Please remember to bring the following!

- 2018 or 2021 International Building Code
- Any edition of the International Zoning Code
- Legal Aspects of Code Administration
- Basic Code Enforcement (Optional)
- Calculator
- Highlighter
- Pen

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The Complete Permit Technician

Steve Burger, C.B.O., LEED AP
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EduCODE
Feb. 26 and 27, 2024
WELCOME!

- Thank You!
- Use Your Books!
- Slides vs. Handouts
- Sorry, but we may not have enough time to go in-depth.
- Feel free to email me!
- My Email Address is on The First Slide
- Disclaimer and Apologies in Advance

WELCOME

- Spectrum of Class Content
- Cell Phones
- Ask Questions!!!!!!!!!!!!!!!!!!!!!!!
- Personal Experiences
- Restroom Location
- Exits
- Breaks and Lunch
- Some of my opinions 😊
WELCOME

- INTRODUCTIONS
- NAME / TITLE
- WHERE YOU WORK NOW
- HOW LONG IN THE "CODE BUSINESS"
- HAVE YOU EVER TAKEN A CERTIFICATION EXAM BEFORE?

ME! (Woo Hoo!)

Started in the Code Industry in 1972

Worked as a:
- Secretary/Permit Tech
- Plans Examiner
- Building Inspector
- Code Compliance Officer (Code Enforcement)
- Senior Plans Examiner
- Assistant Building Official
- Building Official
- Consultant

Worked in:
- Illinois (Schaumburg, Carol Stream, DuPage County, Moline) 1972-1995
- Arizona (Goodyear, Bureau Veritas Code Consultants) 1995-2009
- California (Folsom) 2009-2017
- Now back in Arizona (Shums Coda Code Consultants-2018, Retired-2020)

Taught Permit Tech Classes (and have been seriously listening to Permit Techs) since 1998

AAS Degree-Architectural Technology
11 ICC Certifications
LEED Accredited Professional
2016 ICC Educator of the Year
What We’re Going to Cover

- The Exam
  - History
  - Reference Materials
  - Tips
  - Contents
- Brief History of the Codes
- Overview of the IBC (Used on Exam)

What We’re Going to Cover (cont’d.)

- Customer Service
  - You at the Counter
- International Building Code (Multiple Chapters)
- Legal Aspects
- International Zoning Code
- Permit Process
  - Plans, Fees, Plan Review, Inspections, C.O.
What We’re Going to Cover (cont’d.)

- Records Retention
- Permit Revocation
- Board of Appeals
- Occupancies and Types of Construction
- Typical Questions
- General Knowledge

What We’re Going to Cover

- We Ain’t Gonna Just Cover Exam Stuff!
- We Want to EXPAND Your Minds and Way of Thinking About the Code!!!
How This Class is Laid Out

Let’s Get Started!
ACCORDING TO FINANCIAL EXPERTS, WHAT IS YOUR GREATEST ASSET?

JOB VS CAREER?
LAYOFFS

Reduction in Force
(RIF’s)

How Can I Survive??

“Quiet Quitting”
vs.
“Quiet Firing”

SORRY, BUT THE CODE
AIN’T SEXY
**WANTED: Permit Technician**

Must be proficient in the following areas:

- Public Relations
- Teacher/Educator
- Babysitter
- Politics
- Language Interpreter
- Psychologist
- Referee
- Initiative
- Mentor
- Computer Expert
- Legal Aspects
- Secretary/Multi-Task
- Time Manager
- Problem Solver
- Inventory Control
- Accountant
- Jr. Bldg. Official

**AND....**

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**www.iccsafe.org**

- **Google: “ICC Search for Certified Professionals”**
- **Scroll down and click on “Permit Technician”**
Selected Certifications
AS OF JANUARY 2, 2024

- AZ 186 (176)
- CO 205 (206)
- WA 279 (277)
- CA 500+ (500+)
- OR 131 (110)
- NV 98 (94)
- CT 4 (5)
- MO 35 (32)
- ID 83 (72)
- TX 404 (365)
- NM 11 (10)
- UT 68 (68)
- MN 51 (51)
- IA 40 (35)
- KS 29 (29)
- IL 89 (80)

THE PERMIT TECH EXAM

**Questions from the International Building Code will be taken from Chapters: 1-3, 6, 12, 17 (1704.1-1704.5)**

- 1. 2015 *International Building Code*® chapters 1-3, 6, 12
- 2. 2015 *International Zoning Code*®
- 3. 2002 *Legal Aspects of Code Administration*
- 4. *Basic Code Enforcement*, Copyright 2008 or newer

$290 as of 1-2-24
“ICC Certification Exam”

OR

www.iccsafe.org/certification-exam-catalog/

Exam Subject Areas

- General Administration--39%
  - Determine Customer’s Needs
  - Verify That Application and Documents Are Complete
  - Verify Contractor Licensing
  - Recognize Basic Building Components
  - Calculate Fees
  - Inspection Requests and Approvals
  - Prepare Certificate of Occupancy
Exam Subject Areas (cont’d.)

- Legal Aspects--22%
  - Answer Questions About Need for Approvals
  - Testify at Trials and Depositions
  - Retention of Documents
  - Project History and Code Compliance
  - Appeals, Suspensions, Revocations
  - General Liability

Exam Subject Areas (cont’d.)

- Plans and Documents--25%
  - Recognize Basic Contents of Documents
  - Determine Level of Review
  - “Recognize” Occupancy Groups
  - “Recognize” Types of Construction
  - Read Maps, Plats and Site Plans
  - Use Scales
  - Calculate Areas and Percentages
Exam Subject Areas (cont’d.)

- Zoning and Site Development -- 14%
  - Explain Site Plan Review Process
  - Explain Land Use Codes
  - Determine Public and Private Easements
  - Verify Structure Location on Lot
  - Verify Required Setbacks
  - Determine Need for Variances

“ICC Learning Center”

OR

learn.iccsafe.org
Permit Tech Nation

A National ICC Chapter for Permit Techs

www.permittechnation.org

UPCOMING CLASSES!

www.svabo.org
No Membership Required!

Also Check Out Arizona Building Officials @ www.azbo.us

Keep an Eye on the Website!
Tips On Taking The Exam

- Your Job Is Based On These Documents
- This Class Will Not Guarantee You’ll Pass
- Study, Study, Study
- Experience (Consciously Competent)
- 2 Hours / 60 Questions = 2 Minutes
- Open Book
- Know Where To Look! Use Tabs
- Become Familiar With Code Layout
- Highlight Important Information/Tables
Taking The Exam (cont’d.)

- Use Index and Table of Contents
- Definitions / Index of Terms
- Try and Determine “Key Words”
- Read the Entire Section (Turn the Page!)
- Watch for Exceptions
- General Vs Specific
- “Shall” Vs “is authorized” or “is permitted” or “shall be authorized”

Taking The Exam (Cont’d.)

- Forget Your Local Amendments
- No “Trick” Questions
- Sleep the Night Before!!!
Be Nervous, But Don’t Be Afraid!

If By Some Slim Chance You Don’t Pass, Use The Experience As A Study Guide

Where Can I Take the Exam?

