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The New NYC Construction Codes Training Seminar

New York City Department of Buildings

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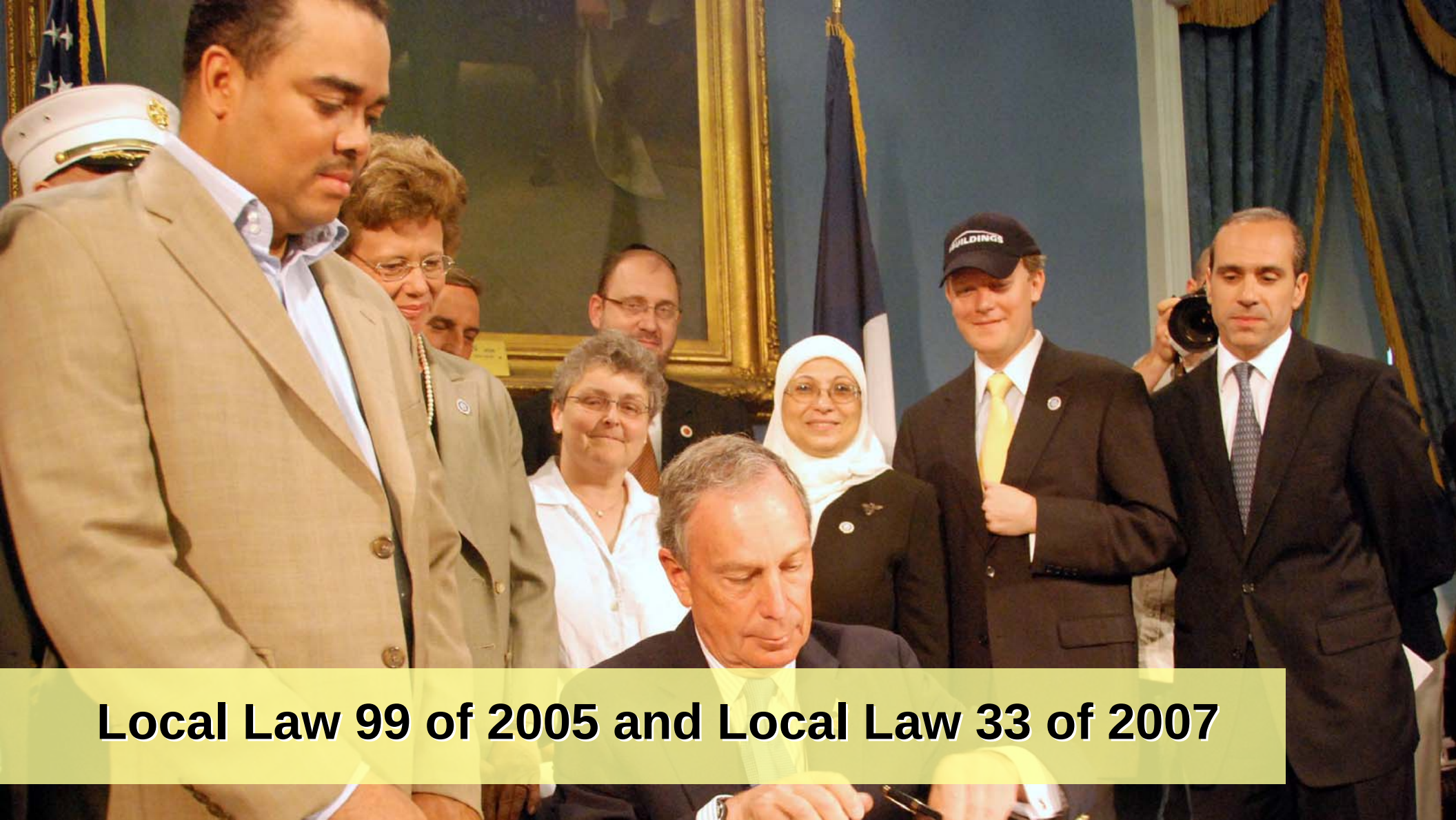
Learning Objectives

This seminar will discuss in general the differences between the current New York City Building Code and the New 2008 New York City Building Code in the following areas:

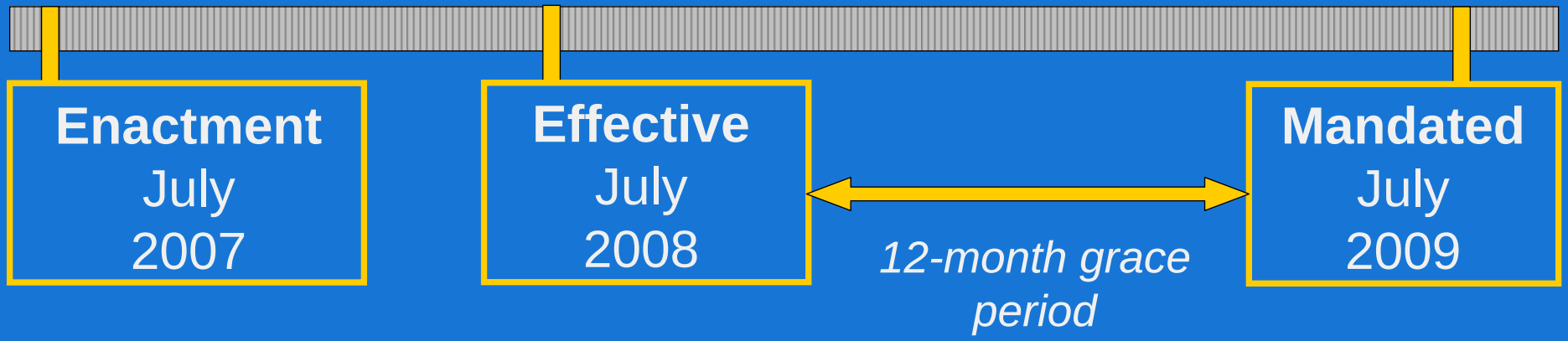
Chap 1	Administration
Chap 3	Use & Occupancy Classifications
Chap 4	Special Detailed Requirements based on Use and Occupancy
Chap 5	General Heights and Areas
Chap 6	Types of Construction
Chap 7	Fire-Resistance-Rated Construction
Chap 9	Fire Protection Systems
Chap 10	Means of Egress
Chap 11	Accessibility
Chap 13	Energy Efficiency
Chap 16	Structural Design
Chap 17	Structural Tests and Special Inspections
Chap 33	Safeguards During Construction



Local Law 99 of 2005 and Local Law 33 of 2007

Timeline of 2008 NYC Construction Codes

For 1 year between the Effective Date (‘08) and the Mandated (‘09), either the new code or current code may be elected, i.e. 12-month grace period



Applicability of 2008 NYC Building Code to New Buildings & Alterations to Existing Buildings

- Applicability of '08 Code provisions of Administration, Enforcement, and Construction Safety

- Applicability of other '08 Code provisions such as Plumbing, Fuel Gas, Mechanical, Fire Protection, Elevators, Accessibility, and Public Right-of-Way for applications submitted on or after 7/1/09

New York City Construction Codes Organization

28-100s to 500s	Administration and Enforcement
28-600s	Plumbing Code (Including Chapters 1-13 of the Plumbing Code)
28-700s	Building Code (Including Chapters 1-35 of the Building Code)
28-800s	Mechanical Code (Including Chapters 1-15 of Mechanical Code)
28-900s	Fuel Gas Code (Including Chapters 1-13 of Fuel Gas Code)

Chapter 1 - Administration

Approval of Materials and Approved Agencies

- MEA Process Streamlined: Code permits as-of-right use of materials that are listed and labeled
- Code authorizes regulation of approved agencies to list and label products
- New OTCR will be charged to establish acceptance criteria of new materials, methods of construction and performance based systems

Filing, Approval & Permits

Ordinary Plumbing Work: Qualifying ordinary plumbing work may be performed without a permit:

- The licensed plumber submits monthly report listing completed work and work in progress

Limited Plumbing/Sprinklers/Standpipes Alterations:

Qualified alterations shall not require the filing of plans

- Limits have been increased from $18,000 to $25,000

Permit Duration:

Permits may be issued for up to 2 years

Professional Certification Program

- Commissioner to establish prequalification criteria for participation in the Pro-Cert Program
- Professional will be required to apply for registration with the Department
- Performance of the professional for a specified period is a factor in entering the program
- Professionals are required to have a professional liability insurance
- A registrant must meet 12-month performance standards per LL4/07 to retain Pro-Cert privileges

Special & Progress Inspections

- All required special inspections are assembled in Chapter 17
- Special inspectors shall be registered with the Department
- Progress Inspections mandated at intervals
  - ⇨ Foundations and footings
  - ⇨ Lowest floor elevation
  - ⇨ Frame inspection
  - ⇨ Fire-resistance-rated construction

Final Signoff & Certificate of Occupancy

- Requires sign-off of applications
- Authorizes payment of outstanding penalties before issuance of Certificate of Occupancy (CO)
- Codify issuance of Partial CO
- Eliminates changes in number of habitable rooms as a trigger for CO

Fee rebates

For buildings that incorporate sustainable design:

- Use of renewable energy
- Energy savings beyond the Energy Code of NYS
- Water conservation measures
- Use of Brownfield sites
- Recycling of construction & demolition waste
- Provision of bicycle facilities in all but 1- and 2-family dwellings
- Achievement of LEED

Mechanical Code Changes

Code Promotes Energy Efficiency:

- Encourages use of energy efficient new technologies such as micro-turbines and fuel cells
- Codifies solar energy in Chapter 14 of NYC MC
- Minimum indoor design temperature has been reduced from 70º to 68º
- NYC outdoor design temperature has been raised from 5º to 13º
- Allows horizontal exhaust through exterior walls
- Indoor air conditioning design temperature increased from 75º to 78º

Mechanical Code Changes

Fuel Oil Storage:

- Storage per floor increases from 275 gallons to 330 gallons
- Limits storage to 100,000 gallons per building
- Allows for UL-listed tanks to be used
- Uses updated NFPA standards on fuel storage
- Enhances fire safety design features for fuel oil storage

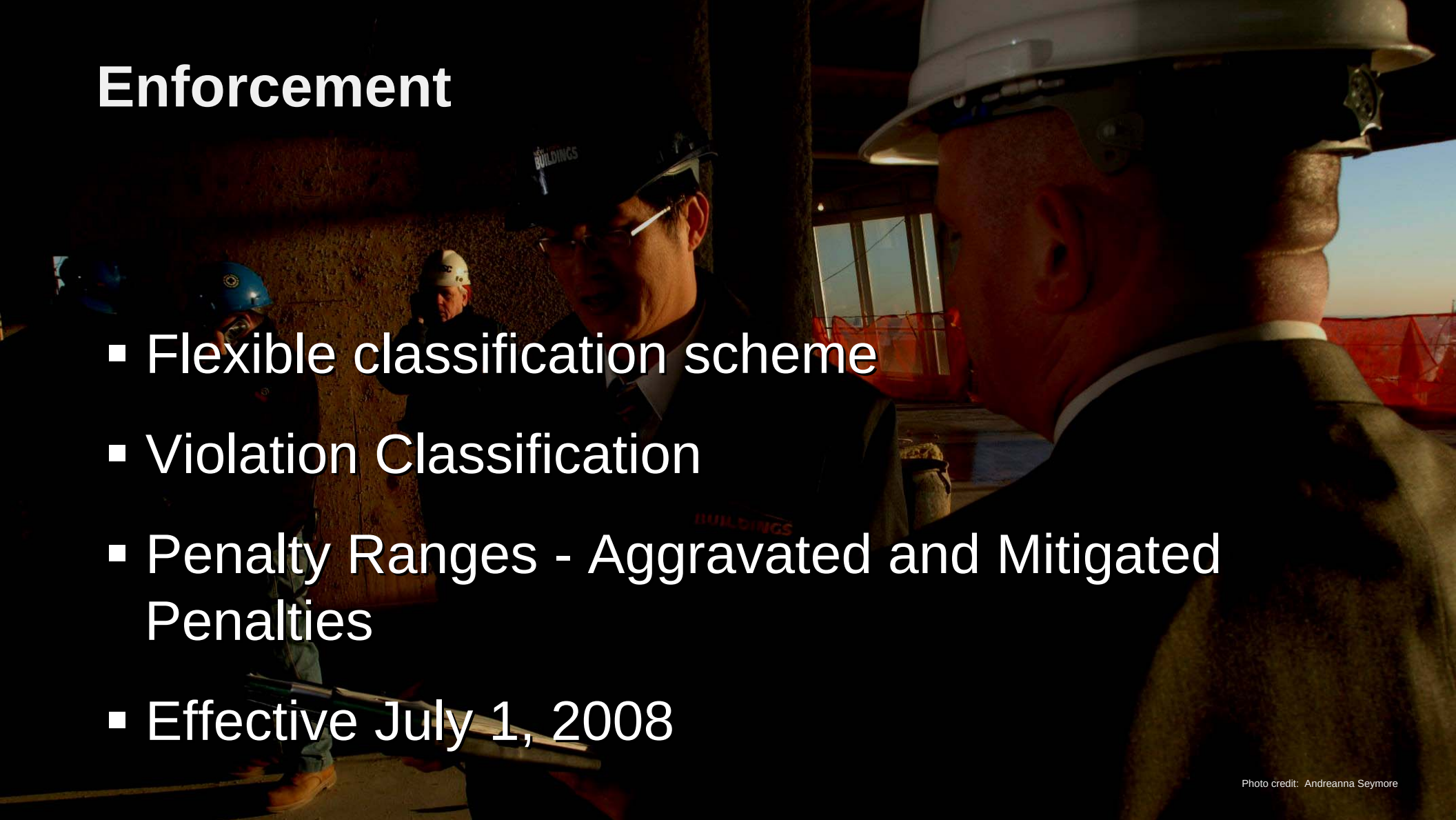
Plumbing Code Changes

- Table 403.1 is more user friendly – Minimum number of Plumbing Fixtures; Includes Potty Parity
- Wet venting permitted for fixtures within the same bathroom groups
- Circuit venting permitted for up to 8 fixtures
- Use of plastic PVC piping in waste and vent piping increased from 3 stories to 5 stories in residential buildings
- Trap sizes changed from 2” to 1 ½” for kitchen sink, and from 3” to 2” for floor drains

Enforcement

Photo credit: Andreanna Seymore

Enforcement



- Flexible classification scheme
- Violation Classification
- Penalty Ranges - Aggravated and Mitigated Penalties
- Effective July 1, 2008

Photo credit: Andreanna Seymore

New Construction Code Comparisons

- Similar ECB Enforcement & Compliance Process
- No More Hazardous & Non-hazardous Designations
- “Immediately Hazardous,” “Major,” & “Lesser”
- No More Second Offenses; New Penalty Paradigm Standards for Aggravating Conditions

Photo credit: Andreanna Seymore

Penalties

- Base
- Aggravated 1 - (2.5 X Penalty Increase, 10X Default)

  ⇨ Currently known as 2nd offense and rarely used by DOB
- Aggravated 2 - (5X Penalty Increase, Statutory Max)

(continued…)

Aggravated Penalties (cont.)

