal with smoke in high-rise buildings since we cannot use the traditional methods of ventilating through the roof for obvious reasons. A simple basic smoke management system can provide the fire department with the necessary tools to contain smoke to the floor of origin and eventually exhaust it from the building with minimal man-power required to accomplish the task. This is especially important in today's economic climate in our state where there is not a lot of money available to invest in the fire department and their personnel, so we have to get by with minimal manning to provide the necessary services expected by our citizens. Certainly, a smoke management system is one way we can better accomplish our mission in a way that also provides a higher level of fire and life safety protection to the building and its occupants.

We have taken the proposed language from Item 5. Category e of Section 3410.6.10.1 Categories under Section 3410.6.10 Smoke Control of Chapter 34 Existing Structures of the International Building Code (IBC). That is one of the categories used in the scoring system for assessing the equivalent level of fire and life safety provided for an existing building in accordance with Section 3410 Compliance Alternatives when an existing building has a change of occupancy, addition or alteration. We believe it provides adequate guidance for the designer, as well as the code enforcer, for the design, approval, and inspection of an approved method of smoke management to satisfy this proposed new code section for high rise buildings. Therefore, we would respectfully request that the Committee approve this code change which we believe responds to the Committee's previously expressed concerns as well as to the additional testimony we received on our public comment during the ICC Final Action Hearings held in Rochester, N.Y.

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

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

G64–07/08
403.15 (New)

Proponent: Ken Kraus, Los Angeles Fire Department, CA and Daniel E. Nichols, PE, New York Division of Code Enforcement and Administration, Albany, NY

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

Add new text as follows:

403.15 Smoke exhaust. Buildings and structures shall be equipped with natural or mechanical ventilation for removal of products of combustion in accordance with one of the following:

1. Easily identifiable, manually operable windows or panels shall be distributed around the perimeter of each floor at not more than 50 foot intervals. The area of operable windows or panels shall not be less than 40 square feet per 50 linear feet of perimeter.

   Exceptions:

   1. In Group R-1 occupancies, each guest room or suite having an exterior wall shall be permitted to be provided with 2 square feet of venting area in lieu of the area specified in item 1.
   2. Windows shall be permitted to be fixed tempered glass panes provided that no coating or film is applied that will modify the natural breaking characteristics of the glass

2. Mechanical air-handling equipment providing one exhaust air change every 10 minutes for the area involved. Return and exhaust air shall be moved directly to the outside without recirculation to other portions of the building.
3. Any other approved design that will produce equivalent results.

(Renumber subsequent sections)

Reason: Every code development cycle since the 2000 IBC was created, a code change has been submitted regarding requirements to vacate smoke from hi-rise buildings. Unfortunately, many of these proposals were attempting to utilize existing technical sections of the IBC regarding a smoke control system when all they were intending was a way for the fire service to remove smoke from a hi-rise. Smoke control systems would do a great job of removing smoke for the fire department but the full applicability of IBC Section 909 exceeds the intended purpose.

This proposal is to provide a new section to the hi-rise section with technical requirements for smoke exhaust. The proposal permits three ways to comply; natural, mechanical, or alternative method. The result of this system is one of three methods:

1. The fire department opens windows on the floor and provides pressurization by fans.
2. The buildings HVAC system is equipped with dampers per floor, an arrangement to stop recirculation by providing 100% fresh air intake and outside exhaust, and a control panel at the fire command center.
3. An alternative design approved by the code official.

The issue that this code change proposal addresses is that of fire department operations. One of the fire department's duties during a fire event is to expel the smoke after the fire has occurred. With a current lack of requirements for this type of system, the only way that ventilation of smoke or odors occurs without significant building damage is utilizing the exit stairs with fans provided by the fire department. This is marginally effective and is further inhibited by buildings with floor plans that do not have a clear path between two exit stairs or when the building is of significant height.

Addressing automatic sprinkler systems; a fire suppressed by an automatic sprinkler system does significantly reduce the total amount of smoke produced. However, the atmosphere created by a sprinkler suppressed fire or smoke from other incidents, such as burnt food, smoldering fires, or the like, still produces a volume of smoke that needs to be removed after the incident.

To reiterate, this system is for fire department use and not intended to be part of the initial life safety systems placed in hi-rise buildings, like sprinklers, fire alarms, and pressurized exit stairways. During a coordinated fire event, the fire command center already requires air-handling equipment and controls to be located therein. When using the mechanical ventilation option, the net result of this proposal is appropriate dampers to zone, per floor, and an additional requirement to provide for 100% fresh air return and exhaust.

Cost Impact: This code change proposal will increase the cost of construction.

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

G65–07/08
403.15 (New), Chapter 35 (New)

Proponent: Michael Gardner, Gypsum Association

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.

1. Add new text as follows:

403.15 Structural integrity of exit stairway enclosures and elevator shaft enclosures. For all buildings that are more than 420 feet (128 m) in height, exit stairway enclosures and elevator shafts enclosures shall comply with Sections 403.15.1 through 403.15.3.

403.15.1. Wall assembly. The wall assemblies making up the exit stairway enclosures and elevators shaft enclosures shall meet or exceed Soft Body Impact Classification Level 2 as measured by the test method described in ASTM C1629/C1629M.

403.15.2. Wall assembly materials. The face of the wall assemblies making up the exit stairway enclosures and elevator shaft enclosures that are not exposed to the interior of the exit stairway enclosure or elevator shaft enclosure shall be constructed in accordance with one of the following methods:

1. The wall assembly shall incorporate not less than two layers of impact-resistant construction board each of which meets or exceeds Hard Body Impact Classification Level 2 as measured by the test method described in ASTM C1629/C1629M.
2. The wall assembly shall incorporate not less than one layer of impact-resistant construction material that meets or exceeds Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C1629/C1629M.
3. The wall assembly shall incorporate multiple layers of any material, tested in tandem, that meet or exceed Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C1629/C1629M.