Proctored Remote Online Testing Option (PRONTO) [2018 and 2021]

OR

https://home.pearsonvue.com/

2015 Only!
Permit Technician Exam

- **History**
  - See Building Standards (March-April 1999)
  - Scope
  - Survey
  - Questions and References and Scoring

- **Topics**
  - Basic Code Enforcement
  - Legal Aspects of Code Administration (Guidebook)
  - Chapters 1, 2, 3, 6, 12, 17 of the 2015/2018 IBC

You Can Build It!
International Zoning Code Chapters

1--Administration
2--Definitions
3--Use Districts
4--Agricultural Zones
5--Residential Zones
6--Commercial and Commercial/Residential Zones
7--Factory/Industrial Zones
8--General Provisions
9--Special Regulations
10--Sign Regulations
11--Nonconforming Structures and Uses
12--Conditional Uses
13--Planned Unit Development

Legal Aspects of Code Administration
Legal Aspects of Code Administration

- Table of Contents
- Index of Terms (Back of Book)
- Front of Chapters

THE INTERNATIONAL BUILDING CODE
International Building Code

Chapter 1, “ADMINISTRATION”
- Title, Scope, Intent, Applicability, Department of Building Safety, Duties and Powers of the Building Official, Permits, Construction Documents, Temporary Structures, Fees, Inspections, Certificate of Occupancy, Service Utilities, Board of Appeals, Violations, Stop Work Order, Unsafe Structures and Equipment

Chapter 2, “DEFINITIONS”
A BRIEF HISTORY LESSON

FIRES THAT SHAPED HISTORY

- Rome, 64 AD
- Great Fire of London, 1666
- The Chicago Fire, October 8, 1871 250 Dead
- Triangle Shirtwaist Factory, New York March 25, 1911 148 Dead
- Coconut Grove Nightclub, Boston, 1942 492 Dead
- Our Lady of Angels, Chicago, December 1, 1958 95 Dead
FIRE HISTORY (cont’d.)

- McCormick Place, Chicago, January 16, 1967
- Beverly Hills Supper Club, Kentucky, May 28, 1977, 165 Dead
- MGM Hotel, Las Vegas, (Is now Bally’s) November 21, 1980, 84 Dead
- Second-floor Disco, Sweden, October 29, 1998, 60 Dead, 173 Injured

- Epitome Nightclub - Chicago, February 18, 2003, 21 Dead
- The Station Nightclub - West Warwick, RI, February 20, 2003, 100 Dead, 190 Injured
- World Trade Center 9-11-2001, 2803+
- Republica de la Cro-Magnon Nightclub – Buenos Aires, Argentina, December 30, 2004, 714 Injured, 185 Dead
- Ghost Ship Warehouse Fire, Oakland, CA, December 2, 2016, Illegal Use and Occupancy, 36 Dead
Fire History (cont’d.)

- Local Fires  (Listen to the News)
- One Fire Can Change Many Lives

In summary: In the past 5000 years, millions of people have sacrificed their lives to bring about Building and Fire Codes.
The First Building Code
Hammurabi (2000 BC)

Law 228. If a builder builds a house for someone and completes it, he shall give him a fee of two shekels in money for each sar of surface.

Law 229. If a builder builds a house for someone, and does not construct it properly and the house which he built falls in and kills its owner, then that builder shall be put to death.

Law 230. If it kills the son of the owner, the son of that builder shall be put to death.

Law 231. If it kills a slave of the owner than he shall pay slave for slave to the owner of the house.

Law 232. If it ruins goods, he shall make compensation for all that has been ruined, and is as much as he did not construct properly this house which he built and it fell, he shall re-erect the house from his own means.

Law 233. If a builder builds a house for someone, even though he has not yet completed it; if then the walls seem toppling, the builder must make the walls solid from his own means.
Law 228. If a builder builds a house for someone and completes it, he shall give him a fee of two shekels in money for each sar of surface.

Law 229. If a builder builds a house for someone, and does not construct it properly and the house which he built falls in and kills its owner, then that builder shall be put to death.

Law 230. If it kills the son of the owner, the son of that builder shall be put to death.

Law 231. If it kills a slave of the owner than he shall pay slave for slave to the owner of the house.

Law 232. If it ruins goods, he shall make compensation for all that has been ruined, and is as much as he did not construct properly this house which he built and it fell, he shall re-erect the house from his own means.

Law 233. If a builder builds a house for someone, even though he has not yet completed it; if then the walls seem toppling, the builder must make the walls solid from his own means.

The Building Code is a Law (When Adopted)

The Three Model (Legacy) Building Codes:
- The Uniform Building Code
  » International Conference of Building Officials (ICBO)
- The National Building Code
  » Building Officials and Code Administrators (BOCA)
- The Standard Building Code
  » Southern Building Code Congress International (SBCCI)
Legacy Building Codes

How Did We Get to One Code?

COMMON FORMAT
Became the International Code Council in 1994

Alphabet Soup
- ICC (International Code Council)
- NFPA (National Fire Protection Association)
- IAPMO (International Association of Plumbing and Mechanical Officials)

“Governmental Consensus”
vs.
“True Consensus”
THE TWO STYLES OF CODES

- Performance
  - “What goes up, must not come down.”
- Specification or Prescriptive
  - “Do this, then do that.”
- Alternate Materials and Methods (IBC Sec. 104.11)
  - “New stuff, new ways.”
- Modifications (IBC Sec. 104.10)
  - “Due to practical difficulties....”

REACTIVE Vs PROACTIVE

- Did-Happen Vs Might-Happen

- Approx. 80% is Fire-Related
FUNDAMENTAL PURPOSES OF THE INTERNATIONAL CODE

- Safety of Building Occupants
  - Fire Prevention, Structural, Environmental, Exiting
- Stop / Reduce Panic
- Safety of Fire Personnel
  - Getting In, Spread of Fire, Structural Collapse
- Safety and Protection of Other Property
- Safety and Protection of Own Property

FORMAT and LAYOUT OF THE 2018 I.B.C.

- Chapter 1 ADMINISTRATION
- Chapter 2 DEFINITIONS
- Chapter 3 USE and OCCUPANCY CLASSIFICATION
- Chapter 4 SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY
- Chapter 5 GENERAL BUILDING HEIGHTS AND AREAS
- Chapter 6 TYPES OF CONSTRUCTION
- Chapter 7 FIRE-RESISTANCE-RATED CONSTRUCTION
- Chapter 8 INTERIOR FINISHES
- Chapter 9 FIRE PROTECTION SYSTEMS
- Chapter 10 MEANS OF EGRESS
- Chapter 11 ACCESSIBILITY
- Chapter 12 INTERIOR ENVIRONMENT
- Chapter 13 ENERGY EFFICIENCY
- Chapter 14 EXTERIOR WALL
- Chapter 15 ROOFS ASSEMBLIES AND ROOFTOP STRUCTURES
- Chapter 16 STRUCTURAL DESIGNS
- Chapter 17 STRUCTURAL TESTS AND SPECIAL INSPECTIONS
- Chapter 18 SOIL AND FOUNDATIONS
- Chapter 19 CONCRETE
- Chapter 20 ALUMINUM
- Chapter 21 MASONRY
- Chapter 22 STEEL
- Chapter 23 WOOD
- Chapter 24 GLASS AND GLAZING
IBC LAYOUT (Cont’d.)