Aggravated 2

Prepared case documenting history of non-compliance on same or related properties including:

- Multiple violations (various conditions)
- History of unreasonable delays in correction
- False filings
- Injury or fatality

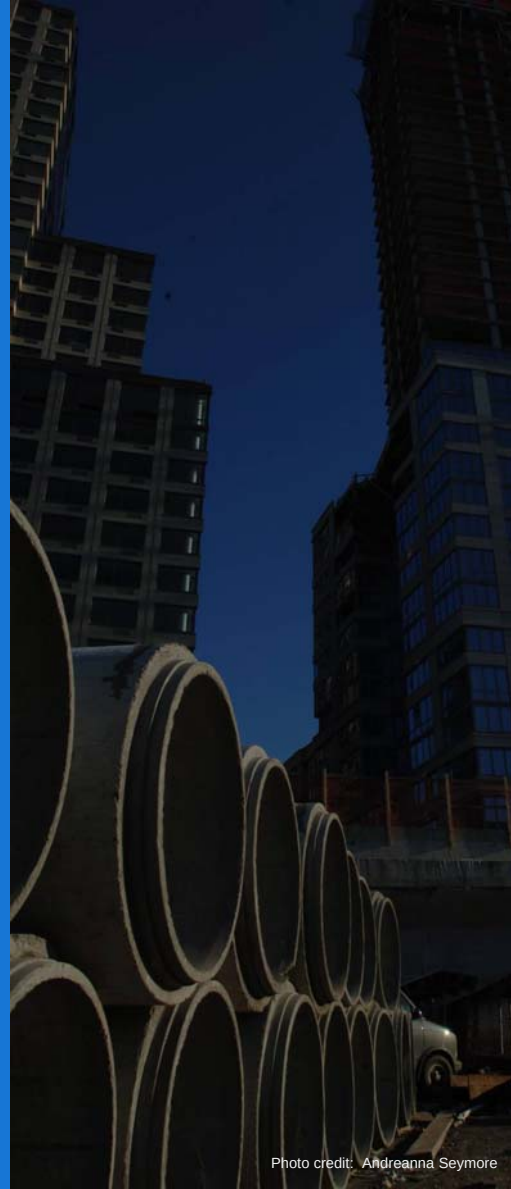


Photo credit: Andreanna Seymore

Licensing

- 3 year-terms staggered issuance
- 1 year to start process and 1 year to finish
- New insurance requirements
- 5 years limited reinstatement
- Discipline authorized for failure to pay outstanding penalties related to business
- Site safety managers and coordinators part of Chapter 33

Building Maintenance and Periodic Inspections

Periodic filings assembled in one place:

- Elevators
- Facades
- Boilers
- **Retaining walls and party walls**
- **Work place exits**

Chapter 3 - Use & Occupancy Classifications

A	**Assembly:** Groups A-1, A-2, A-3, A-4, and A-5	**F**
B	**Business:** Office, professional, service-type transaction, public or civic services	**E**
E	**Educational**: 5 or more persons at any time for educational purposes	**G**
F	**Factory and industrial:** Groups F-1 and F-2	**D**

H	**High Hazard:** Groups H-1, H-2, H-3, H-4, and H-5	**A**
I	**Institutional:** Groups I-1, I-2, I-3, and I-4	**H, J-2**
M	**Mercantile:** Display and sale of merchandise	**C**
R	**Residential:** Groups R-1, R-2, and R-3	**J**
S	**Storage:** Groups S-1, and S-2	**B**
U	**Utility and Miscellaneous:** Structures of an accessory character or not classified in any specific occupancy	**K**

Highlight of Important Changes

- Assembly spaces < 75 persons as Business
- Educational uses above 12th grade classified as Business
- Non-production chemical laboratories classified as Business
- Student dormitories classified as Group R-1
- New concept: Student Apartments (Group R-2)

Chapter 4 - Special Detailed Requirements Based on Use and Occupancy

Occupancies Covered in Chapter 4

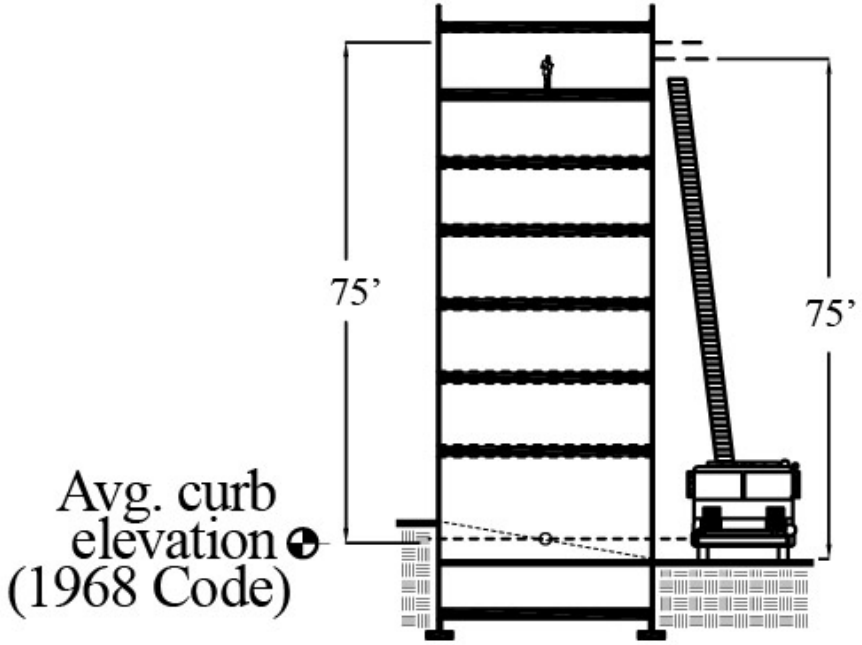
- Covered mall buildings
- **High-rise buildings**
- Atriums
- Underground buildings
- Parking
- Hospitals
- Prisons
- Movie theatres
- Stages
- Special amusements
- Aircraft-related occupancies
- Hazardous materials
- Group H occupancies

High-Rise Buildings (Section 403)

- Occupied floors > 75 feet above the lowest level of Fire Department vehicle access (no longer measured to the roof)
- LL 26/04
- Elevator lobbies opening into rated corridors
- Emergency power and one-way voice communications required for R-2 buildings > 125’
- Smokeproof enclosures

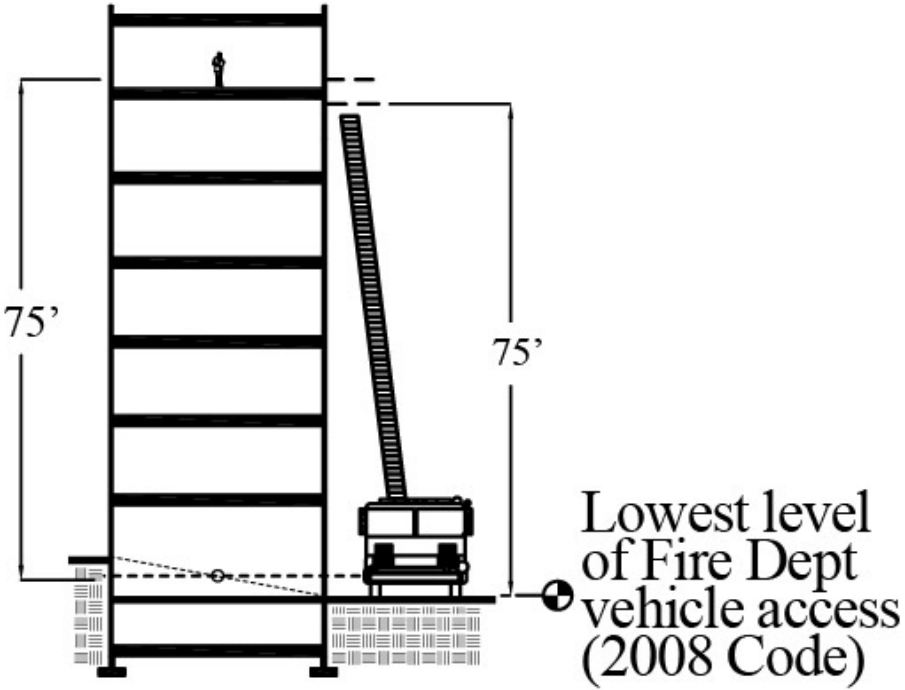
✔ = Yes, it *is* a high rise

✘ = No, it's *not* a high rise



1968 Code: ✔

2008 Code: ✘



1968 Code: ✔

2008 Code: ✔

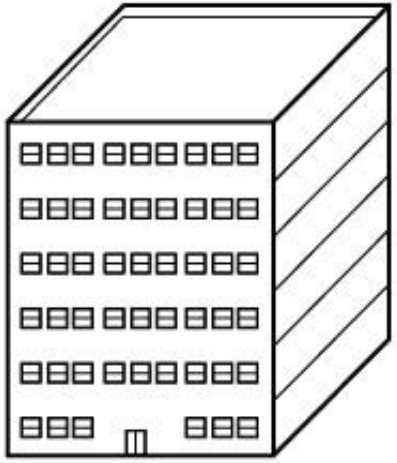
Chapter 5 - General Heights and Areas

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

		TYPE OF CONSTRUCTION							
		TYPE I		TYPE II		TYPE III		TYPE IV	
		A	B	A	B	A	B	HT	
GROUP	Hgt(feet) Hgt(S)	UL	160	65	55	65	55	65	
A-1	S A	UL UL	UL UL	6 17,500	3 10,500	6 14,700	3 5,600	6 15,000	
A-2	S A	UL UL	UL UL	6 17,500	3 9,500	6 14,000	3 5,600	6 15,000	
A-3	S A	UL UL	UL UL	6 17,500	3 9,500	6 14,000	3 5,600	6 15,000	
A-4	S A	UL UL	UL UL	6 17,500	3 9,500	6 14,000	3 5,600	6 15,000	

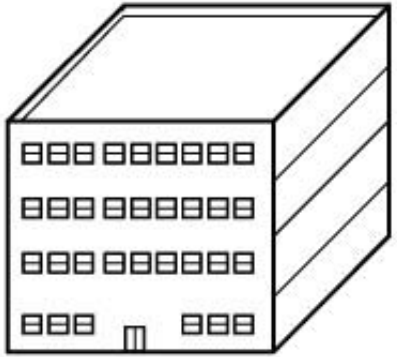
Modifications to Table 503

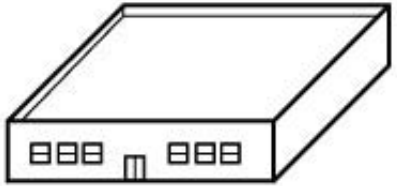
- For buildings > 3 stories
- Height and area increase for sprinklers
- Area increase for frontage space
- Total building area limited for buildings > 3 stories

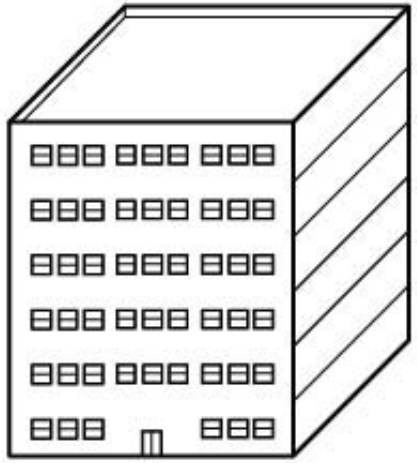


D-1 Factory

68 Code
Class I-D

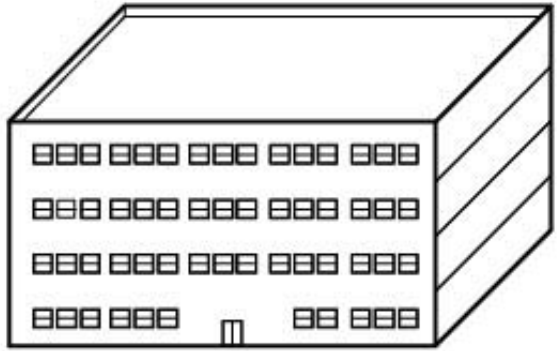






F-1 Factory

08 Code
Type II-A



Incidental Use Areas

- Boiler rooms, storage rooms, etc.
- Separation and/or protection per Table 508.2
- Treated like main occupancy

Accessory Occupancies

- Max. 10% of the area of the story
- No separation is required
- Height and area limitation is based on the main occupancy