403.15.3. Other Wall Assemblies: An entire wall assembly that provides impact resistance equivalent to that required by Section 403.15.1.and the Hard Body Impact Classification Level 3 in ASTM C1629/C1629M shall be permitted.

2. Add standard to Chapter 35 as follows:

ASTM

C1629/C1629M-06	Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels

Reason: The intent of this proposal is to incorporate a reference to ASTM Standard C 1629 into the code. The standard was developed through the ASTM process to directly address impact-resistance requirements for materials that could be incorporated into stair and elevator enclosures in high rise construction.

By incorporating the reference to ASTM C 1629 a definitive method of establishing criteria to assess the impact-resistance of stair and elevator enclosures will be incorporated into the code. This is in contrast to recent proposals that have attempted to inappropriately impose specific requirements of the ASTM E 119 standard onto enclosure systems or that have proposed other arbitrary performance requirements for enclosure systems.

While the standard was developed to specifically test gypsum and fiber-reinforced cement panels, it can readily be used to test the impact resistance of other board and panel materials. In addition, it establishes specific values for the impact resistance of materials that can be used as a benchmark for the evaluation of other materials and systems.

This proposal directly reflects recent action by the City of New York. In July 2006, Section 32-05 of Chapter 32 of Title 1 of the Rules of the City of New York was adopted by the City of New York. Section 32-05 established criteria for the evaluation of stair enclosures in office building construction in New York City by incorporating a reference to the ASTM C 1629 standard. Rule 32 also established performance criteria for systems constructed using other materials.

This proposal takes the language adopted by the City of New York and modifies it for use in the IBC. In so doing, it eliminates much of the prescriptive language contained in Section 32-05 of the New York City text. That is intentional since much of the prescriptive language contained in Section 32-05 appears in other sections of or is incorporated by reference into the IBC.

The proposed Section 403.15 establishes that the language will apply only to buildings that are more than 420 feet in height and only to the exit stairway and elevator enclosures within those buildings. This is more restrictive than the New York City language which imposes the impact resistant requirements onto all office buildings regardless of size or height.

Section 403.15.1. directly mimics the New York City language that requires the entire assembly to withstand an impact resistance of 195 lbf as measured by the ASTM C 1629 Soft Body Impact Test. The test method used in C 1629 is conducted in accordance with the ASTM E 695 test method which covers the measurement of the relative resistance of wall, floor, and roof construction to impact loading.

Section 403.15.2 requires the face of the system that is not exposed to the shaft – the outside face - to be protected by a material or materials that comply with a level of impact resistance as established by the ASTM C 1629 Hard Body Impact Test. To comply with the proposed language at least two layers of Level 2 material or one layer of Level 3 material must be incorporated into the system. Level 2 material must withstand a Hard Body impact of 100 lbf to comply with the standard. Level 3 material must withstand a Hard Body impact of 150 lbf to comply with the standard.

The same section also permits the use of a system composed of multiple layers of different materials provided the composite system can comply with a Level 3 Hard Body test. The same concept is contained in the New York City language.

Section 403.15.3. is intended to permit monolithic systems, such as those constructed of masonry or concrete, to be evaluated using an available test method that will permit a quantifiable comparison with the performance requirements established by the proposed language. This is a change from the New York City language which specifically allows the use of masonry or concrete walls, but makes no provisions for other monolithic systems such as those constructed of plaster or other similar materials.

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

Analysis: A review of the standard proposed for inclusion in the code, ASTM C1629/C1629M, for compliance with ICC criteria for referenced standards given in Section 3.6. of Council Policy #CP 28 will be posted on the ICC website on or before January 15, 2008.

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

G66–07/08
403.17

Proponent: Jeff Harper, Rolf Jensen and Associates

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:

403.17 (Supp) Additional ~~Exit Stairway~~ means of egress. For buildings other than Group R-2 that are more than 420 feet (128 m) in height, one additional ~~exit stairway~~ means of egress meeting the requirements of ~~Section 1009 and 1020~~ Chapter 10 shall be provided in addition to the minimum number of exits required by section 1019.1. ~~The total width of any combination of remaining stairways with one stairway removed shall not be less than the total width required by Section 1005.1. Scissor stairs shall not be considered the additional exit stair required by this section.~~

Reason: The purpose of the proposed change is to put the requirement for additional egress beyond what is normally required by Chapter 10 into terms that are already defined and used within the context of the Code. The proposed change is justified in that it gives an AHJ a little more flexibility in what can be considered while at the same time reducing the overall construction cost and increasing design flexibility for super tall buildings.

The rationale cited by the submitters of G71-06/07 was mostly focused on providing a means to permit firefighting operations to continue while allowing a rapid, full building evacuation. However, the resulting code changes materially restrict the designer and the code official into a very specific design for buildings exceeding the 420 foot height. In reality, as the G71 submitter acknowledges, there are other alternatives to achieve the goals of firefighter operations occurring concurrently with building evacuation. The proposed language changes give the AHJ and designer a little more flexibility in the design, construction and operation rather than in dictating the design of buildings exceeding 420 feet.