- Chapter 25 GYPSUM BOARD AND PLASTER
- Chapter 26 PLASTIC
- Chapter 27 ELECTRICAL
- Chapter 28 MECHANICAL SYSTEMS
- Chapter 29 PLUMBING SYSTEMS
- Chapter 30 ELEVATORS AND CONVEYING SYSTEMS
- Chapter 31 SPECIAL CONSTRUCTION
- Chapter 32 ENCROACHMENTS INTO THE PUBLIC RIGHT-OF-WAY
- Chapter 33 SAFEGUARDS DURING CONSTRUCTION
- Chapter 34 RESERVED
- Chapter 35 REFERENCED STANDARDS
- Appendix Chapters A THROUGH M

ALSO LOOK ON PAGES ix - xix FOR AN OVERVIEW OF THE CHAPTERS!

Margin Markings

- Solid vertical lines = Technical change from the previous code edition
- Dark arrow = Something has been deleted
- Single asterisk = Text or table relocated within the code
- Double asterisk = Text or table immediately following it has been relocated there from elsewhere in the code
- *Italics* = Definition (‘Cept in California)
NEW Page Numbering in 2021 IBC and IRC!!

- 2018--- Page 1, 2, 3, 4, etc.
- 2021--- Based on Chapters:
  - Page 1-7 = Chapter 1, Page 7
  - Page 10-16 = Chapter 10, Page 16
  - Page 12-4 = Chapter 12, Page 4

ANY QUESTIONS?

sburger6609@gmail.com
Highlights of IBC Chapter One and Legal Aspects of Code Administration
I will highlight the differences between them.
The Building Official

What Does This Mean??

13 Thou shalt not kill.
14 Thou shalt not commit adultery.
15 Thou shalt not steal.
16 Thou shalt not bear false witness against thy neighbour.
17 Thou shalt not covet thy neighbour's house, thou shalt not covet thy neighbour's wife, nor his man-servant, nor his maid-servant, nor his ox, nor his ass, nor anything that is thy neighbour's.
Break It Down!
Keep It Simple!
What Are We (and the Code) Trying To Accomplish?

No Permit, eh?

Which One Are You?
International Building Code

Chapter 1, “ADMINISTRATION”
- Title, Scope, Intent, Applicability, Department of Building Safety, Duties and Powers of the Building Official, Permits, Construction Documents, Temporary Structures, Fees, Inspections, Certificate of Occupancy, Service Utilities, Board of Appeals, Violations, Stop Work Order, Unsafe Structures and Equipment

Chapter 2, “DEFINITIONS”
Why Building Codes?

**IBC, Section 101.3 Purpose.** The purpose of this code is to establish the *minimum* requirements to provide a reasonable level of health, safety 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, safety to firefighters and emergency responders during operations.

Scope

- **IBC, 101.2 Scope.** The provisions of the *International Building 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:** Buildings covered under the *International Residential Code*. *Can also use the IBC (2018 Change)*
APPLICABILITY
Section 102

- **102.1 General**--General vs. Specific
  - What if there is a conflict between two sections?
- **102.4 Referenced codes & standards**--If there is a conflict, this code shall apply.
- **102.5 Partial invalidity**
- **102.6 Existing structures**--The legal occupancy of any structure existing on the date of adoption of this code shall be permitted to continue without change, except as specifically covered in this code...
EXISTING STRUCTURES
Section 102.6

102.6.2 Buildings previously occupied. The *legal* occupancy of any building existing on the date of adoption of this code shall be permitted to continue without change, except as otherwise specifically provided in this code, the IFC or IPMC, or as deemed necessary for the general safety and welfare of the occupants and the public.

DEPT. of BUILDING SAFETY
Section 103

- **103.1 Creation of enforcement agency** - The Department of Building Safety is hereby created and the official in charge shall be known as the Building Official.

- **103.3 Deputies** - …the Building Official shall have the authority to appoint deputies who shall have the powers as delegated by the Building Official...
Duties and Powers of Building Official

Section 104

104.1 General—Enforce and interpret code in compliance with the intent and purpose of this code, adopt policies and procedures, cannot waive code requirements.

104.2---104.7 Applications and permits, Notices and orders, Inspections, ID, Right of entry, Department records. The Building Official shall keep official records...

Section 104 (Cont’d.)

104.8 Liability—“while acting in good faith and without malice...shall not thereby be civilly or criminally rendered liable personally...” Shall be defended by the legal representative of the jurisdiction until final termination of the proceedings.

104.10 Modifications

104.11 Alternate materials, design & methods

104.11.1 Research Reports

104.11.2 Tests
I need a permit for....

IBC, 105.1 Required. Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the building official and obtain the required permit.

Annual Permit

IBC, 105.1.1.

Can be used in lieu of an individual permit for each alteration to an already approved electrical, plumbing, gas or mechanical permit. Owner needs one or more qualified tradespersons.

IBC, 105.1.2.

Shall keep a detailed record of all alterations made under the annual permit. The Building Official shall have access to records or have them filed as designated.
I don’t need a permit for…

- 1. One-story detached accessory structures used as tool and storage sheds, playhouses, and similar uses, provided the floor area does not exceed 120 square feet. **IRC = 200 sf!**
- 2. Fences not over 7 feet high. (Went from 6’ to 7’ in 2012 IBC)
- 3. Oil derricks.
- 4. Retaining walls which are not over 4 feet in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge or impounding Class I, II, or III-A liquids.
- 5. Water tanks supported directly upon grade if the capacity does not exceed 5,000 gallons and the ratio of height to diameter or width does not exceed 2:1.
- 6. Sidewalks and driveways not more than 30 inches above grade and not over any basement or story below and are not part of an accessible route.

**IBC 105.2**

---

**IRC Definition**

Accessory Structure: A structure that is accessory to and incidental to that of the dwelling(s) and that is located on the same lot.

Note: There is no definition in the IBC. The IZC has a definition for “Accessory Building”.
Folsom Dad Builds Tree House, City Says it Violates Code  ---Sacramento Bee  9/11/2018

I don’t need a permit for...

- 1. One-story detached accessory structures used as tool and storage sheds, playhouses, and similar uses, provided the floor area does not exceed 120 square feet. IRC = 200 sf!
- 2. Fences not over 7 feet high. (Went from 6’ to 7’ in 2012 IBC)
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IBC 105.2
I don’t need a permit for...

- 1. One-story detached accessory structures used as tool and storage sheds, playhouses, and similar uses, provided the floor area does not exceed 120 square feet. IRC = 200 sf!
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- 6. Sidewalks and driveways not more than 30 inches above grade and not over any basement or story below and are not part of an accessible route.

IBC 105.2

Normal Load

![Normal Load Diagram]

4’
Surcharge and Angle of Repose
95

96
7. Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work.

8. Temporary motion picture, television and theater stage sets and scenery.

9. Prefabricated swimming pools accessory to a group R-3 Occupancy, as applicable in Section 101.2, which are less than 24 inches deep, do not exceed 5000 gallons and are installed entirely above ground.