Mixed occupancies

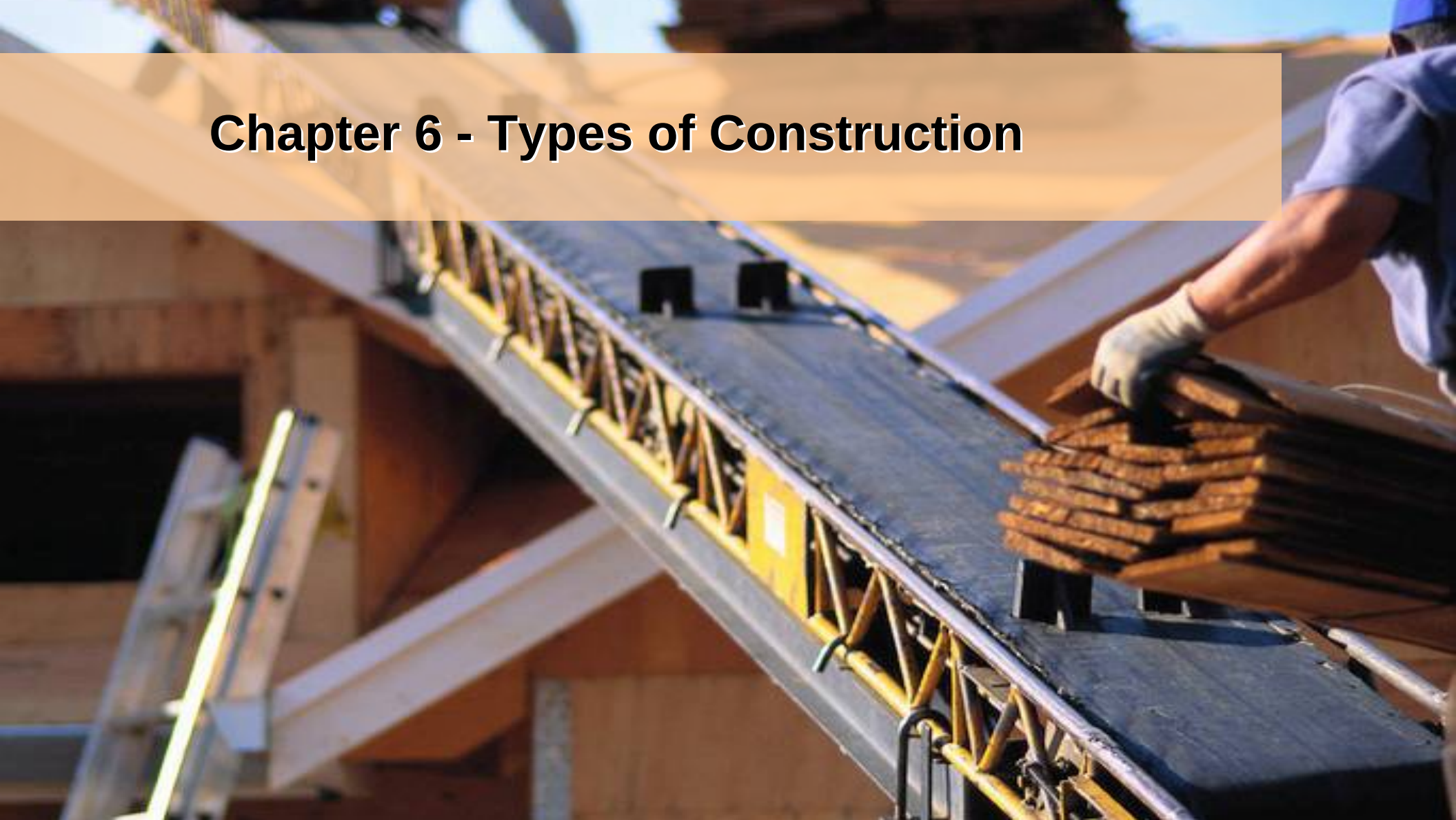
Nonseparated Option:

- Height and area based on the most restrictive
- No separation required

Separated Option:

- Separations per Table 508.3.3
- Height and area evaluated individually for each occupancy

Chapter 6 - Types of Construction



Classifications

2008 Code construction type	Similar current code construction class
Type IA	Class I-B
Type IB	Class I-C
Type IIA	Class I-D
Type IIB	Class I-E
Type IIIA	Class II-B
Type IIIB	Class II-C
Type IV	Class II-A
Type VA	Class II-D
Type VB	Class II-E

Table 601: Fire-Resistance Rating Requirements

BUILDING ELEMENT	TYPE 1	
	A	B
Structural Frame[a] Including columns, girders, and trusses	3[b]	2[b]
Bearing walls		
Exterior[f, g]	3	2
Interior	3[b]	2[b]

Table 602: Rating of Exterior Walls based on Separation Distance

FIRE SEPARATION DISTANCE (feet)	TYPE OF CONSTRUCTION	GROUP H
< 5[c]	All	3
≥5 <10	IA Others	3 2
≥10 <30	IA, IB IIB, VB Others	2 1 1
≥30	All	0

Combustible Materials in Type I and II Construction

Some examples of combustible materials permitted in noncombustible construction:

- Foam plastics for thermal and acoustical insulation
- Show windows
- Interior partitions in buildings occupied by a single tenant
- Exterior wall coverings

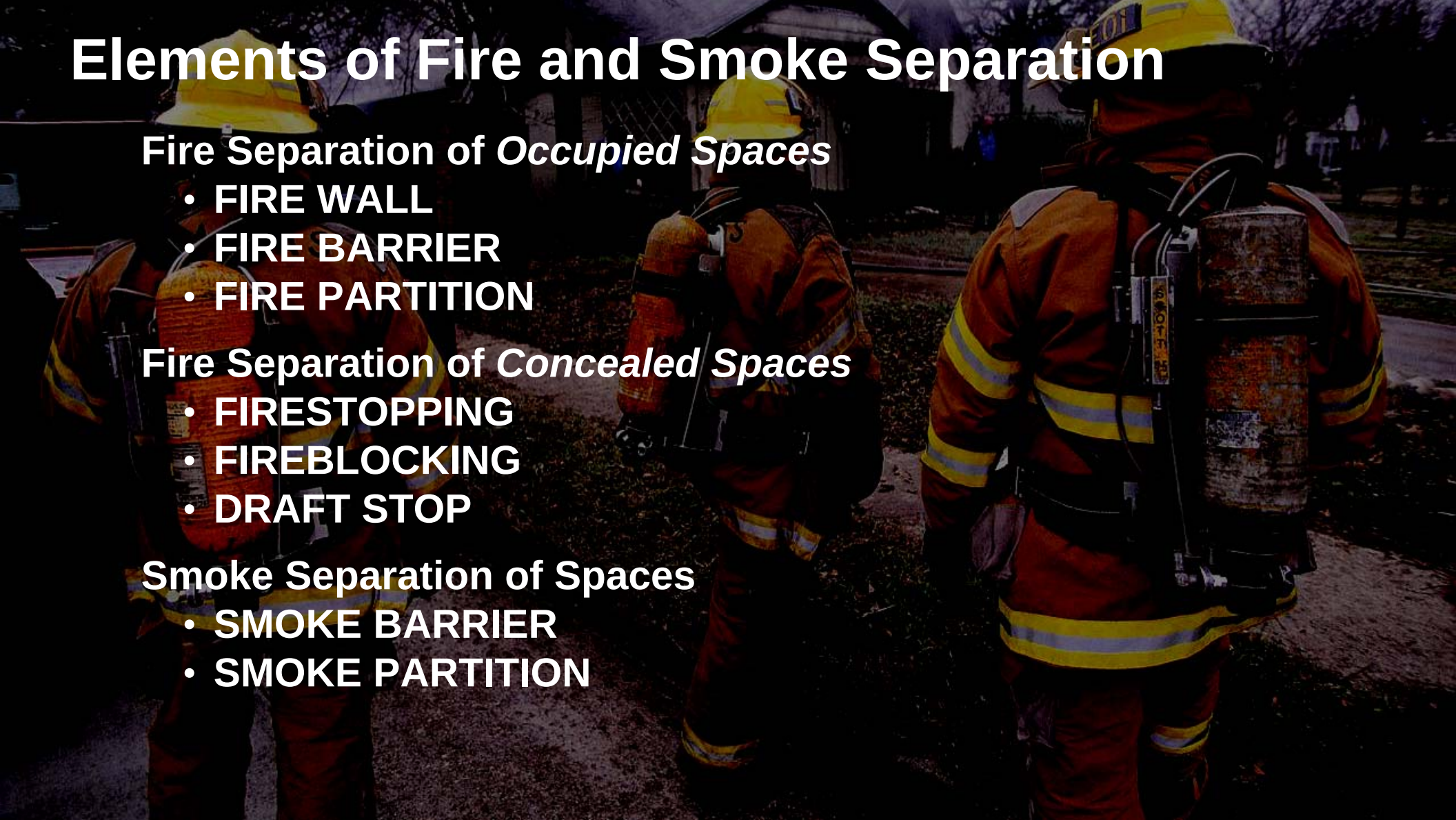
Chapter 7 - Fire-Resistance-Rated Construction

Exterior walls (Table 704.8)

- Opening limitations based upon separation distances
- Unprotected openings permitted within 15 feet

CLASSIFICATION OF OPERNING	FIRE SEPARATION DISTANCE (FEET)		
	0 to 3[e,h]	Greater than 3 and not more than 5[b]	Greater than 5 and not more than 10[d,f]
Unprotected	Not Permitted[g]	Not Permitted[b,g,k]	10%
Protected	Not Permitted [i,j]	15%[k]	25%[k]

Elements of Fire and Smoke Separation



Fire Separation of *Occupied Spaces*

- **FIRE WALL**
- **FIRE BARRIER**
- **FIRE PARTITION**

Fire Separation of *Concealed Spaces*

- **FIRESTOPPING**
- **FIREBLOCKING**
- **DRAFT STOP**

Smoke Separation of Spaces

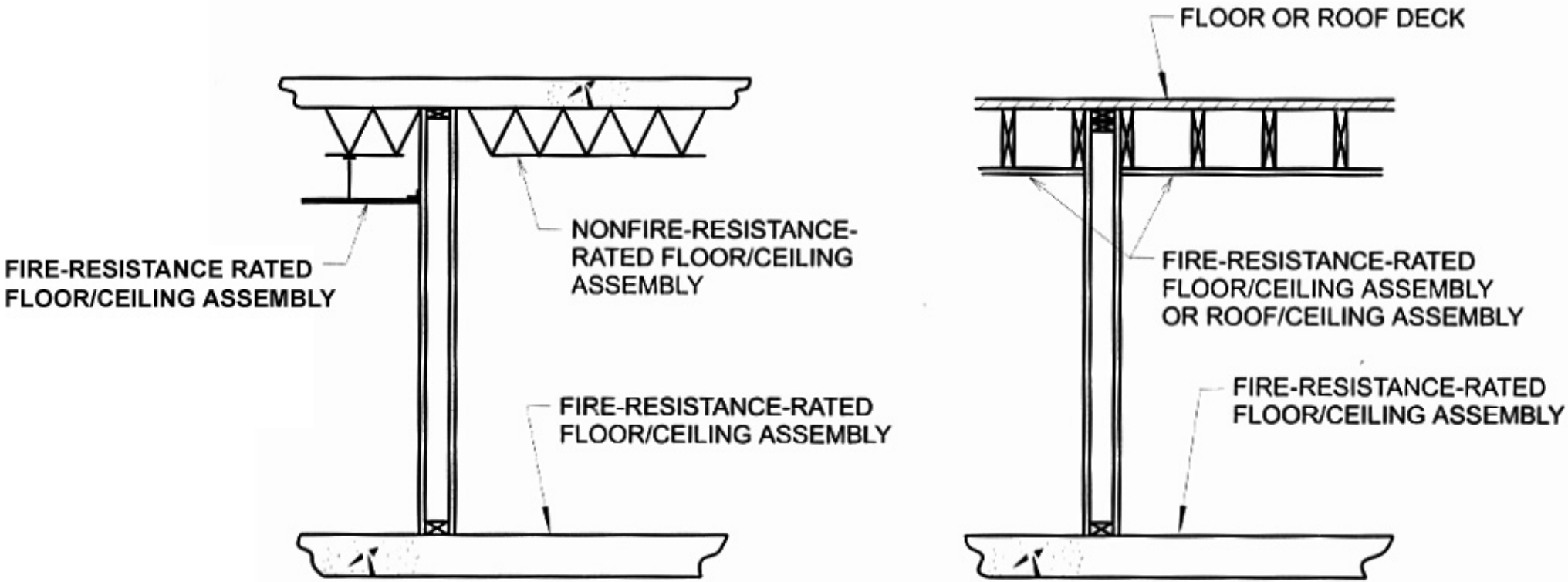
- **SMOKE BARRIER**
- **SMOKE PARTITION**

Fire Wall (Section 705)

- Extends continuously from the foundation through the roof
- Each side of a fire wall is a separate building
- Similar to 1968 code definition of fire division

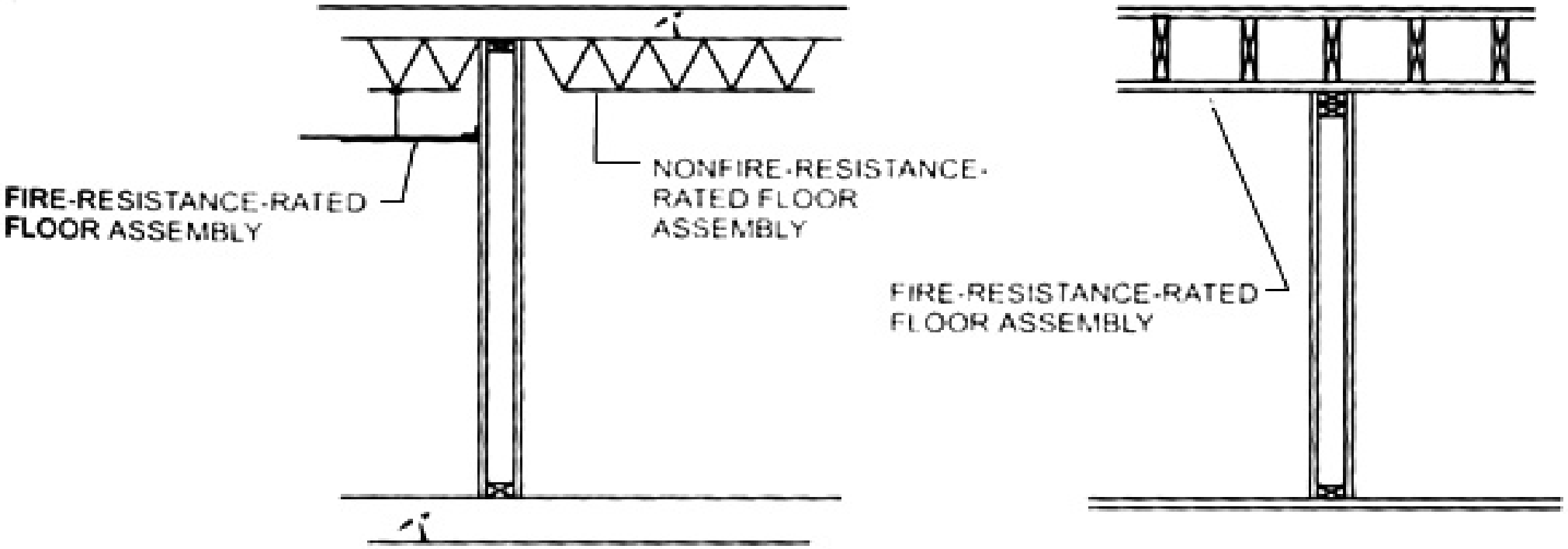
Fire Barrier (Section 706)