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

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

G67–07/08
403.17

Proponent: Kim Clawson, Chicago Committee on High Rise Buildings, (CCHRB); David Frable, U.S. General Services Administration and David S. Collins, AIA, The Preview Group, Inc., representing the American Institute of Architects Codes and Standards Committee; Raymond A. Grill, PE, Arup, representing himself; Lawrence G. Perry, AIA, Building Owners and Managers Association (BOMA) International

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:

~~**403.17 (Supp) Additional exit stairway.** For buildings other than Group R-2 that are more than 420 feet (128 m) in height, one additional exit stairway meeting the requirements of Sections 1009 and 1020 shall be provided in addition to the minimum number of exits required by Section 1019.1. The total width of any combination of~~

~~remaining stairways with one stairway removed shall not be less than the total width required by Section 1005.1. Scissor stairs shall not be considered the additional exit stair required by this section.~~

Reasons: Clawson: 1. The provisions in 403.17 requiring additional stairs causes significant additional cost to building construction with little or no demonstrated comparable increase in life safety. The additional costs consist both of the actual construction cost differences between construction of stair (versus a typical floor system); and the costs due to lost rentable and/or usable floor area that has been given over to stair area. It is essential to remember that zoning ordinances limit the total amount of square footage that can be constructed; and that there is no exemption from that total for area used for non-rentable purposes such as stairways.

2. The provision appears to be internally inconsistent with fire protection strategies: R-2 buildings are specifically exempt (presumably because of the use of protect-in-place strategy for those uses) but the provision does not address or accommodate the use of horizontal exits, which are essentially the same concept as protect-in-place.

3. The extreme event has not yet been well enough defined, to confirm that the addition of a third stair will add an significant additional level of protection, or a reasonably necessary level of protection.

4. The provision has been incorporated into the Code somewhat prematurely. There is a need to consider it in regard with other exiting issues that have been recently adopted or are under consideration within the life safety community.~~,~~ Some of these include a fire department elevator (adopted into the 2007 Supplement), the use of elevators for egress of occupants and for ingress of first responders; and increased exit capacity due to increases in the minimum widths of exit stairs. There is an essential need for all the issues related to exiting to be evaluated as a whole.

5. Implementation of the provision is based on the height of the building, not on the need as reflected in the occupant load of a building and its stairs. For instance, an office building with mall floor plates (10,000 gsf) would have the same requirement of three stairs as one with larger floor plates (such as 25,000 gsf).

Frable/Collins: The purpose of this code change proposal is to delete the subject text that currently requires all buildings other than Group R-2 that are more than 420 feet (128 m) in height to install one additional exit stairway.

During the 2006/2007 ICC Code Development Hearings in Orlando, the General Code Committee disapproved this code change proposal for the following reasons:

1. The NIST report was not yet complete, therefore the proposal was premature;
2. Modeling had not been done to show the extent that an additional exit stair would improve exiting;
3. The logistics for closing off an exit stair for fire department staging during an emergency evacuation must be investigated;
4. The calculation method for determining total exit width was confusing, and did not clearly indicate the width required for the additional exit stair; and
5. The location of the additional exit stair in relationship to the other exit stairs and the elevators was not indicated.

At the Final Action Hearings of the ICC in May 2007, the ICC membership voted to overturn the General Code Committee's recommendation and approve the subject code change. At the Hearings, no new information was provided to address any of the General Committee's aforementioned concerns other than indicating that a NIST Report, NISTIR 7425 dated April 2007, *Accounting for Emergency Response in Building Evacuation: Modeling Differential Egress Capacity Solutions* was available at the back of the hearing room. According to proponents of the code change, the egress modeling conducted by NIST clearly demonstrated that the additional stair would improve occupant egress and firefighter access in buildings in all cases.

Based on our review of the subject NIST Report, it contains questionable technical information and numerous assumptions. In addition, it appears the egress modeling conducted by the NIST researchers to support the report cannot be reproduced for verification purposes and therefore in our opinion is inappropriate to be use as the only basis for this code change. For example:

1. The simplified egress simulation with a counter-flow sub-model was calibrated against only one evacuation drill observed in a 6 story office building having exit stairs 68 inches in width with 8 inch riser's heights and 11.1 inch tread depth's and having a very low building population. We would consider this to be atypical. All computer models need to be validated and be able to demonstrate numerous times repeatable results to ensure accuracy. Using data from only one low-rise building evacuation drill having a small population and extrapolating the data to taller buildings having much larger populations without validation is questionable and should not be used as technical substantiation for a code change of this magnitude.

2. The input data and assumptions used for the modeling scenario were not provided in the subject report for review. For example, total building population, occupant travel speed on level routes, occupant travel speed on stairs, floor rate through doors, floor rate on stairs, speed of slowest evacuee, number of exit door leaves available to evacuees, total length of route that is level, vertical distance moved via the stair, stair width (not effective flow width - report states clear width), stair riser height, stair tread depth, etc. were not provided in the report. Therefore, one cannot verify the results stated in the NIST report.

3. The modeling scenario assumes occupants within the exit stairs who are descending from floors located above the fire floor will immediately leave their exit stair, when that stair has been closed by the fire department, and transfer into nearest available stair. The General Code Committee believed that the logistics and time associated with the firefighters closing off an exit stair for fire department staging during an emergency evacuation must be investigated further. This concern was not addressed in the NIST report.

4. The modeling scenario assumes that the firefighters will not use the elevator. The General Code Committee believed that firefighters will typically use an elevator to get near the fire floor in lieu of using the exit stairs, so long as it is safe to use that elevator. This was particularly true since the code change to require a fire service access elevator was under consideration and was approved at the same hearings.

Another concern is with the statement that "scissor stairs shall not be considered an additional exit stair required by this section". As currently written, this statement implies that the exit capacity of a "scissor stair" cannot be utilized in determining the total required exit capacity of the building. This is at best unclear and sends an unreasonable message since the exit capacity of the "scissor stairs" would meet the intent and purpose of improving the building evacuation time.