10. Shade cloth structures constructed for nursery or agricultural purposes and not including service systems.

11. Swings and other playground equipment accessory to detached one-and two-family dwellings.

12. Window awnings supported by an exterior wall which do not project more than 54" inches from the exterior wall and do not require additional support of a Group R-3, as applicable in Section 101.2, and Group U occupancies.

13. Movable cases, counters and partitions not over 5 feet 9 inches in height.

Also see Electrical, Plumbing, Gas, Mechanical, Repairs, etc.
Applications for Permits

The “Contract”

IBC 105.3
Applications for Permits

Exhibit “A”

IBC 105.3

Applications for Permits

Every application (contract) shall:

 1. Identify and describe the work to be covered by the permit for which application is made.
 2. Describe the land on which the proposed work is to be done by legal description, street address, or similar description that will readily identify and definitely locate the proposed building or work.
 3. Indicate the use or occupancy for which the proposed work is intended.

IBC 105.3
4. Be accompanied by construction documents and other information as required in 107.

5. State the valuation of the proposed work.

6. Be signed by the applicant, or the applicant’s authorized agent.

7. Give such other data and information as may be required by the Building Official.

Action on Application

105.3.1 Building Official shall examine applications within a “reasonable time” after filing. If not in conformance, the Building Official shall reject such application in writing. If in conformance, the Building Official shall issue a permit therefor “as soon as practicable”.

Time Limitation of Application

105.3.2 Application shall be deemed to have been abandoned 180 days after filing unless pursued in “good faith”. The Building Official is authorized to grant one or more extensions of time for periods not exceeding 90 days. The extension shall be requested in writing and “justifiable cause” demonstrated.

Note: IRC allows extensions of 180 days!

Validity of Permit

105.4 Issuing a permit shall not be construed to be a permit to violate the code. The Building Official is authorized to require correction of errors in the construction documents and can prevent the occupancy of a structure where in violation of this code or any other ordinance of the jurisdiction.
-Expiration-
-Suspension or Revocation-
-Placement of Permit-

- 105.5 Permit shall be invalid if work has not commenced after 180 days or if work is suspended or abandoned for 180 days. One or more extensions of 180 days.
- 105.6 Building Official can suspend or revoke permit if issued in error or if based on incorrect or incomplete information.
- 105.7 The permit or a copy shall be kept on the job site until project completion.

Submittal Documents

- IBC, 107.1. Construction documents, special inspection and structural observation programs, and other data shall be submitted in two or more sets with each application for a permit. The construction documents shall be prepared by a registered design professional where required...
- Exception: The Building Official is authorized to waive the submission of construction documents...
Submittal Documents

- **IBC, 107.2.** Construction documents shall be dimensioned and drawn to scale upon suitable material. Electronic media documents are permitted to be submitted when approved by the Building Official. Construction documents shall be of **sufficient clarity** to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and all relevant laws, ordinances, rules and regulations, as determined by the Building Official.

- See Remaining Subsections!

Phased Approval

- **IBC, 107.3.3.** The Building Official is authorized to issue a permit for the construction of foundations or other parts of a building or structure **before the construction documents for the whole building have been submitted**, provided that adequate information and detailed statements have been filed complying with pertinent requirements of this code. The holder of such permit for the foundation or other parts of a building or structure shall proceed at the holder’s own risk with the building operation and **without assurance** that a permit for the entire structure will be granted.
**Design Professional in Responsible Charge**

- If the plans are prepared by a registered design professional, the Building Official shall be authorized to require a registered design professional in responsible charge be designated.

- The Building Official shall be notified in writing of any change in the designated registered professional in responsible charge.

- The registered design professional in responsible charge shall be responsible for reviewing and coordinating submittal documents prepared by others for compatibility with the building design.

**Deferred Submittals**

- A portion of the project documents that may be submitted at a later time.

- Building Official must approve what items may be deferred.

- Must be listed on the original plans.

- Deferred items must be reviewed by the design professional before submittal.

- Deferred items shall not be installed until approved by the Building Official.
Retention of Construction Documents

107.5 One set of approved construction documents shall be retained by the Building Official for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws.

Plan Review Fees

IBC Section 109

Inspections
Section 110

Certificate of Occupancy
Section 111
Will be discussed in another webinar.
Temporary Structures and Uses

- 108.1 General. The Building Official is authorized to issue a permit for temporary structures and uses for not more the 180 days. Can grant extension.

- 108.2 Conformance. Shall comply with Section 3103 (p. 600-2018 p. 31-2--2021)

- 108.3 Temporary power.
- 108.4 Termination of approval. The Building Official is authorized to terminate permit and to order discontinuance.
Service Utilities
Section 112

112.1 Connection of Service Utilities
Cannot make connections until approved by the Building Official

112.2 Temporary Connection
Building Official can authorize temporary connection

112.3 Authority to Disconnect Utilities
In case of emergency, Building Official can authorize disconnection of utilities

BOARD OF APPEALS
IBC Section 113 and
Legal Aspects of Code Administration

Members cannot be employed by the jurisdiction.

Members must be qualified by experience and training to pass upon matters pertaining to building construction.

Building Official shall be an ex officio member of the board and act as secretary.

Building Official shall not have a vote upon any matter before the board.
The board of appeals shall be appointed by the governing body and shall hold office at its pleasure.

They shall adopt rules of procedure for conducting its business.

LIMITATIONS
Section 113.2

An application for appeal shall be based on the claim that the code has been incorrectly interpreted, the code does not fully apply, or an equal or better form of construction is proposed.

The board shall have no authority to waive requirements of this code.
APPEALS PROCEDURES
Legal Aspects of Code Administration

- Board must establish rules.
- Hearings to be open to the public.
- The decisions of the board must be made by a quorum.
- A notice of the hearing must be given to the appellant.
- Burden of proof rests with the appellant.

Violations
Section 114

- **114.1 Unlawful acts.** It shall be unlawful to do any work in conflict or violation of this code.
- **114.2 Notice of violation.** The Building Official is authorized to serve a notice of violation directing the discontinuance of the illegal action.
- **114.3 Prosecution of violation.** If the notice is not complied with promptly, the Building Official can request the legal counsel of the jurisdiction to institute legal action.
- **114.4 Violation penalties.** Violators shall be subject to penalties as prescribed by law.
Stop Work Order
Section 115

115.1 Authority. The Building Official is authorized to issue a stop work order when work is being performed contrary to the code or in a dangerous manner.

115.2 Issuance. The order shall be in writing and given to the owner, agent or person doing work. The cited work shall immediately cease. The order shall state the reason and remedies.

115.4 Failure to comply. Any person who continues work after being served shall be subject to penalties as prescribed by law.

Unsafe Structures and Equipment
Section 116

116.1 Unsafe Conditions

116.2 Record

116.3 Notice

116.4 Method of service

116.5 Restoration or Abatement---Shall comply with the International Existing Building Code
Ready to Move On To “Legal Aspects”?

LEGAL ASPECTS OF CODE ADMINISTRATION

DISCLAIMER!!
Legal Aspects of Code Administration

- Table of Contents
- Index of Terms (Back of Book)
- Front of Chapters
The Public Duty Doctrine

The public duty doctrine makes it difficult to successfully sue a building official for negligence.