A fire-resistance-rated horizontal or vertical assembly with protected openings



Fire Partition (Section 708)

A 1-hour fire-resistance-rated vertical assembly with protected openings



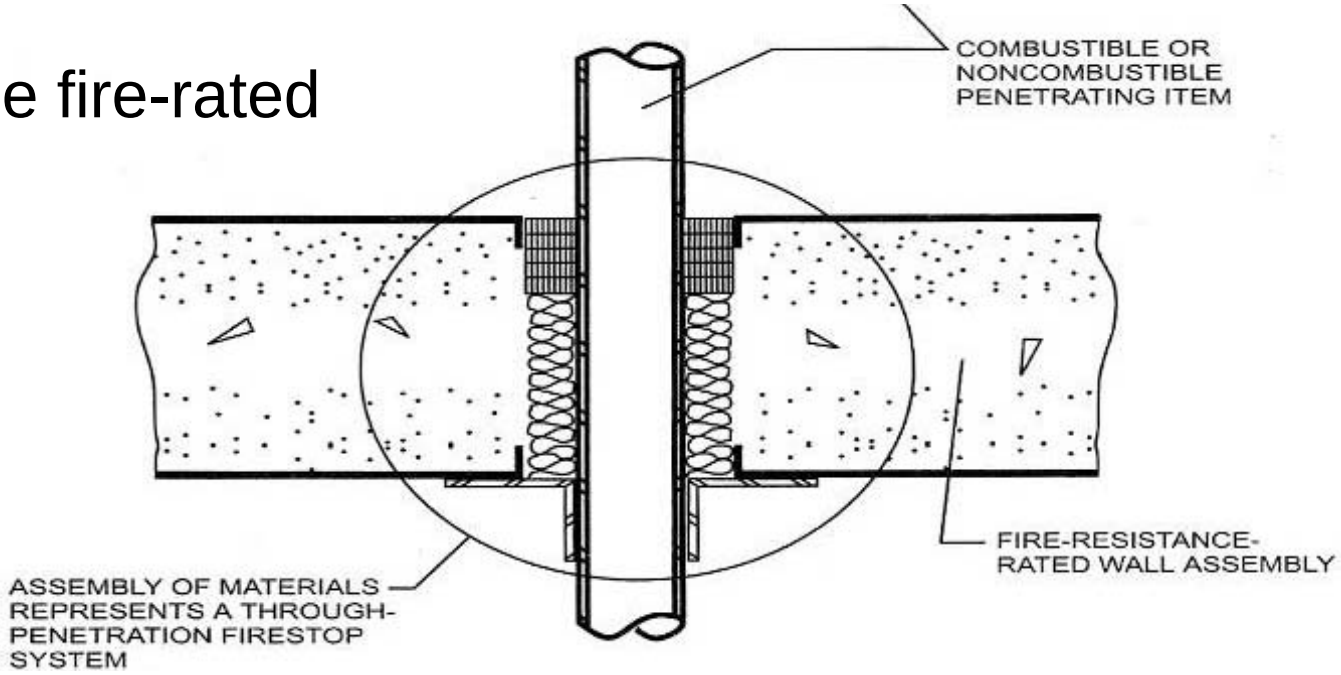
Separation of concealed spaces (Section 717)

Firestopping

- Fire-rated material installed to resist the free passage of flame or hot gases through rated constructions

Fireblocking

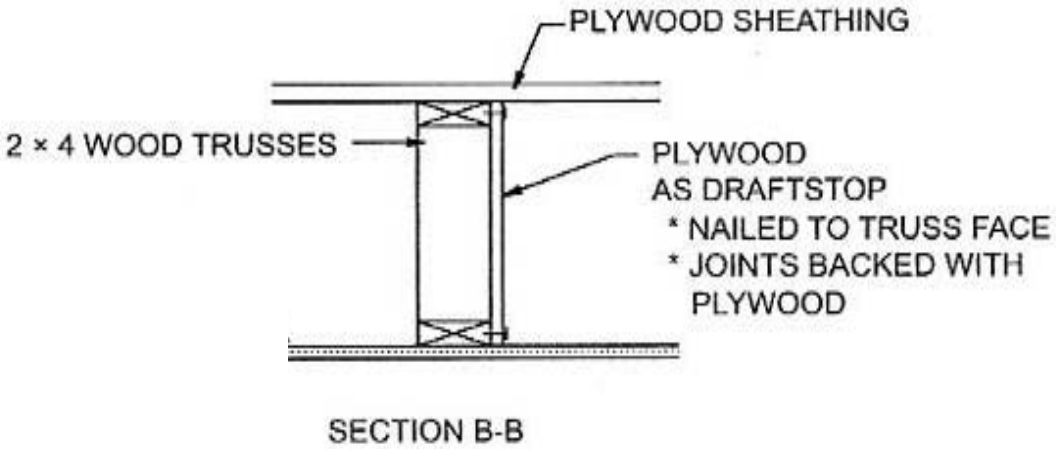
- Not required to be fire-rated

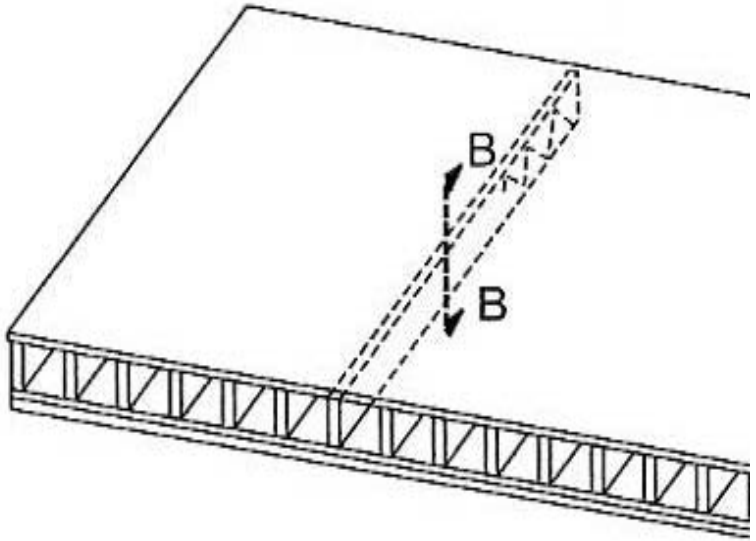


Separation of concealed spaces (Section 717) Draftstopping

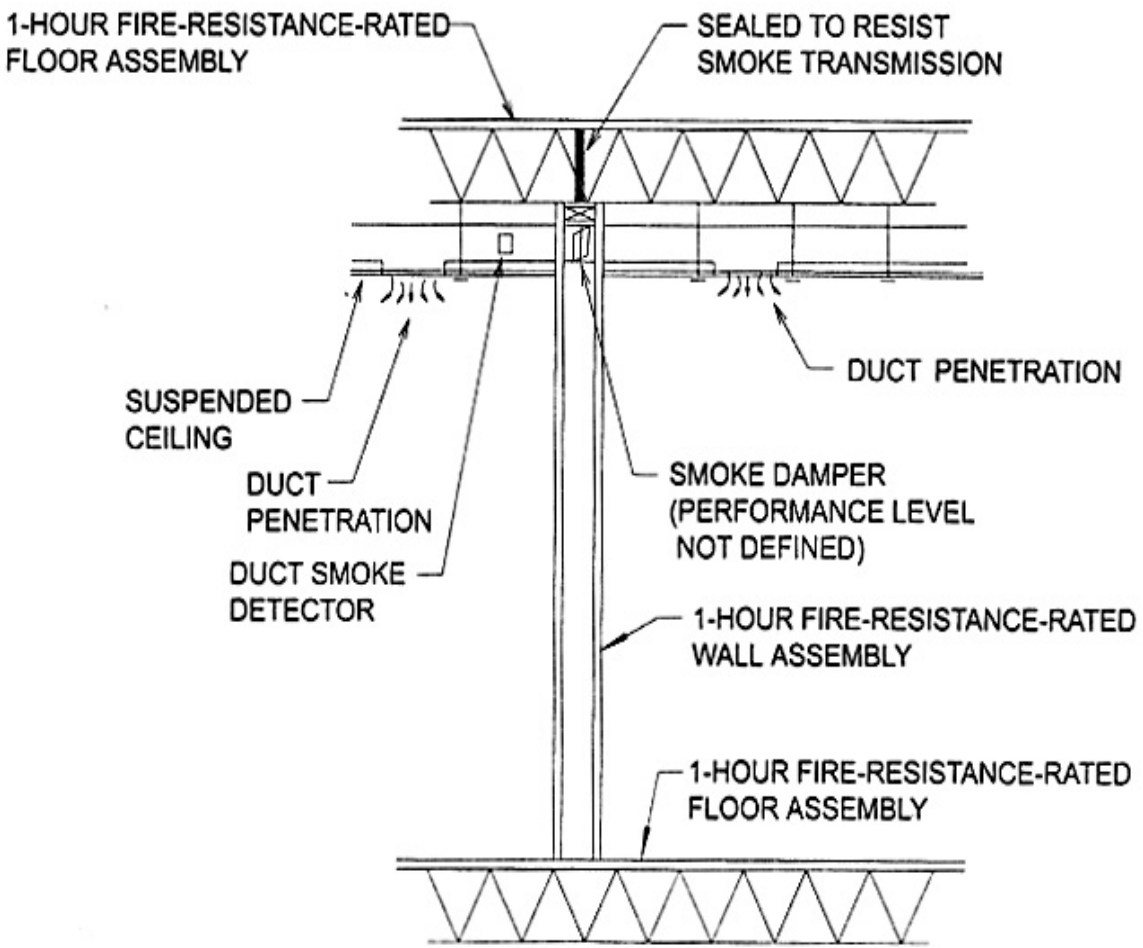
Installed to resist the free passage of air in concealed spaces

Not required to be fire-resistance-rated





Smoke separation of occupied spaces



Smoke Barrier

1-hour fire-rated

Smoke Partition

Not required to be fire-rated

Chapter 9 -Fire Protection Systems

Automatic Sprinkler Systems (Section 903)

- References NFPA 13, 13R, and 13D, as modified in Appendix Q
- Establishes thresholds based upon:
  - ⇨Occupancy group
  - ⇨Occupant load
  - ⇨Height above the lowest level of fire department vehicle access
  - ⇨Fire area
  - ⇨Building area

Automatic Sprinkler Systems (Section 903)

- All residential occupancies require sprinklers *except*:
  - ⇨ Detached 1- or 2-family: ≤ 3 stories
  - ⇨ Attached 1-family ≤ 3 stories
- Any building with a floor located 55 feet above the lowest level of fire department vehicle access, and occupied by more than 30 persons, requires sprinklers
- High-rise buildings require a secondary on-site water supply

Alternative Automatic Fire Extinguishing Systems (Section 904)

- References the Fire Code for most non-water systems

- Commercial cooking systems are required to be protected by carbon dioxide extinguishing systems or wet-chemical extinguishing systems

Standpipe Systems (Section 905)

References NFPA 14, as modified for NYC in Appendix Q

- The modifications to NFPA 14 differs from the current code for very tall buildings (> 300 feet)
- Manual fire pump not required
- Redundant automatic and gravity fed water supplies
- Larger tank sizes for on site storage of water for fire fighting purposes
- Dedicated high pressure siamese riser
- Zoned System

Fire Alarm Systems (Section 907)

References NFPA 72, as modified for NYC in Appendix Q

Establishes thresholds based upon:

- occupant load
- fire area
- building area

Mechanical and electrical equipment rooms *of any size* are required to be equipped with smoke detectors (except R-2)

Fire Alarm Systems (Section 907)

- Student dormitories are classified as R-1 and must meet fire alarm system requirements similar to hotels

- Student apartments classified as R-2 require manual and automatic fire alarm systems for buildings with ≥ 15 student apartments

Fire Alarm Systems (Section 907)

- Smoke alarm and CO alarm requirements within dwelling units

  ⇨ Within each room used for sleeping purposes
  ⇨ Outside of sleeping rooms, within 15 feet
  ⇨ One on each floor
  ⇨ Interconnected to each other
  ⇨ Hardwired with battery backup

Fire Alarm Systems (Section 907)

High-rise buildings in all occupancies, except I-1, I-2 and R-2, require two-way voice communication systems

Group R-2 buildings > 125’ in height requires one-way voice communication system from the panel in the lobby to each dwelling unit and vertical exit

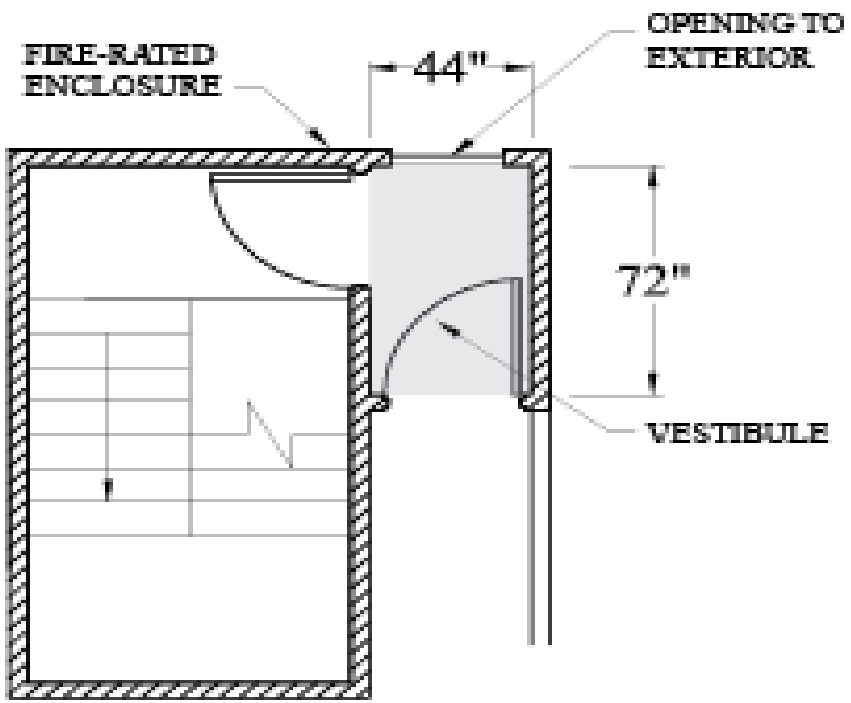
Smoke Control Systems (Section 909)