We seriously question the need for an additional exit stair based on the fact that the IBC now requires a fire service access elevator in all buildings with an occupied floor more than 120 feet above the lowest level of fire department access. This new requirement not only provides a means for firefighters to quickly reach a location within the building one or two floors below the fire floor but also alleviates the impact of counter-flow raised by proponent's to substantiate the need for an additional exit stair.

Recommendation 17 from the NIST WTC report did not specifically require an additional exit stair, but recommended "tall buildings be designed to accommodate timely full building evacuation of occupants …..." This recommendation does not discount the use of elevators or wider exit stairs, yet the proponents have stated that both are ineffective.

Last but not least, we feel the costs to construct the additional extra stair will significantly increase building construction and maintenance costs. For example, the difference between the cost of constructing 2 exit stairs having a nominal width of 44 inches versus constructing 3 exit stairs having a nominal width of 44 inches in a 42 story office building (504 feet in height) having 40,000 square foot per floor is over $1.3 million. In taller buildings the construction costs are even higher; for example the difference between the cost of constructing 2 exit stairs having a nominal width of 44 inches versus constructing 3 exit stairs having a nominal width of 44 inches in a 75 story office building (900 feet in height) having a 45,000 square foot per floor is over $2.3 million.

The bottom line is that it does not take a NIST report nor a rocket scientist to figure out that requiring additional exit stairs in buildings will improve the overall occupant evacuation times from a building. The bigger question that needs to be answered is - "at what economic cost to society is the ICC membership willing to incorporate these "so called" minimum requirements into the IBC." Other options may be available and all the ramifications of this new requirement have yet to be completely considered. It is our belief that with the new requirement for the installation of a fire service access elevator in tall buildings has increased the overall level of safety of the building occupants and fire fighters in a cost effective manner and therefore the need for an additional exit stair is not warranted.

Grill: The committee originally rejected this proposal for various reasons. The Committee statement made in support of disapproval follows. "Committee Reason: The committee felt that review of the NIST report was not yet complete, therefore this proposal was premature. Modeling should be done to show the extent that an additional stair would improve exiting. The logistics of closing off a stairway for fire department staging during an emergency evacuation must be investigated. The calculation method for exit stairway width was confusing, and did not clearly indicate the width required for the extra stairway. The location of the extra stairway in relation to the other exit stairways was not indicated. In a high rise, fire fighters will typically be using the elevator to get near the fire floor and then move to the stairway. A question would be if this stairway should be located near the elevators."

None of these concerns expressed in the committee rejection were addressed during the comment period. The requirement of a third stair to be provided and to not allow it to be considered as part of the egress capacity is overly restrictive. The justification for the proposal indicated that it implemented one of NIST's recommendations as a result of the WTC incident. Recommendation 17 from NIST's web site reads:

"Recommendation 17. NIST recommends that tall buildings be designed to accommodate timely full building evacuation of occupants when required in building-specific or large-scale emergencies such as widespread power outages, major earthquakes, tornadoes, hurricanes without sufficient advanced warning, fires, explosions, and terrorist attack. Building size, population, function, and iconic status should be taken into account in designing the egress system. Stairwell capacity and stair discharge door width38 should be adequate to accommodate counterflow due to emergency access by responders."

Note that NIST indicates that, "Building size, population, function, and iconic status should be taken into account in designing the egress system." The idea that adding a third totally redundant stair will make it easy for occupants to walk down 40 stories or more or make it easy for first responders to walk up 40 stories or more doesn't make sense. As noted in NIST's Recommendation 17, tall buildings should be looked at on a case by case basis.

Perry: This proposal seeks to remove the requirement for an 'extra' exit stair in buildings over 420' in height that was added via a successful public comment at the Rochester Final Action Hearings.

The cost impacts, from initial construction cost to the lifetime costs due to less efficient building cores, were not considered by the proponent. The result of this change, should any local jurisdiction attempt to figure out how to apply it, would likely be to create a maximum building height of 420' in that jurisdiction. There has been no technical substantiation as to the need for this 'extra' stair, no rationale explaining the types of incidents this is supposed to protect from, and no cost/benefit analysis to show that the gain from this change, either for occupant egress or for fire department access times, will be worth the enormous costs.

The new provision is technically flawed in that it establishes a new means of egress requirement solely on a building height basis, and does not correlate the new requirement with application of the rest of Chapter 10. The result is a new requirement that would be interpreted in a wide variety of ways. The proposal adds an 'extra' stair, and requires it to comply with Section 1009 and 1020. Section 1009 provides the 'nuts and bolts' provisions for the stair, and Section 1020 provides the 'nuts and bolts' for the required enclosure. There is nothing in the new language that explains how to apply the remaining provisions of Chapter 10, most of which are based on a floor-by-floor approach to exiting. Examples of the unaddressed issues this new requirement raises:

- Travel distance. The new section requires a calculation assuming 'one stair removed'. Does this need to be satisfied for travel distance purposes as well, with the result being that two exits would always need to be within travel distance?
- Horizontal exits. It is unclear how this new provision would apply in buildings using a horizontal exit approach. Is there no additional requirement for a stair, or would buildings using a horizontal exit have to add a stair on either side of the horizontal exit?
- Scissor Stairs. The new text prohibits using a scissor stair as the 'extra stair'. This can be read to either prohibit scissors stairs from counting as any multiple exits, or allowing the 1019.1-calculated number of exit stairs to be scissor stairs, with the prohibition only applicable to the 'extra' stair.
- Access to Exits. There is nothing in the new text that creates a clear link to mandate that access to the 'extra' stair be provided on any individual floor. The text requires one to provide an extra stair, and then to calculate total required stair width with any one stair removed. Nothing requires providing access to anything other than the number of exits currently required by Section 1019.1.