Under the public duty doctrine, the courts look to the purpose of the building code to determine to whom the building inspector owes a specific duty. Because the building code is to ensure the safety and protection of the public, the element of negligence cannot be satisfied.

Legal Aspects, Chapter 11, IBC 104.8.
Liability

☐ A legal obligation to perform some act

☐ “Absolute” vs. “Qualified” Immunity

Legal Aspects

Negligence

☐ To prove negligence, four elements must be proved. The Permit Technician must have:
☐ 1) owed a duty to another to act according to a certain standard,
☐ 2) failed to act in accord with that standard, and, therefore,
☐ 3) breached that duty;
☐ 4) thereby causing in the eyes of the law an injury or damage to the other.

Legal Aspects
Breach of Duty

A breach of duty can result from:

1. Misfeasance: Improperly doing something.
2. Nonfeasance: Not doing something that you have the responsibility to do.
3. Malfeasance: Doing something you shouldn’t do at all.

Legal Aspects

Bribery is a Federal Offense!

New York is prosecuting 19 plumbing inspectors for bribery and signing off on projects without looking at them. One contractor-turned-informant wore a wire and made 69 payments totaling $9000 to plumbing and boiler inspectors. If convicted of federal charges, each would face up to 20 years in prison and $250,000 fine.

CODES and STANDARDS Newsletter
(July 2002)
Injunction / Injunctive Relief

- A judicial order prohibiting specified conduct
  - Temporary restraining order
  - Temporary injunction
  - Permanent injunction

Temporary Restraining Order

- An order issued by the court without notice to the defendant and without an opportunity to be heard.
- Issued only in the most extreme circumstances.
**Temporary Injunction**

- Issued only after a notice is given to the defendant and a brief hearing has taken place.
- A full hearing by a court is pending.

**Legal Aspects**

---

**Permanent Injunction**

- Issued after the court has heard evidence by both sides in the case.

**Legal Aspects**
A temporary restraining order and temporary injunction are subject to four legal requirements:

- Threat of irreparable harm
- Greater harm suffered if not granted;
- Probable cause; and
- In the public interest

Discriminatory Enforcement

- Prejudicial in nature.
- Looks at WHO is doing the work rather than HOW the work is done.
- If a provision is waived for one person, it should be waived for all.
- Policy decisions should be applicable to everyone or to no one at all.
Procedural Due Process

☐ People whose rights are to be affected are entitled to be heard, and therefore must be notified.

☐ If an occupancy permit is to be revoked, the occupant must be notified & heard. (Some courts may override this if immediate revocation is crucial to the health & safety of the inhabitants of the building.)

Legal Aspects

Statute

A law enacted by state or federal legislatures.

The biggest difference between a statute and an ordinance is that a statute is passed by a legislature while an ordinance is passed by a municipal government.

Legal Aspects
Homeowners Associations vs. Local Ordinances

Can a city, town or county enforce HOA requirements if the HOA requirements are more restrictive?

Equitable Estoppel

A doctrine by which a municipality may be precluded by its *action*, or *non-action*, from asserting a right which it otherwise would have had.

Legal Aspects
What We Covered

- Highlights of IBC Chapter One
  - Applicability, Existing Structures, Building Official Duties, Permits, Application, Expiration, Design Professional, Deferred Submittals, Board of Appeals
- Intent vs. Letter of the Code
- Basic Legal Concepts
- Some of my opinions 😊

ANY QUESTIONS?

sburger6609@gmail.com
Occupancy Groups and Types of Construction
Before We Get Into Occupancies and Construction Types…

OCCUPANCY CLASSIFICATION and USE Chapter 3

- Why classify occupancies?
- Always Ask!!!!
- So, how many *general* types of occupancies are there?
Two (and a Half)

- **BUSINESS**
  - Products and Services

- **PEOPLE**
  - Living, Entertainment, Health, Worship

- **MISCELLANEOUS**

---

10 OCCUPANCY TYPES & GROUPS

(Chapter 3, Section 302.1)

- A - Assembly
- B - Business
- E - Educational
- F - Factory and Industrial
- H - Hazardous

- I - Institutional
- M - Mercantile
- R - Residential
- S - Storage
- U – Utility

Code says: Do the best you can!
Sec. 302.1

Remember: “or a portion thereof.”
Two (and a Half) Business People
B, F, H, M, S A, E, I, R

Half U

---

Chapter 3
Occupancy Classification and Use

- “Laundry Lists” of Various Occupancies
- Suggestion: Write the Occupancy Type at Top of Page in Your Code Book
CONTENTS-RELATED HAZARDS

□ **Quantity** of Contents

□ **Type** of Contents

□ **Environment** of Contents
ASSEMBLY
Section 303.1

- **A-1** Usually fixed seating, performing arts and motion picture theaters
- **A-2** Food and/or drink such as banquet halls, restaurants, night clubs, taverns and bars
- **A-3** Worship, recreation or amusement such as churches, bowling alleys, museums, libraries
- **A-4** Viewing of indoor sports such as skating, tennis, swimming
- **A-5** Viewing of outdoor activities such as stadiums, grandstands, bleachers
- **Exception:** Less than 50 occupants = B (Sec. 303.1.1)
- **2018:** Occupied roofs: Whatever they most nearly resemble

Sec. 303.1.2—Small assembly spaces shall **not** be classified as Assembly occupancies if:

- **Less than 50 persons** and accessory to another occupancy. They shall be classified as a **B occupancy** or **as part of the main occupancy**.
- **Less than 750 square feet** in area and accessory to another occupancy. They shall be classified as a **B occupancy** or **as part of that occupancy**.
BUSINESS
Section 304

- A building or structure or portion thereof, for office, professional or service-type transactions, including storage of records and accounts such as:
  - Banks, Car Washes, Civic Administration, Fire/Police Stations, Motor Vehicle Showrooms, Post Offices, Educational Occupancies (above 12th grade), Professional Services (attorneys, doctors, dentists, architects/engineers), Training and skill development not in a school or academic program (yoga, ballet, tutoring, etc.), ambulatory care facilities (2021 See Sec. 304.3. Four or more...)

EDUCATIONAL
Section 305

- Building or structure or portion thereof by 6 or more persons at any one time for educational purposes through the 12th grade.

- Day Care. Building or structure or portion thereof for educational, supervision or personal services for more than 5 children older than 2-1/2 years of age fewer than 24 hours.
FACTORY
Section 306

- F-1 Moderate hazard
- F-2 Low hazard facilities that involve the fabrication or manufacturing of noncombustible materials which do not involve a significant fire hazard such as:
  Foundries  Ceramic Products
  Ice  Glass Products

HAZARDOUS
Section 307

- H-1 High explosion (detonation) hazard
- H-2 Moderate explosion or accelerated burning hazard
- H-3 High fire or physical hazard
- H-4 Health hazards
- H-5 Semiconductor fabrication facilities
HAZARDOUS OCCUPANCIES

- What percentage of buildings contain hazardous materials?
- Maximum Allowable Quantities

INSTITUTIONAL
Section 308

- I-1 More than 16 persons, 24-hour basis, ambulatory, capable of self-preservation such as assisted living facilities, group homes, rehab facilities. (5 or less = R-3, more than 5 and up to 16 = R-4)
- I-2 24-hour basis, incapable of unassisted self preservation such as hospitals, nursing homes, mental hospitals, detox facilities.
INSTITUTIONAL (Cont’d.)