- Smokeproof enclosures in high-rise buildings
  Can be either:
  - ⇨ An open exterior balcony;
  - ⇨ A naturally ventilated vestibule (2-hr rated);
  - ⇨ A mechanically ventilated vestibule (2-hr rated); or
  - ⇨ Pressurization of the stair enclosure
- Mechanical smoke control system in atriums and malls

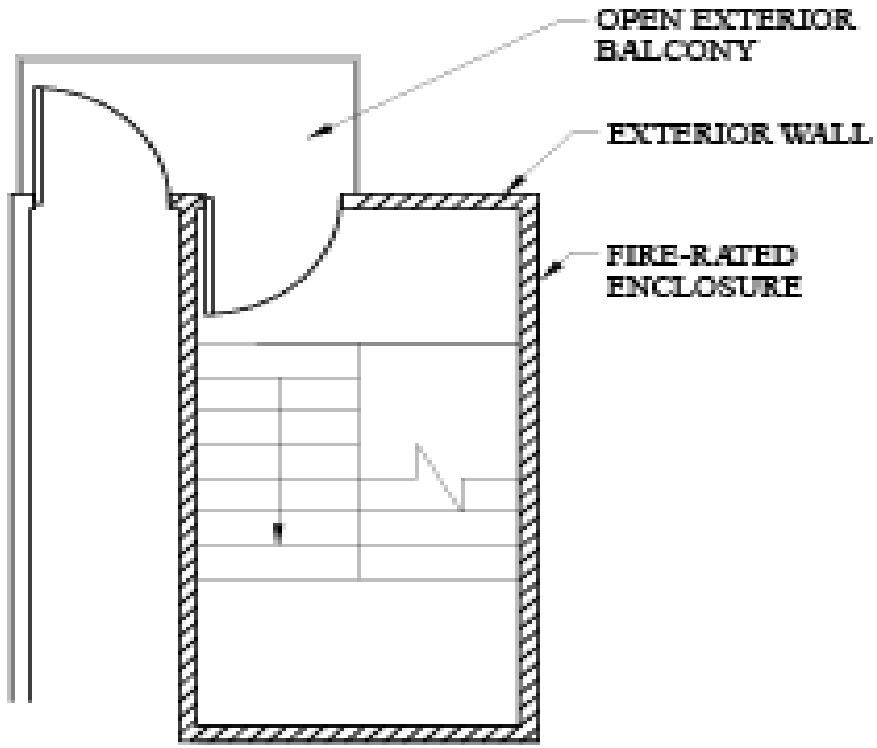
Post-fire Smoke Purge Systems (Section 912)

- Similar to 1968 code (with some exceptions for R-2)

Smokeproof Enclosures



NATURALLY VENTILATED
VESTIBULE



OPEN EXTERIOR BALCONY

Chapter 10 -Means of Egress

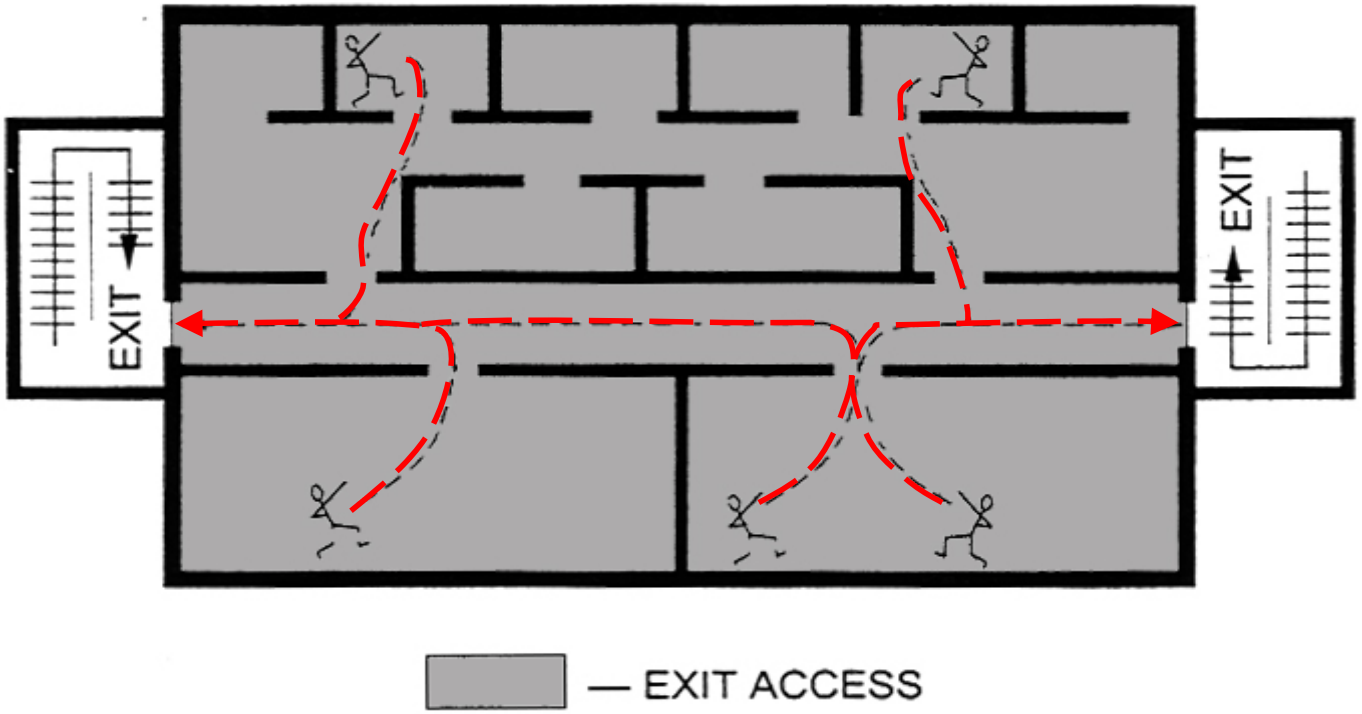
Means of Egress

A means of egress consists of three separate and distinct parts:

Exit Access
Exit
Exit Discharge

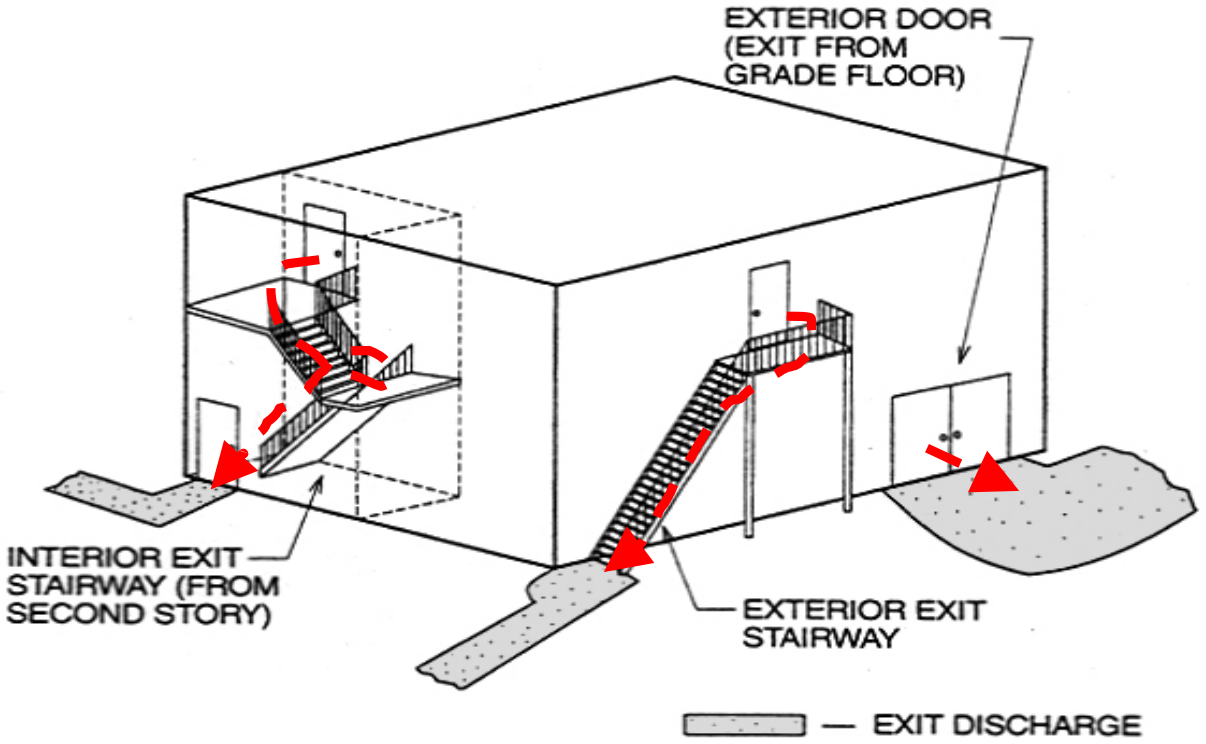
Exit Access (Section 1013)

- Begins at the furthest occupied point in a room and ends at the entrance to an *exit*
- The travel distance is regulated



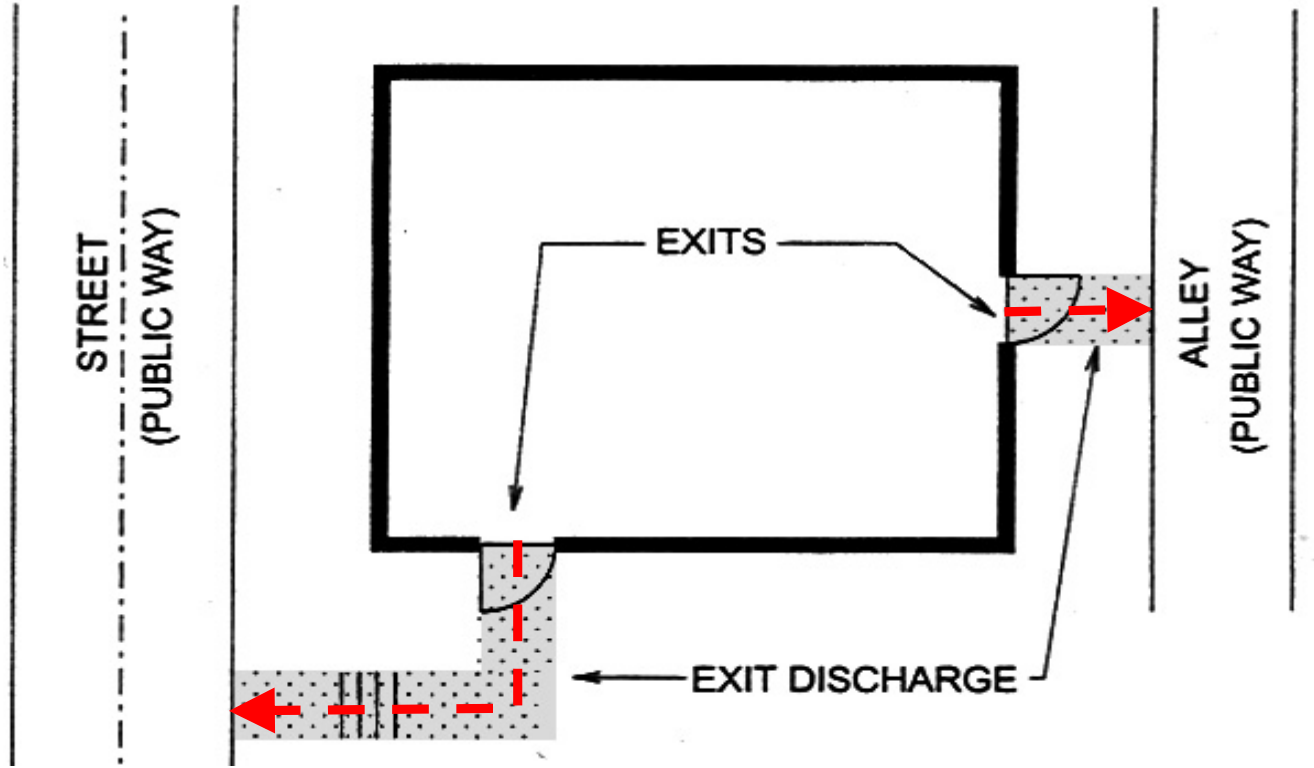
Exit (Section 1017)

- Provides a protected path of egress travel between the *exit access* and *exit discharge*
- Travel distance is generally not an issue within an *exit*



Exit Discharge (Section 1023)

- The portion between the *exit* termination and a public way
- Travel distance is not limited at and beyond the *exit discharge*



Occupant Load Calculation (Section 1004)

Table 1004.1.2:

- Lists maximum floor area per occupant based on occupancy classification
- Uses both gross and net floor area for various occupancies

For example:

- In Business occupancies: 100 Gross SF/occupant required
- In Assembly occupancies (without fixed seats): 7 Net SF/occupant required

Egress Width (Section 1005)

TABLE 1005.1
EGRESS WIDTH PER OCCUPANT SERVED

OCCUPANCY	Stairways (inches per occupant)	Other components (inches per occupant)
Occupancies other than those listed below	0.3	0.2
Hazardous: H-1, H-2, H-3 and H-4	0.7	0.4