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

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

G68–07/08
403.18

Proponent: Tony Crimi, A.C. Consulting Solutions, Inc., representing the North American Insulation Manufacturer's Association (NAIMA)

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:

403.18 (Supp) Sprayed fire-resistive materials (SFRM). The bond strength of the SFRM <u>installed throughout the building</u> shall be in accordance with Table 403.18.

Reason: To clarify the requirements in Section 403.18 (2007 Supplement) of the IBC in the previous cycle by proposal G68-06/07 on SFRM bond strength.

Because of the way that the new Table 403.18 is structured, there has been confusion regarding the interpretation of the SFRM bond strength requirements for buildings over 75 ft and 420 ft in height. This proposal intends to clarify that where the SFRM is installed, the bond strengths specified in 403.18 are required to be achieved throughout the height of the building, and not just on those portions of the building exceeding the heights specified in the Table.

Code change proposal G68-06/07 was submitted in the last cycle by the International Code Council Ad Hoc Committee on Terrorism Resistant Buildings. The purpose of this proposal was to increase the required adhesions of Spray Applied Fire Resistant Materials (SFRM). Recommendation 6 of the National Institute of Standards and Technology's (NIST) investigation Report into the World Trade Center (WTC) tragedy called for improvement of the in-place performance of SFRM. The Ad Hoc Committee on TRB demonstrated that these higher standards are warranted by the higher risk associated with taller buildings.

However, the language in Section 403.18 (2007 Supplement) has caused some confusion because it does not explicitly state that the higher bond strength material for buildings over 75 feet in height and for buildings exceeding 420 feet applies throughout those buildings. As an example, where SFRM is installed in a building which is 100 ft in height above the lowest level of fire department vehicle access, the SFRM is required to have a bond strength of 430 psf as specified by Table 403.18 throughout the height of the building, and not only on the uppermost 25 ft of building height.

This Code change clarifies the requirement for higher bond strength material for buildings over 75 feet in height and yet again higher strength for those that exceed 420 feet.

Bibliography: National Institute of Standards and Technology. Final Report of the National Construction Safety Team on the Collapses of the World Trade Center Towers. United States Government Printing Office: Washington, D.C. September 2005.

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

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

G69–07/08

403.18, Table 403.18

Proponent: David Frable, U.S. General Services Administration

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.

Delete without substitution:

~~**403.18 (Supp) Sprayed fire-resistive materials (SFRM).** The bond strength of the SFRM shall be in accordance with Table 403.18.~~

~~**TABLE 403.18 (Supp)**~~
~~**MINIMUM BOND STRENGTH**~~

~~**HEIGHT OF BUILDING**[a]~~	~~**SFRM MINIMUM BOND STRENGTH**~~
~~More than 75 feet and up to 420 feet~~	~~430 psf~~
~~More than 420 feet~~	~~1,000 psf~~

~~For SI: 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kW/m2~~
~~a. Above the lowest level of fire department vehicle access~~

Reason: The purpose of this code change proposal is to delete the subject text and Table that was "approved as modified" (G68-06/07) by the General Code Committee even though the Committee stated in their reason statement that no technical data has been provided to justify increasing the current IBC requirements for the minimum bond strength for SFRM in high-rise buildings. In addition, we feel that the proponents did not provided a logical explanation which clearly shows why the current Code provisions regarding the minimum bond strength for SFRM in high-rise buildings is inadequate and how this subject proposal will improve the level of overall safety to the building occupants. Inspectors for jurisdictions have acknowledged that the single most common reason for SFRM dislodgement during construction is the intentional removal of SFRM by trades for the purpose of attaching certain installations to the steel frame. Therefore, we do not see how Increasing the density or bond strength will resolve this issue. In addition, to our knowledge, there also has been no evidence submitted by any of the proponents to document the claim that building sway dislodges SFRM. Last but not least, it has come to our attention that there may have been misleading testimony regarding the cost impact for installing SFRM at these higher bond strengths. For example, based on independent government cost estimates; SFRM bond strength of 150 psi costs approximately $4.31 per gross square foot floor area; SFRM bond strength of 430 psi costs approximately $6.52 per gross square foot floor area; and SFRM bond strength of 1000 psi costs approximately $11.58 per gross square foot floor area. Based on these cost estimates, the increased cost for using a bond strength of 1000 psi versus 150 psi for a building 504 feet in height (42 stories) @ 40,000 square feet per floor would be over $12.2 million.

We strongly believe that mandating the increased "minimum" SFRM bond strengths for all high-rise buildings is unjustified and that this current code provision will significantly increase building construction costs in ALL high-rise buildings; without knowing if in fact, that increasing the SFRM minimum bond strengths will improve the level of overall safety to the building occupants.

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

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

G70–07/08
404, 712.4, 712.4.5 (New)

Proponent: Sarah A. Rice, CBO, Schirmer Engineering Corp.

Revise as follows:

712.4 Horizontal assemblies. Penetrations of a floor, floor/ceiling assembly or the ceiling membrane of a roof/ceiling assembly not required to be enclosed in a shaft by Section 707.2 shall be protected in accordance with Sections 712.4.1 through ~~712.4.4~~ 712.4.5.

~~**SECTION 404**~~
~~**ATRIUMS**~~

~~**404.1 General**~~ **712.4.5 Atrium.** In other than Group H occupancies~~, and where permitted by Exception 5 in Section 707.2,~~ the provisions of this section shall apply to buildings or structures containing vertical openings defined herein as "Atriums."

~~**404.1.1**~~ **712.4.5.1 Definition.** The following word and term shall, for the purposes of this chapter and as used elsewhere in this code, have the meaning shown herein.