- I-3  More than 5 persons under restraint or security such as jails, prisons, reformatories, detention centers, correctional centers

- Has 5 Different Conditions
  - “Free movement” allowed vs. restricted

INSTITUTIONAL (Cont’d.)

- I-4  Day care facility. Any age, less than 24 hours, custodial care by other than parents, guardians or relatives and in a place other than the home of the person cared for.
  
  Adult care: <24 hours, >5 unrelated adults
  Child care: <24 hours, > 5 children of ANY age

  Exception: >5 but no more than 100, < 2-1/2 years of age, room on level of exit discharge with door directly to exterior = Group E.

  (Also see Section 305.2)
MERCANTILE
Section 309

- Buildings that display and sell merchandise that are accessible to the public such as:
  - Wal-Mart
  - Nordstrom
  - Target
  - Costco / Sam’s Club
  - Gas stations

RESIDENTIAL
Section 310

- R-1  Mainly transient in nature such as: hotels, motels, boarding houses *(primarily transient)* Note: See definition of “Transient”.
- R-2  More than 2 dwelling units, primarily permanent in nature such as: apartments, convents/monasteries, dormitories. Also hotels, motels and boarding houses if *non-transient*
- R-3  One- and two-family dwellings
- R-4  Residential Care/Assisted Living Facilities with more than 5 and less than 16 occupants, excluding staff on a 24-hour basis.
STORAGE
Section 311

- S-1 Moderate hazards that are not S-2 such as:
  - Aircraft Hangars, Motor Vehicle Repair Garages, Books, Shoes, Grains, Lumber, Tires
- S-2 Low hazard storage of noncombustible materials such as products on wood pallets or in paper cartons such as cement in bags, foods, dry cell batteries, glass, parking garages

ACCESSORY STORAGE SPACES
Section 311.1.1

- A room or space used for storage purposes that is accessory to another occupancy shall be classified as a part of that occupancy.

- 2018: Deleted the 100 s.f. requirement
UTILITY
Section 312

- Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy such as:
  - Agricultural buildings, Residential Aircraft Hangars, Barns, Carports, Fences over 6'(2018) 7' (2021), Greenhouses, Private Garages, Retaining Walls
  - 2021-Private Garages and Residential Aircraft Hangars—See Sections 406.3 and 412.4

CHAPTER 4
SPECIAL DETAILED REQUIREMENTS BASED ON OCCUPANCY AND USE

- Covered and Open Malls
- High-Rise Buildings
- Atriums
- Underground Buildings
- Motor-Vehicle-Related Occupancies
- Group I-2
- Group I-3
- Motion Picture Projection Rooms
- Stages, Platforms and Technical Production Areas
- Special Amusement Areas
- Aircraft-Related Occupancies
- Combustible Storage
- Hazardous Materials
- Spray Application of Flammable Liquids
- Drying Rooms
- Organic Coatings
- Artificial Decorative Vegetation
- Groups 1-1, R-1, R-2, R-3, R-4
CHAPTER 4 (Continued)
SPECIAL DETAILED REQUIREMENTS
BASED ON OCCUPANCY AND USE

- Hydrogen Fuel Gas Rooms
- Ambulatory Care Facilities
- Storm Shelters
- Play Structures
- Hyperbaric Facilities
- Combustible Dusts, Grain Processing and Storage
- Medical Gas Systems
- Higher Education Laboratories

OTHER AREAS
Chapter 5

- Accessory occupancies--Section 508.2
  These are ancillary to the main occupancy and, generally, shall not occupy more than 10% of the floor area of the story in which they are located.
OTHER AREAS
Chapter 5

Accessory occupancies--Section 508.2
These are ancillary to the main occupancy and, generally, shall not occupy more than 10% of the floor area of the story in which they are located.

OTHER AREAS
Chapter 5

Accessory occupancies--Section 508.2
These are ancillary to the main occupancy and, generally, shall not occupy more than 10% of the floor area of the story in which they are located.

Mixed Occupancies
– Nonseparated (Sec. 508.3)
– Separated (Sec. 508.4 & Table 508.4)
NON-SEPARATED VS. SEPARATED
Chapter 5

If non-separated occupancies is used, the total allowable building size (including area, height, and number of stories per IBC Table 503) is limited to the most restrictive of the occupancies in the area of non-separated occupancies, regardless of positioning.

This design route will generally result in smaller allowable building sizes than those permitted when using separated occupancies. However, it does have the benefit of potentially requiring fewer or no rated assemblies separating occupancies.
See Table 508.4
(Sprinklered / Not Sprinklered)

Fire-Rated Wall

(Unless < 50)
### Table 508.4

**REQUIRED SEPARATION OF OCCUPANCIES (HOURS)**

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<td>F-2, S-2*, U</td>
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</tbody>
</table>

*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 required.  
*NP* = Not permitted.  

- See Section 430.  
- The required separation from areas used only for private or pleasure vehicles shall be reduced by 1 hour but to not less than 1 hour.  
- See Section 406.3.4.  
- Separation is not required between occupancies of the same classification.
Chapter 5

Incidental Uses--Section 509 and Table 509 (Furnace rooms, incinerator rooms, laundry rooms, etc.)

- Fire-rated Separation and/or Sprinklers
- Shall not occupy more than 10% of the building area of the story in which they are located.
TYPES OF CONSTRUCTION
Chapter 6

- Very Simply, How Many Different Types of Construction Are There?
- Fire Resistive Vs Non-combustible
CONSTRUCTION TYPES (cont’d.)

- Mixed Construction Types

- Portions of Buildings Separated With Approved FIRE WALLS May be Considered as Separate Buildings for Classification of Construction Type (Section 706)

Fire Wall

Noncombustible Combustible
THE FIVE BUILDING CODE CONSTRUCTION TYPES
Chapter 6

Non-Combustible
Types I and II
(A & B)

Combustible
Types III, IV-HT and V
(A & B)

Note! 2021 IBC also has Type IV (A, B, C and HT)

THE FIVE BUILDING CODE CONSTRUCTION TYPES
Chapter 6

UNPROTECTED  PROTECTED
But let's keep it simple for now!
### Table 503 Page 96 in 2012 IBC

#### Height Limitations for Unlimited Area Buildings

<table>
<thead>
<tr>
<th>Group</th>
<th>Unlimited Area Buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
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<td>A-2</td>
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<td>A-3</td>
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<td>E</td>
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</tbody>
</table>

#### Notes

- The area of a **Group F-2** or **S-2** building not more than one story in height shall not be limited where the building is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.

- The area of a **Group A-4** building not more than one story above grade plane of other than **Type V** construction, or the area of a **Group B, F, M, or S** building no more than one story above grade plane of any construction type, shall not be limited where the building is provided with an automatic sprinkler system throughout in accordance with Section 903.3.1.1 and is surrounded and adjoined by public ways or yards not less than 60 feet (18 288 mm) in width.
Question!
OK, So What’s the difference between “Occupancy” and “Use”?