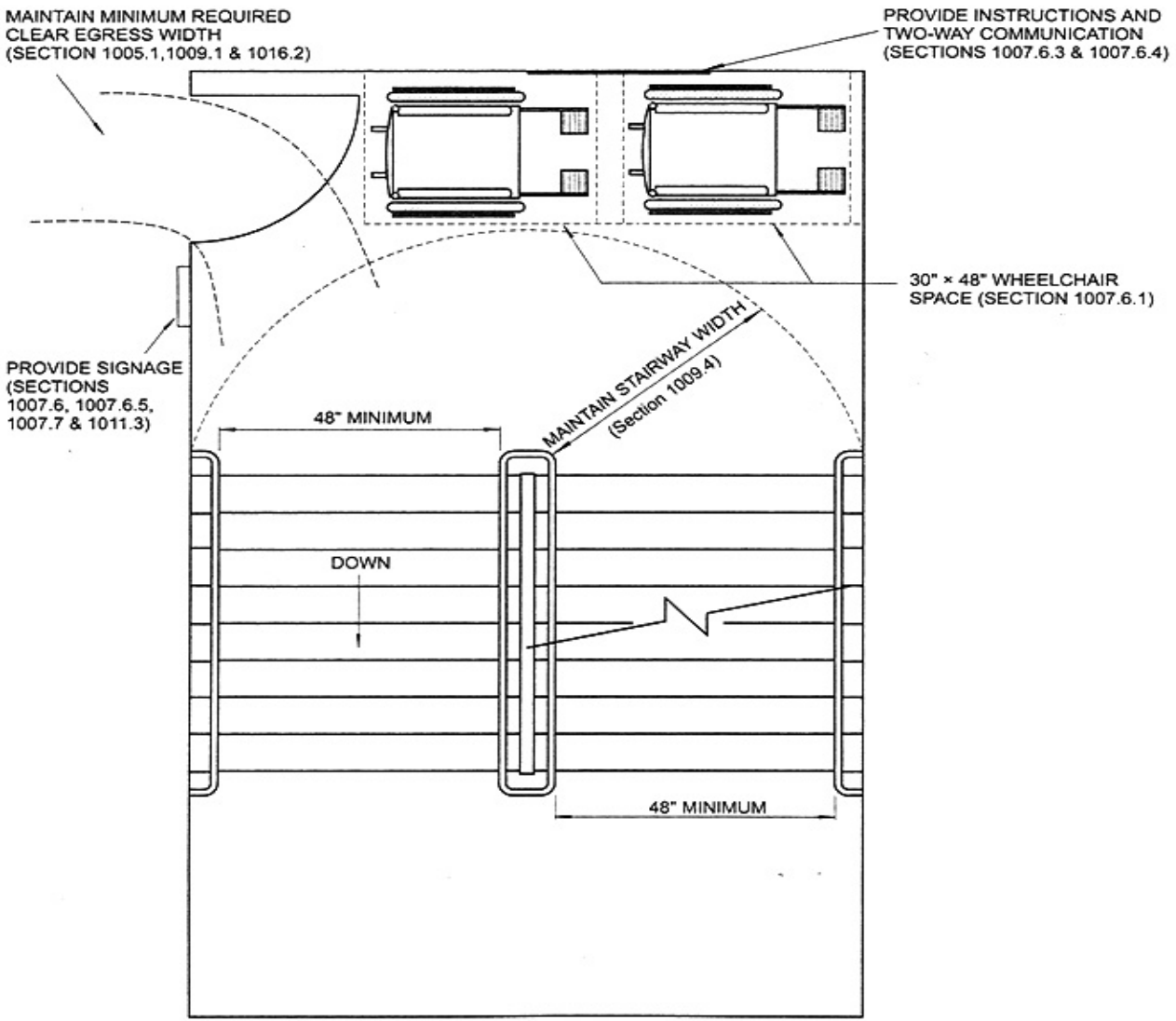
For SI: 1 inch = 25.4 mm

- Resulting figure cannot be less than that required elsewhere in the code

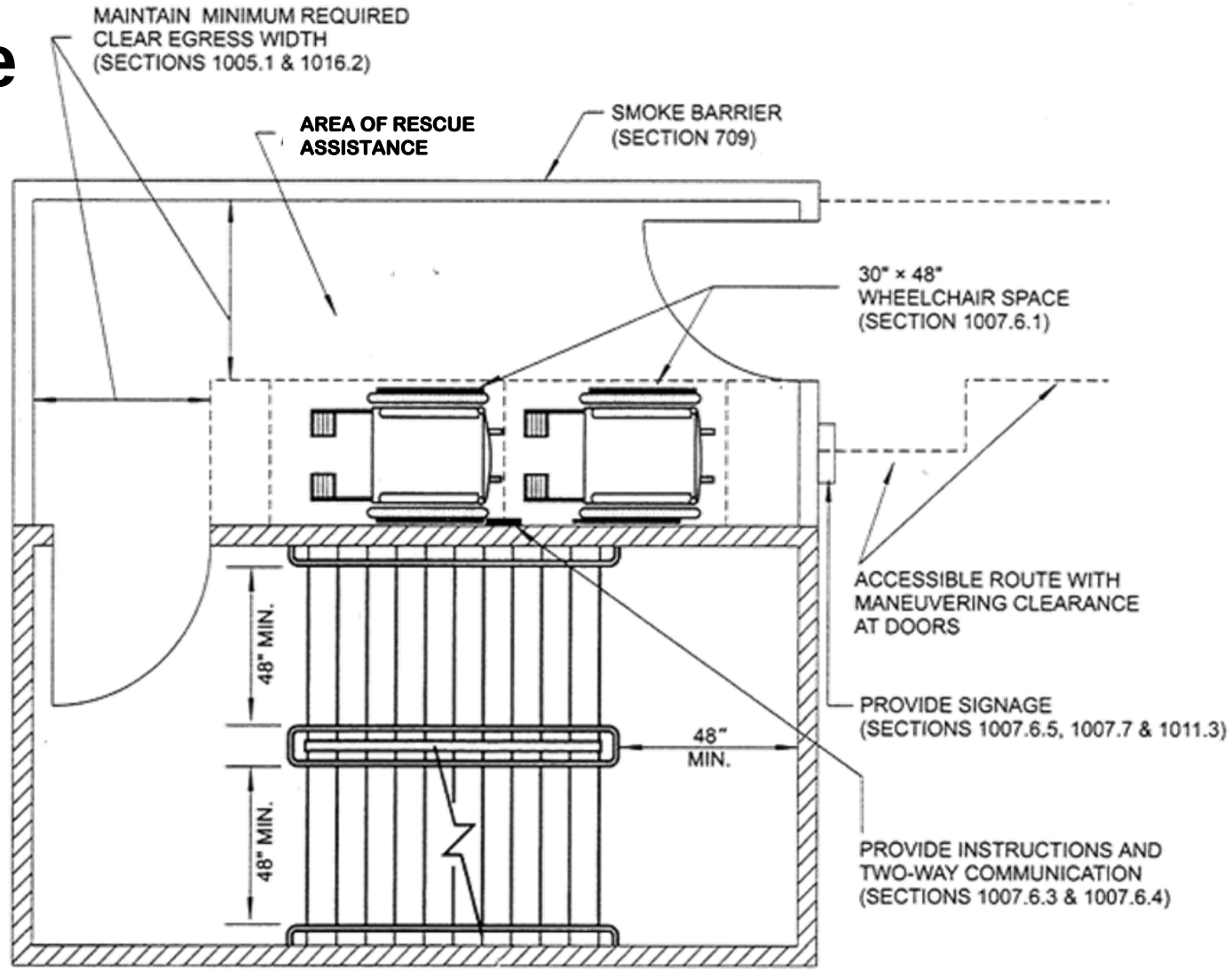
Accessible Means of Egress (Section 1007)

- At least 1 required in accessible spaces
- At least 2 required where there are 2 or more means of egress
- In high-rise: at least 1 must be an elevator with emergency power
- Area of rescue assistance required in non-sprinklered buildings with access from either an exit stairway (per 1007.3 & 1019.1) or an elevator (per 1007.4)

Area of rescue assistance within an exit enclosure



Area of rescue assistance adjacent to an exit enclosure



Stairway Width

Generally requires minimum 44” of width, 36” wide stairs only acceptable in:

- Stairways that handles 50 persons cumulative for all stories
- R-2 occupancies not more than 125’ high and each stairway serves < 30 occupants per floor

Treads and Risers

7” max. Risers
11” min. Treads

Exceptions for R-2 occupancies, R-2 dwelling units and R-3 residential occupancies

Emergency Escape and Rescue in All Group R Occupancies

At least 1 required in sleeping rooms below the 4th story above grade plane and below grade stories, unless the building is fully sprinklered

Dimensions:
Min. 30” high X minimum 24” wide, resulting dimension must be at least 6 SF

Interior Corridor vs. Public Corridor

Interior Corridor	Public Corridor
• Serves only one tenant • In group E occupancy, corridor serving one institution is considered *Interior Corridor*	• Serves more than one tenant
• Constructed as a *fire partition*	• Constructed as a *fire barrier*

Chapter 11 - Accessibility

Accessibility Laws

EQUAL HOUSING OPPORTUNITY

Fair Housing Act

Chapter 11 – Accessibility:

Design & construction of facilities for people with disabilities. ICC A117.1 – 2003 is the reference standard

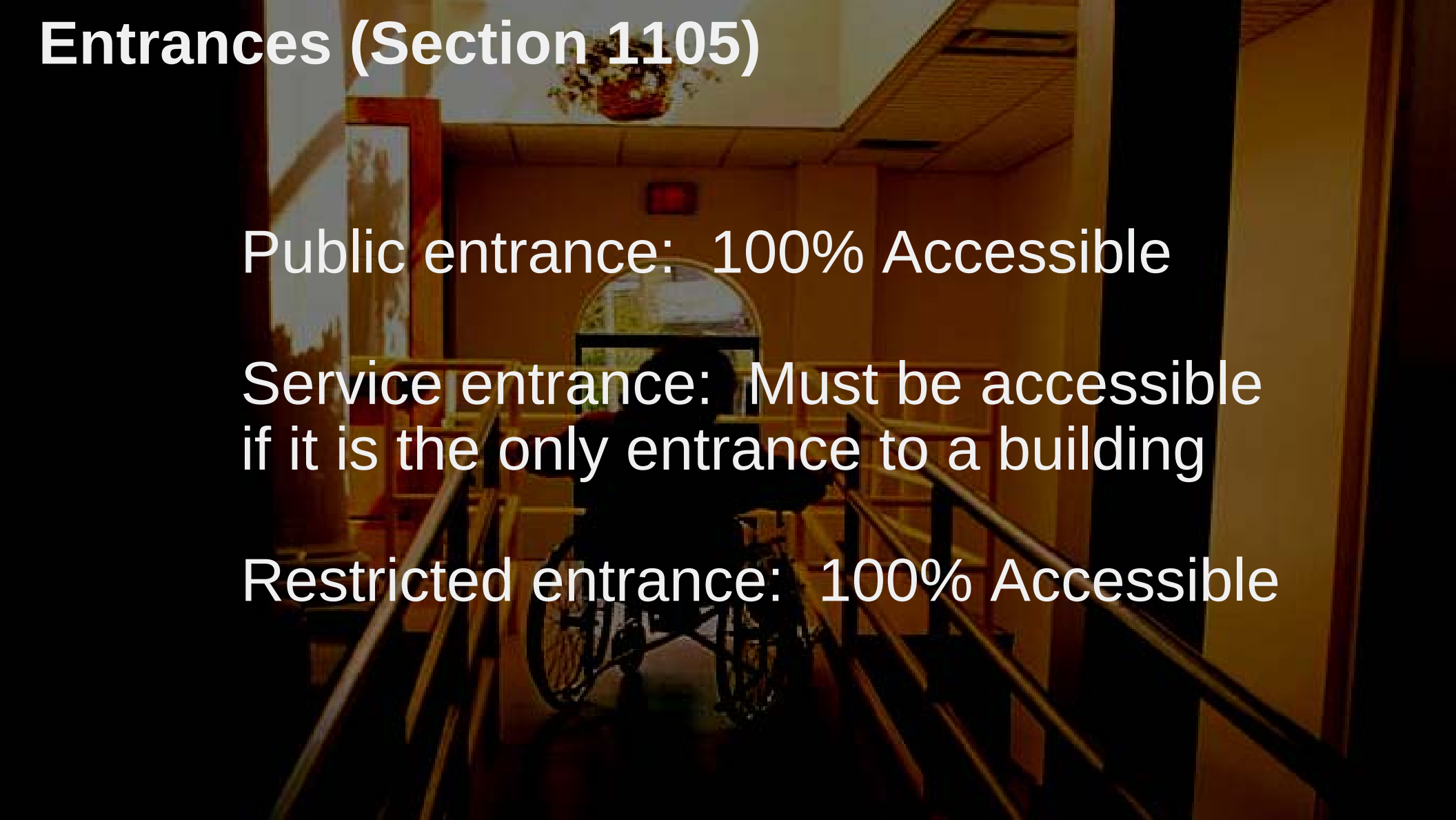
Appendix E – *Supplementary Accessibility Requirements*: Covers certain ADA and LL58/87 requirements not addressed in Chapter 11

Appendix N – *Assistive Listening Systems*: Specifications

Appendix P – *R2 Occupancy Toilet and Bathing Facilities Requirements*:

Specifications for toilet and bathing facilities in R-2 dwelling units

Entrances (Section 1105)



Public entrance: 100% Accessible

Service entrance: Must be accessible if it is the only entrance to a building

Restricted entrance: 100% Accessible

Accessible Parking (Section 1106)

- 5% accessible parking required
- Van accessible parking: 1 per 6 or fraction of 6 accessible spaces but not less than 1
- Hospitals and rehabilitation centers: higher number of accessible parking (10% & 20% respectively, equal to ADA)

Limited Use/Limited Application Elevator (LULA) (Section 1109.6)

In new construction limited to a rise of 25’, it can only be used:

1. In buildings < 10,000 SF, and an elevator is not required by Chapter 30, and that it serves not more than 3 contiguous floors
2. Where a wheelchair lift or a private residence elevator is permitted
3. Houses of worship