ATRIUM. An opening connecting two or more stories other than enclosed stairways, elevators, hoistways, escalators, plumbing, electrical, air-conditioning or other equipment, which is closed at the top and not defined as a mall. Stories, as used in this definition, do not include balconies within assembly groups or mezzanines that comply with Section 505.

~~**404.2**~~ **712.4.5.2 Use.** The floor of the atrium shall not be used for other than low fire hazard uses and only approved materials and decorations in accordance with the *International Fire Code* shall be used in the atrium space.

Exception: The atrium floor area is permitted to be used for any approved use where the individual space is provided with an automatic sprinkler system in accordance with Section 903.3.1.1.

[F] ~~**404.3 (Supp)**~~ **712.4.5.3 Automatic sprinkler protection**. An approved automatic sprinkler system shall be installed throughout the entire building.

Exceptions:

1. That area of a building adjacent to or above the atrium need not be sprinklered provided that portion of the building is separated from the atrium portion by not less than 2-hour fire barriers constructed in accordance with Section 706 or horizontal assemblies constructed in accordance with Section 711, or both.
2. Where the ceiling of the atrium is more than 55 feet (16 764 mm) above the floor, sprinkler protection at the ceiling of the atrium is not required.

~~**404.4**~~ **712.4.5.4 Smoke control.** A smoke control system shall be installed in accordance with Section 909.

Exception: Smoke control is not required for atriums that connect only two stories.

~~**404.5 (Supp)**~~ **712.4.5.5 Enclosure of atriums.** Atrium spaces shall be separated from adjacent spaces by a 1-hour fire barrier constructed in accordance with Section 706 or a horizontal assembly constructed in accordance with Section 711, or both.

Exceptions:

1. A glass wall forming a smoke partition where automatic sprinklers are spaced 6 feet (1829 mm) or less along both sides of the separation wall, or on the room side only if there is not a walkway on the atrium side, and between 4 inches and 12 inches (102 mm and 305 mm) away from the glass and designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction. The glass shall be installed in a gasketed frame so that the framing system deflects without breaking (loading) the glass before the sprinkler system operates.

2. A glass-block wall assembly in accordance with Section 2101.2.5 and having a 3/4-hour fire protection rating.
3. The adjacent spaces of any three floors of the atrium shall not be required to be separated from the atrium where such spaces are included in the design of the smoke control system.

[F] ~~**404.6**~~ **712.4.5.6 Standby power.** Equipment required to provide smoke control shall be connected to a standby power system in accordance with Section 909.11.

~~**404.7**~~ **712.4.5.7 Interior finish.** The interior finish of walls and ceilings of the atrium shall not be less than Class B with no reduction in class for sprinkler protection.

~~**404.8**~~ **712.4.5.8 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 not exceed 200 feet (60 960 mm).

Reason: Designing a penetration in a horizontal assembly to meet the provisions for "atriums" in 404 is just another penetration protection method allowed by the code, the same as all the other methods found in Section 712.4

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

Analysis: The references to Atrium requirements in Sections 202, 402.9, 706.3.5, 707.2 Exp. 5, Table 903.2.13, Table 1016.1, 1026.1 and 2110.1.1 will be revised editorially if the proposal to move this text is approved.

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

G71–07/08
404, 707.2

Proponent: Richard Schulte, Schulte & Associates

1. Delete without substitution

~~**SECTION 404**~~
~~**ATRIUMS**~~

~~**404.1 General.** In other than Group H occupancies, and where permitted by Exception 5 in Section 707.2, the provisions of this section shall apply to buildings or structures containing vertical openings defined herein as "Atriums."~~

~~**404.1.1 Definition.** The following word and term shall, for the purposes of this chapter and as used elsewhere in this code, have the meaning shown herein.~~

~~**ATRIUM.** An opening connecting two or more stories other than enclosed stairways, elevators, hoistways, escalators, plumbing, electrical, air-conditioning or other equipment, which is closed at the top and not defined as a mall. Stories, as used in this definition, do not include balconies within assembly groups or mezzanines that comply with Section 505.~~

~~**404.2 Use.** The floor of the atrium shall not be used for other than low fire hazard uses and only approved materials and decorations in accordance with the International Fire Code shall be used in the atrium space.~~

~~**Exception:** The atrium floor area is permitted to be used for any approved use where the individual space is provided with an automatic sprinkler system in accordance with Section 903.3.1.1.~~

~~**[F] 404.3 (Supp)Automatic sprinkler protection**. An approved automatic sprinkler system shall be installed throughout the entire building.~~

~~**Exceptions:**~~

1. ~~That area of a building adjacent to or above the atrium need not be sprinklered provided that portion of the building is separated from the atrium portion by not less than 2-hour fire barriers constructed in accordance with Section 706 or horizontal assemblies constructed in accordance with Section 711, or both.~~

~~2. Where the ceiling of the atrium is more than 55 feet (16 764 mm) above the floor, sprinkler protection at the ceiling of the atrium is not required.~~

~~**404.4 Smoke control.** A smoke control system shall be installed in accordance with Section 909.~~

~~**Exception:** Smoke control is not required for atriums that connect only two stories.~~

~~**404.5 (Supp) Enclosure of atriums.** Atrium spaces shall be separated from adjacent spaces by a 1-hour fire barrier constructed in accordance with Section 706 or a horizontal assembly constructed in accordance with Section 711, or both.~~

~~**Exceptions:**~~

~~1. A glass wall forming a smoke partition where automatic sprinklers are spaced 6 feet (1829 mm) or less along both sides of the separation wall, or on the room side only if there is not a walkway on the atrium side, and between 4 inches and 12 inches (102 mm and 305 mm) away from the glass and designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction. The glass shall be installed in a gasketed frame so that the framing system deflects without breaking (loading) the glass before the sprinkler system operates.~~
~~2. A glass-block wall assembly in accordance with Section 2110 and having a 3/4-hour fire protection rating.~~
~~3. The adjacent spaces of any three floors of the atrium shall not be required to be separated from the atrium where such spaces are included in the design of the smoke control system.~~

~~**[F] 404.6 Standby power.** Equipment required to provide smoke control shall be connected to a standby power system in accordance with Section 909.11.~~

~~**404.7 Interior finish.** The interior finish of walls and ceilings of the atrium shall not be less than Class B with no reduction in class for sprinkler protection.~~

~~**404.8 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 not exceed 200 feet (60 960 mm).~~

2. Revise as follows:

707.2 Shaft enclosure required. Openings through a floor/ceiling assembly shall be protected by a shaft enclosure complying with this Section.