302.1 “Occupancy Classification”
302.2 “Use Designation”

IBC Chapter 5
General Building Heights and Areas
Building Occupancy + Type of Construction = How Big and How Tall

Important! We Need Both on the Application and the Plans!
HEIGHT and AREA

- So...Why Do We Determine Occupancy and Construction Type?

Type V-B

Type I-A

What We Covered

- Permit Tech Exam Contents
- “Recognizing” Basic Occupancy Types
- “Recognizing” Basic Construction Types
- The Importance of Classifying Occupancies and Types of Construction
- Asking many questions!!!
- Some of my opinions 😊
ANY QUESTIONS?

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Permit Fees, Basic Plan Review and Inspections
WELCOME!

You’ll also need your Fee Schedule and Calculator in a few minutes…

<table>
<thead>
<tr>
<th>Building Permit Fee (Based on Total Valuation)</th>
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<tr>
<td>$1,000</td>
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<tr>
<td>$1,001 to $2,000</td>
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<tr>
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<td>$100,001 to $500,000</td>
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<tr>
<td>$500,001 to $1,000,000</td>
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<tr>
<td>$1,000,000 and up</td>
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</table>

Also in Appendix L of the 2018 IRC

What We’re Going to Cover

- Permit / Plan Review Fee Calculations
- Simple Structural Engineering Concepts
- Basic Plan Review Items
- Construction Documents Contents
- Basic Inspection Types
- Special Inspections
- The Certificate of Occupancy
- Some of my opinions 😊…….
Exam Subject Areas

• General Administration--39%
  – Determine Customer’s Needs
  – Verify That Application and Documents Are Complete
  – Verify Contractor Licensing
  – Recognize Basic Building Components
  – Calculate Fees
  – Inspection Requests and Approvals
  – Prepare Certificate of Occupancy

Exam Subject Areas (cont’d.)

• Plans and Documents--25%
  – Recognize Basic Contents of Documents
  – Determine Level of Review
  – “Recognize” Occupancy Groups
  – “Recognize” Types of Construction
  – Read Maps, Plats and Site Plans
  – Use Scales
  – Calculate Areas and Percentages
Exam Subject Areas (cont’d.)

• Zoning and Site Development--14%
  – Explain Site Plan Review Process
  – Explain Land Use Codes
  – Determine Public and Private Easements
  – Verify Structure Location on Lot
  – Verify Required Setbacks
  – Determine Need for Variances
International Building Code

Chapter 1, “ADMINISTRATION”

• Title, Scope, Intent, Applicability, Department of Building Safety, Duties and Powers of the Building Official, Permits, Construction Documents, Temporary Structures, Fees, Inspections, Certificate of Occupancy, Service Utilities, Board of Appeals, Violations, Stop Work Order, Unsafe Structures and Equipment

• Chapter 2, “DEFINITIONS”

Fees

Section 109

• **109.1 Payment of Fees.** Permit not valid until fees are paid.
• **109.2 Schedule of Permit Fees.** To be established by the governing authority.
• **109.3 Building Permit Valuations.** Applicant to provide estimated value. Final valuation to be set by the Building Official. (For calculating fees only!)
• **109.4 Work Commencing Before Permit Issuance.** Subject to an additional fee in addition to permit fee. (Formerly “Investigative Fee”)
• **109.5 Related Fees.** Must pay other fees.
• **109.6 Refunds.** The Building Official is authorized to establish a refund policy.
PERMIT FEES

• Typically, multiply the square footage of a project by the valuation factor which can be found on the ICC web site.
  
  Google: “Building Valuation Data”

• This valuation is then compared to the Fee Schedule.

• Don’t forget the “fraction thereof”!!

• Grab those calculators!

---

### Square Foot Construction Costs (2018 International Building Code)

<table>
<thead>
<tr>
<th>Group (2018 International Building Code)</th>
<th>IA</th>
<th>IE</th>
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<th>IE</th>
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<th>VSE</th>
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<td>A-3 Assembly, general, community halls, libraries, museums</td>
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<td>164.01</td>
<td>158.03</td>
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<tr>
<td>B Business</td>
<td>192.02</td>
<td>185.04</td>
<td>179.30</td>
<td>170.56</td>
<td>155.93</td>
<td>150.11</td>
<td>164.01</td>
<td>137.00</td>
<td>131.05</td>
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<td>C Educational</td>
<td>221.52</td>
<td>190.73</td>
<td>185.77</td>
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<td>108.52</td>
<td>102.59</td>
<td>98.58</td>
<td>88.51</td>
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<td>91.25</td>
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<td>164.01</td>
<td>137.00</td>
<td>131.05</td>
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<td>179.46</td>
<td>171.90</td>
<td>158.36</td>
<td>154.06</td>
<td>171.99</td>
<td>141.86</td>
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<td>I-2 Institutional, hospitals</td>
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<td>284.17</td>
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<td>216.01</td>
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<td>211.30</td>
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<td>183.43</td>
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<td>179.46</td>
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<td>129.18</td>
<td>122.96</td>
<td>117.60</td>
<td>109.23</td>
<td>116.95</td>
<td>97.44</td>
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<td>93.50</td>
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<td>N-1 Residential, town</td>
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<td>106.60</td>
<td>101.24</td>
<td>97.65</td>
<td>89.09</td>
<td>85.55</td>
<td>95.87</td>
<td>77.20</td>
<td>75.07</td>
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<td>N-2 Residential, multifamily</td>
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<td>106.60</td>
<td>101.24</td>
<td>97.65</td>
<td>89.09</td>
<td>85.55</td>
<td>95.87</td>
<td>77.20</td>
<td>75.07</td>
<td>75.07</td>
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<tr>
<td>N-3 Residential, one- and two-family</td>
<td>151.10</td>
<td>146.95</td>
<td>143.20</td>
<td>139.61</td>
<td>134.50</td>
<td>130.95</td>
<td>137.27</td>
<td>125.85</td>
<td>118.45</td>
<td>118.45</td>
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<td>N-4 Residential, conventional housing facilities</td>
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<td>184.81</td>
<td>179.46</td>
<td>171.90</td>
<td>158.36</td>
<td>154.06</td>
<td>171.99</td>
<td>141.86</td>
<td>137.46</td>
<td>137.46</td>
</tr>
<tr>
<td>O-1 Storage, moderate hazard</td>
<td>105.73</td>
<td>100.48</td>
<td>94.25</td>
<td>90.25</td>
<td>80.38</td>
<td>76.32</td>
<td>86.10</td>
<td>66.08</td>
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<td>O-2 Storage, low hazard</td>
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<td>99.48</td>
<td>94.25</td>
<td>89.25</td>
<td>80.38</td>
<td>75.32</td>
<td>85.10</td>
<td>65.08</td>
<td>60.30</td>
<td>60.30</td>
</tr>
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<td>U Utility, miscellaneous</td>
<td>83.66</td>
<td>79.00</td>
<td>74.66</td>
<td>70.37</td>
<td>63.47</td>
<td>59.32</td>
<td>67.24</td>
<td>50.19</td>
<td>47.80</td>
<td>47.80</td>
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</tbody>
</table>

a. Private Garages use Utility, miscellaneous
b. For shear only buildings deduct 20 percent
c. N.P. = not permitted
d. Unfinished basements (Group R-2) = $21.00 per sq. ft.
**FEE SCHEDULE SAMPLE**

<table>
<thead>
<tr>
<th>Building Permit Fees (Based on Total Valuation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td>8</td>
</tr>
</tbody>
</table>

- Given: If the valuation factor per square foot for a single family dwelling is **$85.04** and the valuation per square foot for an attached garage is **$28.50**, what is the permit fee for a **2300** square foot house with a **600** square foot attached garage?