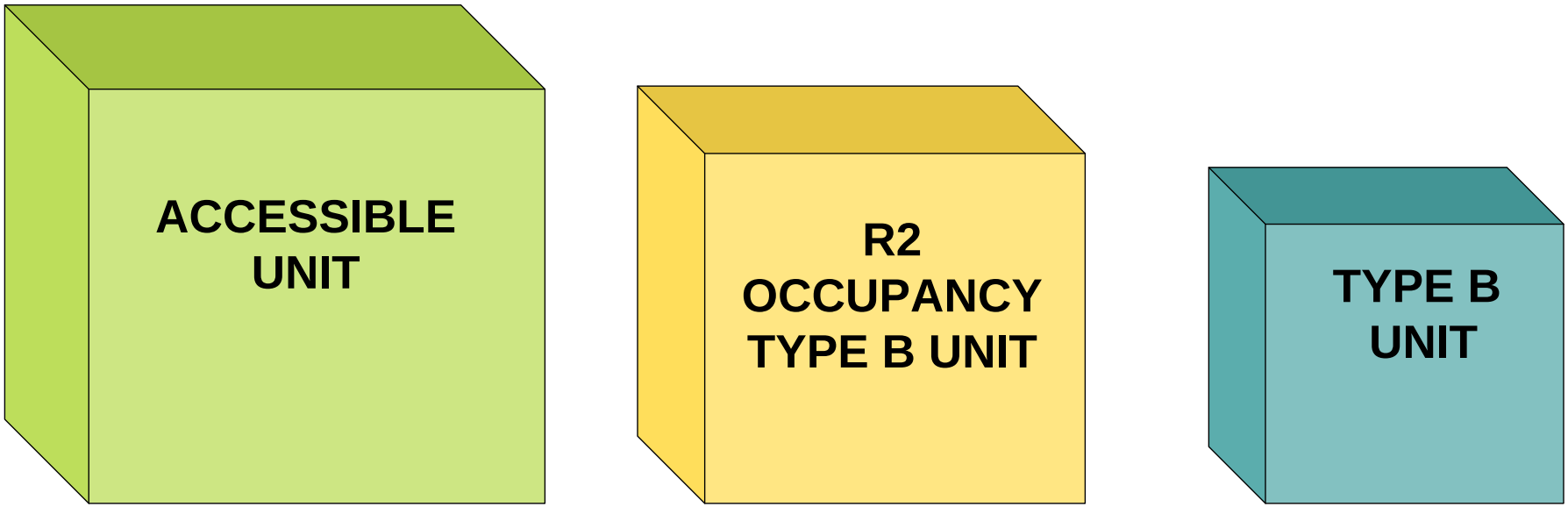
Wheelchair Platform Lifts (Section 1109.7)

Generally not permitted in New Construction *except* for:

1. Performance area in Group A
2. Wheelchair spaces in assembly area
3. Spaces not open to the public with no more than 5 occupants
4. Within dwelling units
5. Courtroom uses (interior only)

Residential Dwellings (Section 1107)

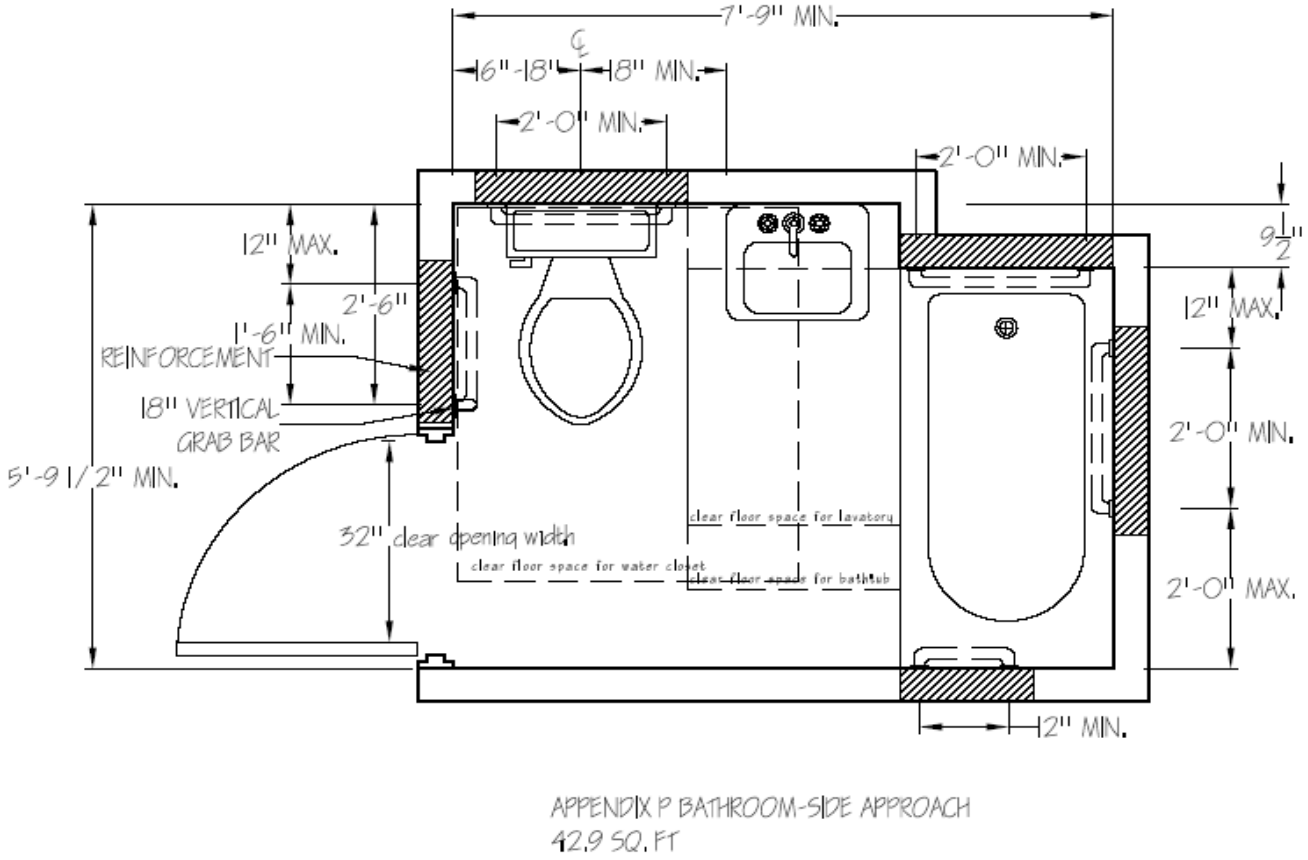
3 levels of accessibility that can be required in a dwelling/sleeping unit:



R-2 Occupancy Type B unit Toilet & Bathing Facilities (Section 1107.2.2)

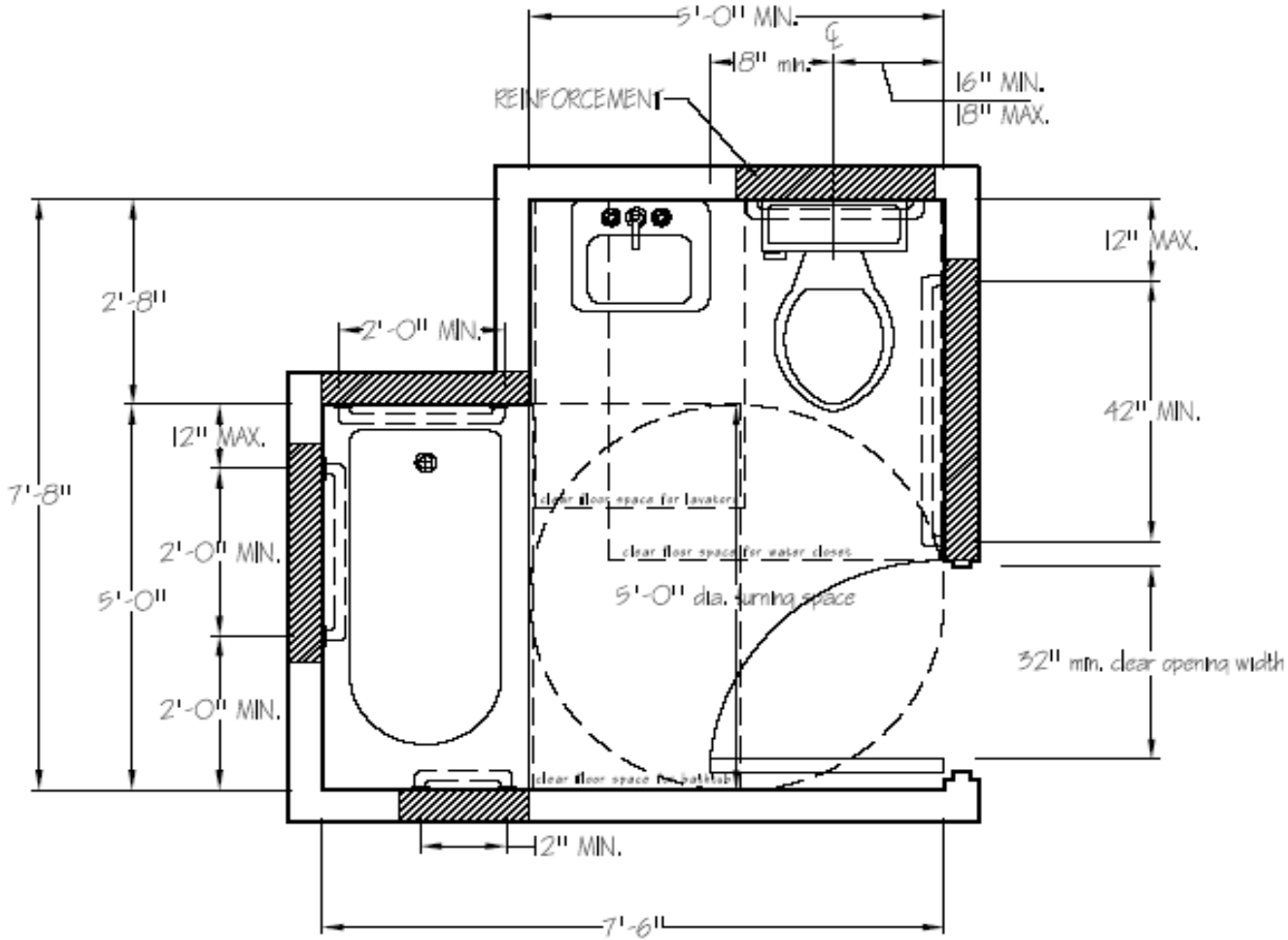
Appendix P Option	Type A Option
In this option, **ALL** toilet and bathing facilities, including powder rooms, must comply with the specifications outlined in Appendix P.	In this option, **AT LEAST ONE** bathroom must comply with Type A bathroom requirements in ICC A117.1-2003 Section 1003.11, including 5’-0” turning space. The remaining toilet and bathing facilities in the same unit, including powder rooms, are required only to provide certain adaptable features.

Sample Appendix P Bathroom



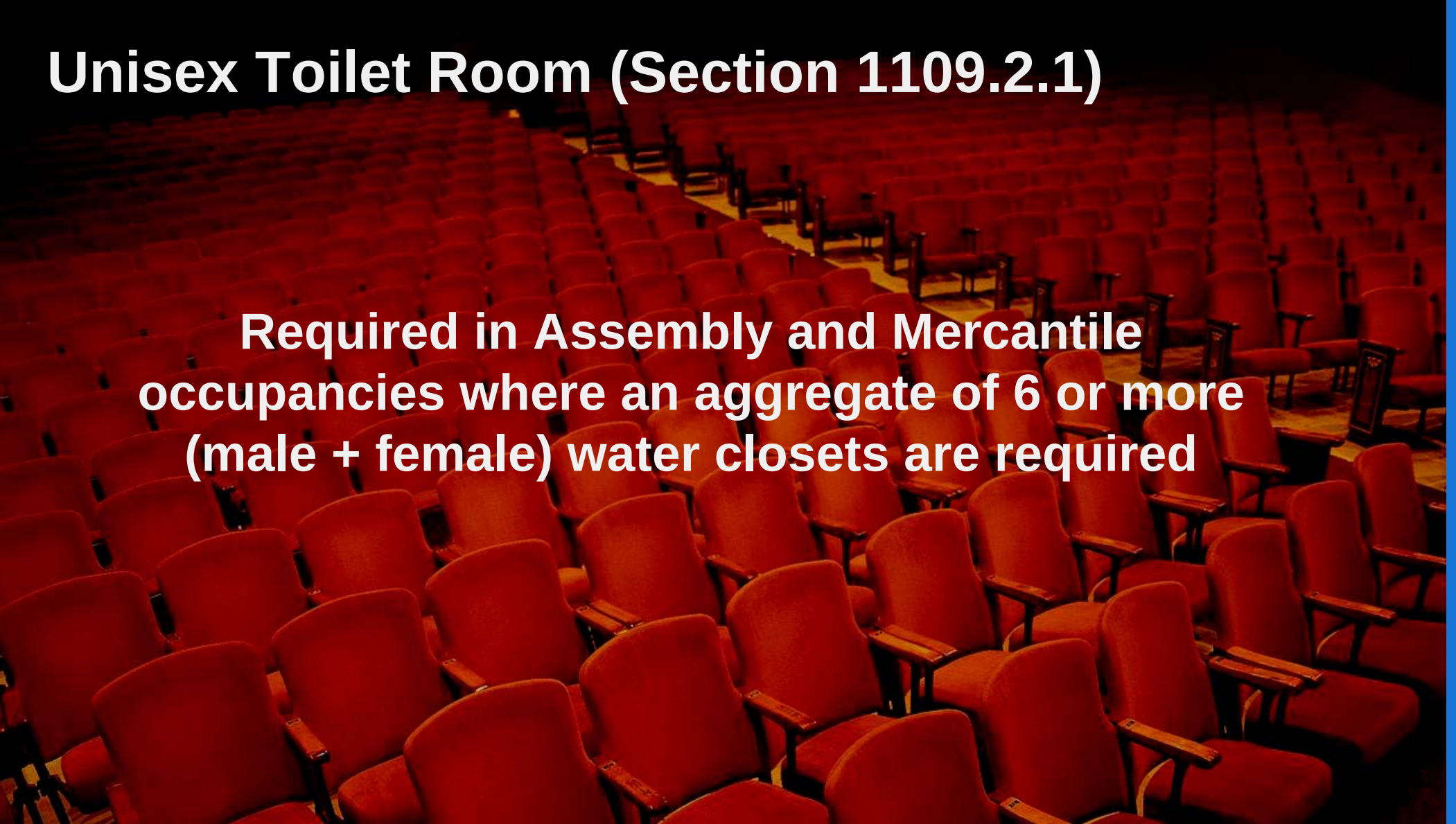
APPENDIX P BATHROOM-SIDE APPROACH
42.9 SQ. FT

Sample Type A Bathroom



TYPE A BATHROOM
50.8 SQ. FT.

Unisex Toilet Room (Section 1109.2.1)



Required in Assembly and Mercantile occupancies where an aggregate of 6 or more (male + female) water closets are required

Chapter 13 - Energy Efficiency

New York State Energy Conservation Construction Code

- NYS mandate, in effect 30 years, to be enforced by local jurisdictions
- There is one chapter for Residential occupancies (all 1- and 2-family dwellings and multiple dwellings 3 stories or less) and one for Commercial occupancies (everything else, including Residential 4 stories and higher)
- 2007 Version in effect

ECCCNYS Compliance Requirements

- Provide Professional Statement affirming compliance with the Energy Code
- Provide Energy Analysis sheet in drawing set
- Additional documents to support Energy Analysis
- More detail: http://www.nyc.gov/html/dob/html/reference/ecccnys.shtml

Chapter 16 - Structural Design

Chapter 16

Governs the structural design of buildings and structures.