Exceptions:

1. A shaft enclosure is not required for openings totally within an individual residential dwelling unit and connecting four stories or less.
2. A shaft enclosure is not required in a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 for an escalator opening or stairway that is not a portion of the means of egress protected according to Item 2.1 or 2.2:
   2.1. Where the area of the floor opening between stories does not exceed twice the horizontal projected area of the escalator or stairway and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13. In other than Groups B and M, this application is limited to openings that do not connect more than four stories.
   2.2. Where the opening is protected by approved power-operated automatic shutters at every penetrated floor. The shutters shall be of noncombustible construction and have a fire-resistance rating of not less than 1.5 hours. The shutter shall be so constructed as to close immediately upon the actuation of a smoke detector installed in accordance with Section 907.11 and shall completely shut off the well opening. Escalators shall cease operation when the shutter begins to close. The shutter shall operate at a speed of not more than 30 feet per minute (152.4 mm/s) and shall be equipped with a sensitive leading edge to arrest its progress where in contact with any obstacle, and to continue its progress on release therefrom.
3. A shaft enclosure is not required for penetrations by pipe, tube, conduit, wire, cable and vents protected in accordance with Section 712.4.
4. A shaft enclosure is not required for penetrations by ducts protected in accordance with Section 712.4. Grease ducts shall be protected in accordance with the *International Mechanical Code*.

~~5. In other than Group H occupancies, a shaft enclosure is not required for floor openings complying with the provisions for atriums in Section 404.~~

~~6.~~ 5. A shaft enclosure is not required for approved masonry chimneys where annular space protection is provided at each floor level in accordance with Section 717.2.5.

~~7.~~ 6. In other than Groups I-2 and I-3, a shaft enclosure is not required for a floor opening or an air transfer opening that complies with the following:

~~7.1.~~ 6.1. Does not connect more than two stories.

~~7.2.~~ 6.2. Is not part of the required means of egress system, except as permitted in Section 1020.1.

~~7.3.~~ 6.3. Is not concealed within the building construction.

~~7.4.~~ 6.4. Is not open to a corridor in Group I and R occupancies.

~~7.5.~~ 6.5. Is not open to a corridor on nonsprinklered floors in any occupancy.

~~7.6.~~ 6.6. Is separated from floor openings and air transfer openings serving other floors by construction conforming to required shaft enclosures.

~~7.7.~~ 6.7. Is limited to the same smoke compartment.

~~8.~~ 7. A shaft enclosure is not required for automobile ramps in open and enclosed parking garages constructed in accordance with Sections 406.3 and 406.4, respectively.

~~9.~~ 8. A shaft enclosure is not required for floor openings between a mezzanine and the floor below.

~~10.~~ 9. A shaft enclosure is not required for joints protected by a fire-resistant joint system in accordance with Section 713.

~~11.~~10. A shaft enclosure shall not be required for floor openings created by unenclosed stairs or ramps in accordance with Exception 8 or 9 in Section 1020.1.

~~12.~~ 11. Floor openings protected by floor fire door assemblies in accordance with Section 711.8.

~~13.~~ 12. Where permitted by other sections of this code.

Reason: The purpose of this code change proposal is to delete the atrium provisions in order to prevent buildings with atriums from being constructed.

The atrium provisions presently contained in the code allow the most basic compartmentation required by the code, floor-to-floor separations, to be violated if a building is protected by an electrically supervised sprinkler system and the floor opening forming the atrium is provided with some form of smoke control. The atrium provisions are based upon the assumption that the sprinkler system will be able to prevent the spread of fire between floors, as well as limit the spread of fire to the area of origin so as to limit the quantity of smoke generated by the fire. The atrium provisions further require some form of smoke control in order to protect portions of the egress system which are exposed to the floor openings forming the atrium. The code permits the smoke control system to be designed based upon the assumption that the sprinkler system will successfully control and limit the size of the fire. In effect, the atrium provisions establish a direct equivalency between the combination of sprinkler protection and smoke control and the separation of floors (floor-to-floor compartmentation).

In recent code change cycles, lobbyists for the manufacturers and installers of passive fire protection have questioned the reliability of sprinkler systems. In the "reason" statement for Code Change G57-01, the Association of the Wall and Ceiling Industries, International states that sprinkler protection fails in 23 percent of the fires which occur in buildings protected by a sprinkler system. In an article titled "Is the AFSCC [Alliance for Fire and Smoke Containment and Control] Anti-Sprinkler?", the AFSCC asserts that the failure rate of sprinkler systems is 1 in every 6 fires which are large enough to activate sprinklers. This same AFSCC article references a report on sprinkler system reliability written by William Koffel of Koffel Associates, Inc.. The "Koffel Report" concludes that the average failure rate of sprinkler systems is 1 in 10 fires large enough to activate sprinklers. Another report on sprinkler reliability published by the National Fire Protection Association titled "U.S. Experience With Sprinklers and Other Fire Extinguishing Equipment," dated August 2005 (actually released on September 9, 2005) concludes that the average sprinkler system failure rate is 1 in 9 fires large enough to activate sprinklers.