Dwelling: $85.04 \times 2300 = \$ \text{ } \\
Garage: $28.50 \times 600 = \$ \text{ } \\
Total Valuation = \$ \text{ } \\
Rounded up!! = \$
FEE SCHEDULE SAMPLE

<table>
<thead>
<tr>
<th>TOTAL VALUATION</th>
<th>FEE</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1.00 to $500.00</td>
<td>$23.50</td>
</tr>
<tr>
<td>$501.00 to $2,000.00</td>
<td>$23.50 plus $3.05 for each additional $100.00, or fraction thereof, to and including $2,000.00</td>
</tr>
<tr>
<td>$2,001.00 to $25,000.00</td>
<td>$95.25 plus $14.00 for each additional $1,000.00, or fraction thereof, to and including $25,000.00</td>
</tr>
<tr>
<td>$25,001.00 to $50,000.00</td>
<td>$161.25 plus $10.10 for each additional $1,000.00, or fraction thereof, to and including $50,000.00</td>
</tr>
<tr>
<td>$50,001.00 to $100,000.00</td>
<td>$437.75 plus $7.00 for each additional $1,000.00, or fraction thereof, to and including $100,000.00</td>
</tr>
<tr>
<td>$100,001.00 to $500,000.00</td>
<td>$993.75 plus $5.60 for each additional $1,000.00, or fraction thereof, to and including $500,000.00</td>
</tr>
<tr>
<td>$500,001.00 to $1,000,000.00</td>
<td>$1,323.75 plus $4.75 for each additional $1,000.00, or fraction thereof, to and including $1,000,000.00</td>
</tr>
<tr>
<td>$1,000,001.00 and up</td>
<td>$5,568.75 plus $3.05 for each additional $1,000.00, or fraction thereof</td>
</tr>
</tbody>
</table>

$993.75 then $5.60 x 113 = $632.80  So, $993.75 + $632.80 = $1626.55

Given: If the valuation factor per square foot for a single-family dwelling is $85.04 and the valuation per square foot for an attached garage is $28.50, what is the permit fee for a 2300 square foot house with a 600 square foot attached garage?

Dwelling: $85.04 x 2300 = $________
Garage: $28.50 x 600 = $________
Total Valuation = $________
Permit = $________
Plan Review Fee (65%) $1626.55 x .65 = $
We Good With Fee Calculations??

Remember! Always Round UP to the Nearest Thousand!!

So...$200,000.01 = $201,000.00

BASIC RESIDENTIAL REVIEW

- Identify parts of a structure on plans
- Identify parts to a complete set of plans
- Check code requirements
- Calculations
Typical Parts of a Building

- Footing
- Foundation (or Stem)
- Floor(s)
- Walls or Supports
- Roof

Some Really Basic Structural Terms

Everything in Equilibrium!
Dead Load vs. Live Load

Dead Load is the weight of materials of construction incorporated into the building, including but not limited to walls, floors, roofs, ceilings, stairways, built-in partitions, finishes, cladding, and other similarly incorporated architectural and structural items, and fixed service equipment, including the weight of cranes, plumbing and electrical pipes, HVAC and fire sprinklers.

Live Loads are those loads produced by the use and occupancy of the building or other structure and do not include construction or environmental loads such as wind load, snow load, rain load, earthquake load, flood load or dead load.
IRC LIVE LOADS
(Also in Table 1607.1 of IBC)

<table>
<thead>
<tr>
<th>Use</th>
<th>Live Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unreinforced attic without storage</td>
<td>10</td>
</tr>
<tr>
<td>Unreinforced attic with limited storage</td>
<td>20</td>
</tr>
<tr>
<td>Habitable attic and other rooms</td>
<td>30</td>
</tr>
<tr>
<td>Balconies, porches, and decks</td>
<td>40</td>
</tr>
<tr>
<td>Fire escapes</td>
<td>40</td>
</tr>
<tr>
<td>Garages and Lean-to's</td>
<td>20#</td>
</tr>
<tr>
<td>Garages with commercial use</td>
<td>40#</td>
</tr>
<tr>
<td>Passenger service garages</td>
<td>50#</td>
</tr>
<tr>
<td>Rooms other than sleeping rooms</td>
<td>40</td>
</tr>
<tr>
<td>Sleeping rooms</td>
<td>30</td>
</tr>
<tr>
<td>Stairs</td>
<td>40#</td>
</tr>
</tbody>
</table>

Dead Load *Plus* Live Load

Don’t drill or notch here!
Modulus of Elasticity, \( E \)
The modulus of elasticity predicts how much a beam will deflect under a bending load. It is the second common joint criterion, determining the "bounciness" of a floor.

**Horizontal Shear, \( F_v \)**
Horizontal shear tends to slide wood fibers over each other horizontally. Short beams carrying heavy loads should be checked for shear.

**Compression Parallel to Grain, \( F_c \)**
Studs, posts, and columns are compressed parallel to the grain of the wood. Loads on wall studs are usually very low, but posts and columns carrying heavy loads should be checked.
Why Are Soil Tests Required?
The scale will have a long mark to the left of a zero, which is the beginning of the feet, and several shorter marks to the right of the zero, which represents the inches. Line up the zero mark with the beginning of the section you want to measure. The nearest mark the line passes, is the foot measurement. Often, since the same side will have two scales on it, the marks will alternate one scale and then the other, even to odd. You must make sure you know which one you should be using. Once you count up the feet, slide the ruler left to meet up the end of the line with the nearest foot mark. The beginning of the line will bleed over the zero mark to the right. The shorter 'inch' mark that the line meets up with will be the amount of inches you need. The first measurement gives you the feet, the second the inches. No math involved, and after a bit of practice, it will become second nature.
Architect’s Scale

1/8”
Architect's Scale

Using an Architect's Scale

The scale is placed so that full feet are measured on one side of the line marked "0" and inches on the other side of the line.

Notice that the 1/8" scale and 1/4" scale provide divisions in feet and inches. The 1/2" scale and 3/4" scale provide divisions in feet, inches, and half inches.

Example:

1. 1/4" = 1'-0"

2. 1/8" = 1'-0"

3. 1/8" = 1'-0"

4. 1/8" = 1'-0"

5. 1/8" = 1'-0"
Engineer's Scale
Usually used on ____________?

One-Tenth Increments Instead of Inches

So, 10.5 feet = 10'-6"...NOT 10'-5"!!

Engineer's Scale

30'

15'

80'

50'

1" = 10'

1" = 20'
Any Last Question???

End of Day 1