- Based on:
  - ⇨ IBC 2003
  - ⇨ ASCE 7 "*Minimum Design Loads for Buildings and Other Structures*", 2002 edition
  - ⇨ New York City Model Code Committee, Structural/Foundation Subcommittee modifications

- Establishes General Design Methods: ASD Method & LRFD Method

- Provides minimum design loads, load combinations, and procedures.

  ⇨ Flood Loads (BC Appendix G)

  ⇨ Structural Integrity Loads

- Serviceability Limits (Deflection, Drift)

Structural Occupancy Category (Section 1604.5)

Based on Building Occupancy

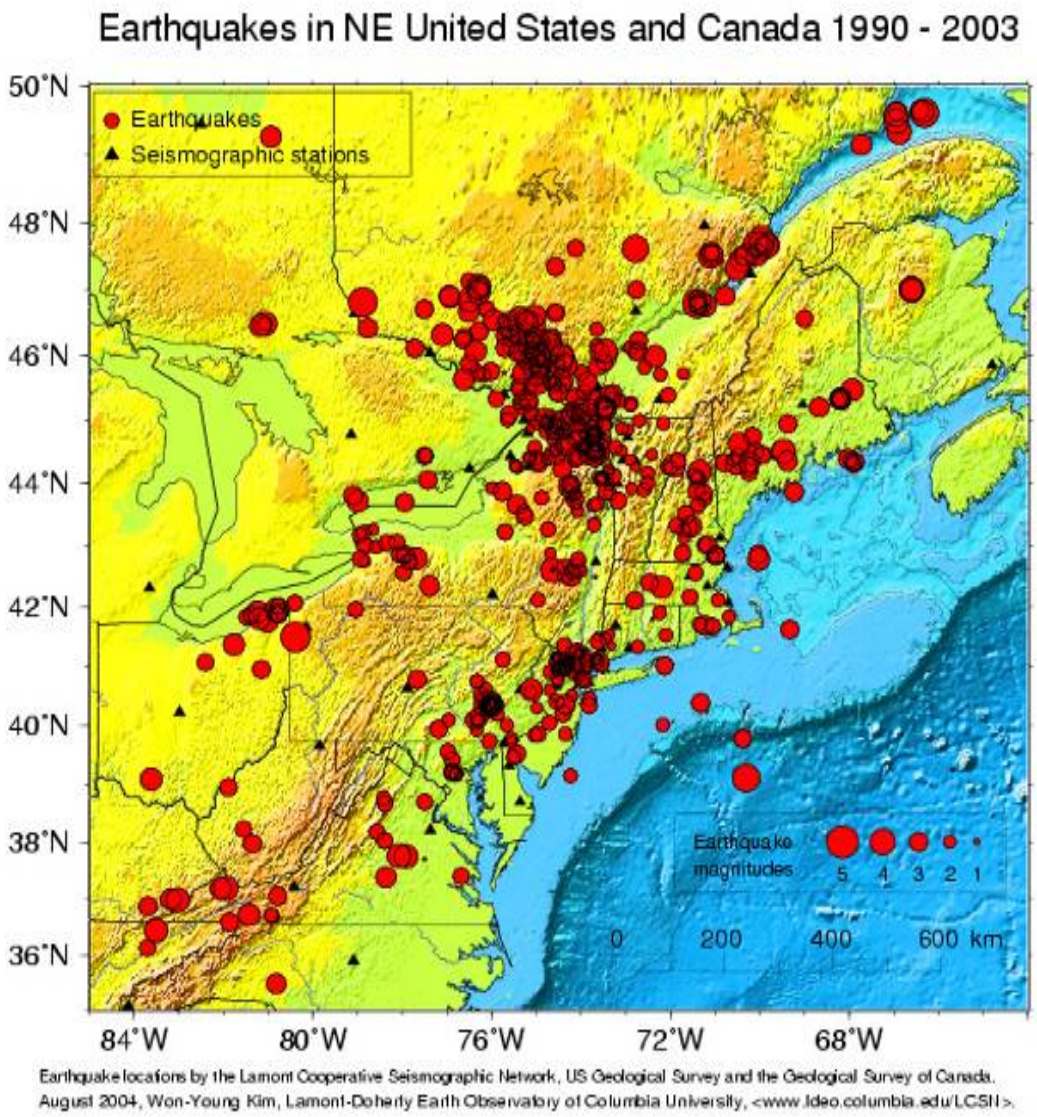
- **Category I** – Structures that present a substantially low hazard to human life in the event of failure
- **Category II** – Buildings not listed in Categories I, III, and IV
- **Category III** – Buildings that present a substantial hazard to human life in the event of failure
- **Category IV** – Essential Facilities: Facilities, Housing Fire, Police, and Emergency Response Personnel, Emergency Shelters

Snow Loads (BC 1608)

- Sliding snow from higher roofs with slopes
- Snow drift against parapets and higher roofs

Wind Loads (BC 1609)

- Exposure Categories – Measures exposure of building to wind from one direction
- Two Simplified procedures available for buildings based on height and location



Seismic Loads

Seismic Design Categories (SDC) assigned based on:

- United States Geologic Survey (USGS) 2002 Seismic Survey
- Soil/Rock Classification
- Structural Occupancy Category

Exemption retained for one- and two-family homes

SDC Determines

- Requirements for detailing of connections
- Maximum building heights for specific structural systems
- Minimum design forces for structural elements
- Seismic resistance requirements of non-structural components

Seismic Design Category (Based on NYCBC Minimum Values)				I & II	III	IV
Site Class		S_{DS}	S_{D1}	I	II	III
A	Hard Rock	0.195	0.038	B	B	C
B	Rock	0.243	0.047	B	B	C
C	Very dense soil and soft rock	0.292	0.080	B	B	C
D	Stiff soil profile	0.367	0.114	C	C	D
E	Soft soil profile	0.518	0.166	D[a]	D[a]	D
F	Site-specific analysis required					

Structural Occupancy Category

Seismic Use Group

Structural Integrity Provisions

Applicable to all buildings

- Vehicular Impact Design Load Requirement (Section 1625.5)
- High-Pressure Gas Explosion Design Load Requirement (Section 1625.6)
- Continuity and Ties Requirements

Courtesy of NIST

Key Element Analysis (Section 1626)

Required for:

- Buildings > 600’ tall or > 1,000,000 SF
- Essential Facilities > 50,000 SF
- Building with an Aspect Ratio 7 or greater
- Buildings > 7 stories where one structural member supports > 15% of the aggregate building area
- Buildings designed using non-linear time history analysis or utilizing special seismic energy dissipation systems (Base Isolation or Dampers)

Key Element Analysis (Section 1626)

Two Options:

- **Alternate Load Path Method:** Design to prevent a disproportionate collapse assuming a “Key Element” will fail due to an extreme event

- **Specific Local Resistance Method:** Design key elements for code prescribed loads

Structural Peer Review by a qualified independent structural engineer also required – Section 1627

Chapter 17 - Structural Tests and Inspections

Special Inspections

Substantially equivalent to 1968 Code's Controlled Inspections:

- Steel, concrete, soil, masonry, pile foundations, etc.

New Special inspections:

- Mechanical Demolition
- Seismic Isolation Systems
- Exterior Insulation Finish Systems (EIFS)
- Smoke control systems

Special inspections shall be performed by qualified Special Inspectors

Verification and Inspection	Continuous	Periodic	Referenced Standard	IBC Reference
1. Inspection of reinforcing steel, including prestressing tendons, and placement.	——	X	ACI 318:3.5, 7.1 – 7.7	1903.5, 1907.1, 1907.7, 1914.4
2. Verifying use of required design mix.	——	X	ACI 318: Ch. 4, 5.2-5.4	1904, 1905.2-1905.4, 1914.2,1914.3
3. Inspection of concrete and shotcrete placement for proper application techniques.	X	——	ACI 318: 5.9, 5.10	1905.9, 1905.10, 1914.6, 1914.7, 1914.8

Special Inspectors

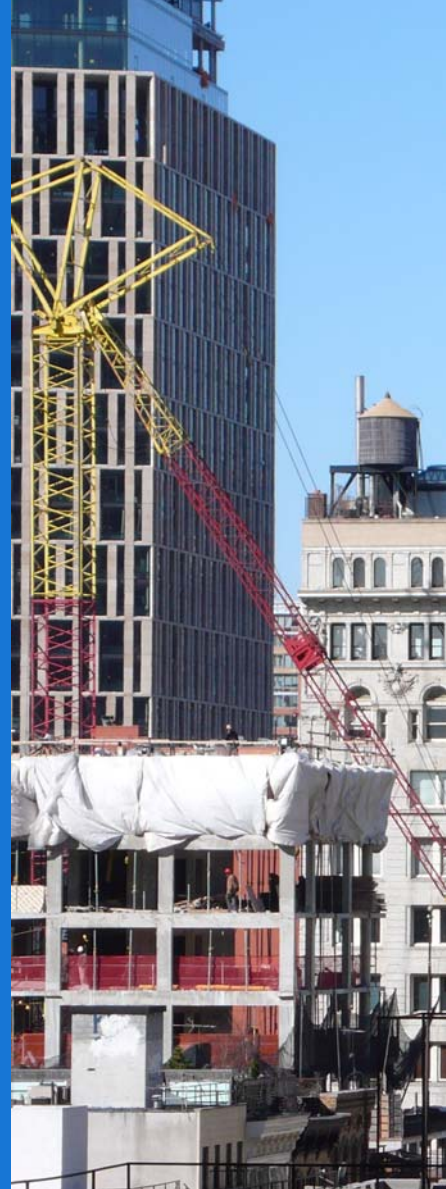
- Special Inspectors to be employed by Approved Agencies certified by the Department
- Special Inspectors shall be qualified for the specific task:
  - ⇨ Primary Inspector - Registered Design Professional with the appropriate qualifications based on:
    - ▫ Licensure (RA or PE in specific field)
    - ▫ Experience relevant to the inspection task
  - ⇨ Supplementary Inspectors - under the direct supervision of the Primary Inspector

Approved Fabricators

Approved Fabricators – can be certified by DOB as Approved Fabricators in lieu of providing special inspection at plant

⇨Approved Fabricators will be periodically inspected by approved agency

Concrete plants and Truck Drivers must be NRMCA certified



Chapter 33 - Safeguards During Construction or Demolition

General Requirements

- Covers the safety of the public and property during construction and demolition operations
- Mandated by July 1, 2008
- Replaces Subchapter 19 of the 1968 Code
- Updated Reference Standards
- Tenant Protection Plans requirements for repair and alteration operations in occupied buildings codified

Excavations

Department & Adjacent Property Owner Notification

- Notification required at least 24 hours in advance, but no more than 48 hours prior to commencement of certain earthwork operations
- Notification to Adjacent Property Owners are required in writing at least 10 days in advance of certain earthwork operations

Protection of Adjacent Property - Responsibility

- Person causing excavation or fill to be made is now responsible for protection of adjacent property regardless of depth of excavation

Protection of Adjoining Property (BC 3309)

Pre-condition surveys of adjoining properties are required for:

- Excavations between 5 and 10 feet deep within 10 feet of an adjacent building
- All excavations > 10 feet deep

Adjacent property access:

If adjacent property owner refuses to permit developer to protect the adjacent property, adjacent property owner is made responsible for protection and can be issued violations for failing to do so

Demolition (BC 3306)

Categories

Full Demolition – the dismantling, razing, or removal of all of a building or structure, and all operations incidental thereto.

Partial Demolition - the dismantling, razing, or removal of structural members, floors, interior bearing walls, and/or exterior walls or portions thereof, including all operations incidental thereto.

The demolition safety requirements apply whenever any demolition operations are being performed, regardless of the permit type issued

Department and Adjacent Property Owner Notification (BC 3306.3)

Notification to the Department at least 24 hours in advance, but not more than 48 hours prior to commencing either full or partial demolition operations

Written notice to Adjacent property owners at least 10 days in advance of full or partial demolition operations

- **Exception:** Partial interior demolition operations, where only hand-held mechanical demolition equipment is used

Mechanical Demolition

The use of mechanical demolition equipment, other than hand-held equipment, in full and partial demolition operations

- Construction documents shall be filed by a registered Professional Engineer

- Mechanical Partial and Full Demolition within the building are subject to Special Inspection

Site Safety Plan, Program and Designation of Site Safety Manager or Coordinator

Required for major buildings:

- New Construction
- Full Demolition
- Façade Alterations needing a sidewalk shed
- Partial Demolition

⇨ **Exception:** Interior Partial Demo using only hand tools

Major Buildings (Section 3310)

New NYC Construction Code (Building Code Section 3310.2)	Current NYC Building Code (Rules and Regulations Chapter 26 Appendix A)
1. 10 or more stories, or 2. 125 feet or more in height, or 3. 100,000 ft^2 or more of lot coverage regardless of height, or 4. Any other building as designated by the commissioner	1. 15 or more stories, or 2. 200 feet or more in height, or 3. 100,000 ft^2 or more of lot coverage regardless of height, or 4. Any other building as designated by the commissioner

	New Building, Full Demolition	Partial Demolition	Façade Alteration requiring a sidewalk shed	Interior Partial Demolition with no Mechanical Equipment
Major Buildings: **•15 Stories or more,** **•200’ or more,** **•100,000 SF or more**	Site Safety Manager	Site Safety Manager	Site Safety Manager	N/A
Major Buildings: **•Less than 15 stories, &** **•Less than 200’, &** **•Less than 100,000 SF**	Site Safety Manager/ Site Safety Coordinator	Site Safety Manager/ Site Safety Coordinator	N/A	N/A

Visit our Website: www.nyc.gov/buildings E-mail: ConstructionCodes@buildings.nyc.gov

The New NYC Construction Codes.
The Foundation for a Safe, Sustainable NYC.

This concludes The American Institute of Architects Continuing Education Systems Program

AIA Point of Contact: Allison Ginsburg allisongo@buildings.nyc.gov 212-566-4415