Regardless of which of the above sprinkler failure rates is cited by the passive fire protection manufacturers and installers, it can only be concluded that any of the failure rates for sprinkler systems cited above is too high to allow an equivalency for an atrium based solely on the ability of a sprinkler system to control a fire. Hence, the only conclusion which can be drawn (assuming that the sprinkler protection reliability statistics cited by the passive fire protection industry are correct) is that the equivalency permitted by the atrium provisions is not justified.

When considering this proposal, it should be noted that a major fire has never occurred in a building which complies with the atrium provisions contained in the International Building Code or the atrium provisions contained in any one of the three regional model codes. (The atrium provisions contained in the regional model building codes were developed in the late 1970's. Hence, the magnificent fire record of buildings containing an atrium spans almost 3 decades.) It should also be noted that a major fire has never occurred in a high rise building protected throughout by a sprinkler system in the United States since the early 1970's (roughly 35 years). The magnificent fire safety record of buildings containing atriums and high rise buildings in the United States, along with studies of sprinkler systems protecting residential buildings in Scottsdale, Arizona and Prince George's County, Maryland, certainly calls into question the failure rate statistics for sprinkler systems being used by the passive fire protection industry lobbyists. (The Scottsdale Report and the Prince George's County, Maryland study indicate that the sprinkler system failure rate in residential occupancies is less than 1 in 100. Expressed in another way, the reliability of sprinkler protection exceeds 99 percent in residential occupancies.)

Given the above, either the passive fire protection industry is correct about the reliability of sprinkler systems, in which case the atrium provisions should be removed from the code, or the passive fire protection industry's sprinkler system failure rate statistics are grossly exaggerated and the substitution of sprinkler protection for floor-to-floor compartmentation is acceptable. This code change proposal will allow the code change committee and the ICC membership to weigh in on the reliability of sprinkler systems and should finally put to rest the issue of whether or not sprinkler systems are sufficiently reliable to justify reductions in passive fire protection when sprinkler protection is provided.

Of course, if sprinkler protection is considered to be reliable enough to justify the atrium provisions, then sprinkler protection should be considered to be reliable enough to justify all of the reductions in passive fire protection (commonly referred to as "trade-offs") presently permitted by the *International Building Code* when sprinkler protection is provided.

Bibliography:

1. IBC Code Change G57-01.
2. "Is the AFSCC Anti-Sprinkler?", Alliance for Fire and Smoke Containment and Control (AFSCC) website: http://www.afscc.org/AFSCCPositionOnSprinklers.htm

3. "Reliability of Automatic Sprinkler Systems" (Revised January 2006)", William E. Koffel, Alliance for Fire and Smoke Containment and Control (AFSCC) website: http://www.afscc.org/ReliabilityofSprinklerSystemsRJan2006.html
4. "U.S. Experience With Sprinklers and Other Fire Extinguishing Equipment", National Fire Protection Association, August 2005.
5. "Automatic Sprinklers-A 10 Year Study", Asst. Chief Jim Ford, Rural/Metro Fire Department-Scottsdale, Arizona, 1997: http://www.homefiresprinkler.org/images/sprinklers.PDF
6. "Residential Sprinklers: One Community's Experience Twelve Years After Mandatory Implementation.", Fire Chief Ronald Jon Siarnicki, Prince George's County Fire/EMS Department, January 2001: http://www.homefiresprinkler.org/images/PrinceGeorgeStudy.pdf

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

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

G72–07/08
404.1.1, 404.4, 402.9

Proponent: Don Davies, Salt Lake City Corp., representing the Utah Chapter of ICC

Revise as follows:

404.1.1 Definition. The following word and term shall, for the purposes of this chapter and as used elsewhere in this code, have the meaning shown herein.

ATRIUM. An opening connecting ~~two~~ three or more stories other than enclosed stairways, elevators, hoistways, escalators, plumbing, electrical, air-conditioning or other equipment, which is closed at the top and not defined as a mall. Stories, as used in this definition, do not include balconies within assembly groups or mezzanines that comply with Section 505.

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

~~Exception:~~ ~~Smoke control is not required for atriums that connect only two stories~~.

402.9 Smoke control (Supp). Where a covered mall building contains an atrium, a smoke control system shall be provided in accordance with Section 404.4.

~~Exception:~~ ~~A smoke control system is not required in covered mall buildings, when an atrium connects only two stories.~~

Reason: Two levels can be open to each other in several instances in the code without being called an atrium. Openings are allowed in I.B.C. Section 707.2.7.7.1 between two floors without a shaft. One open stairway is allowed even in an nonsprinkled building in IBC Section 1020.1 Ex. 8 and two open stairways are allowed in a fire sprinkled building in Ex. 9. If the architect doesn't want to meet the requirements of an atrium in a two story building simply throwing a stairway in the middle of it makes it an open stairway and all the requirements go away as well as all the supposed hazards. Under the current code an opening between two floors is defined as an atrium and then a series of exceptions are mentioned excepting several different types of openings. The requirement for smoke control is another exception which is required when three floors are open to each other in IBC Section 404.4. Exception #3 to Section 404.5 in an indirect way does not require an enclosure of the atrium when only two floors are involved. That leaves fire sprinkling as the only requirement left in tact when only one floor is penetrated. If that was the intent of the original proponent then that requirement should have been located in Section 903.2. Defining an atrium as an opening between three floors clears up all these problems and makes the code easier to use and makes the atrium section consistent with other parts of the code.

Cost Impact: This will reduce the cost of construction since the requirements of an atrium will not be required where an opening only occurs between two floors.

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