

# **WCBC & Existing Buildings**

## **AIA Southwest WI Chapter**

### **CSI – Madison WI Chapter**

#### **14 October, 2008**

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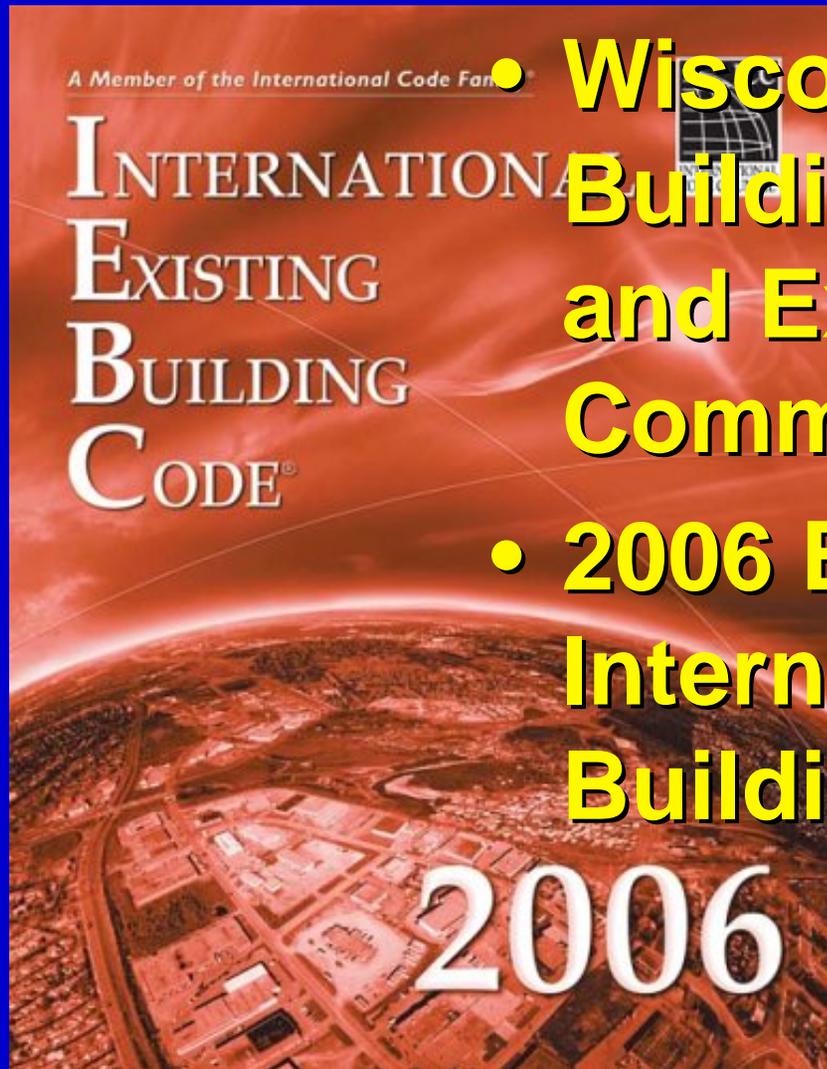
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**Program Manager**

**(608) 266-0251 – [Jim.Smith@wi.gov](mailto:Jim.Smith@wi.gov)**

# What Is the Session About?

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- **Wisconsin Commercial Building Code [WCBC] and Existing Commercial Buildings.**
- **2006 Edition of the International Existing Buildings Code [IEBC]**

# What's in the "new" WCBC

Soil Erosion

Ch. Comm 60

Administration

Ch. Comm 61

Building

Ch. Comm 62

Energy

Ch. Comm 63

Mechanical

Ch. Comm 64

~~Fuel Gas~~

~~Ch. Comm 65~~

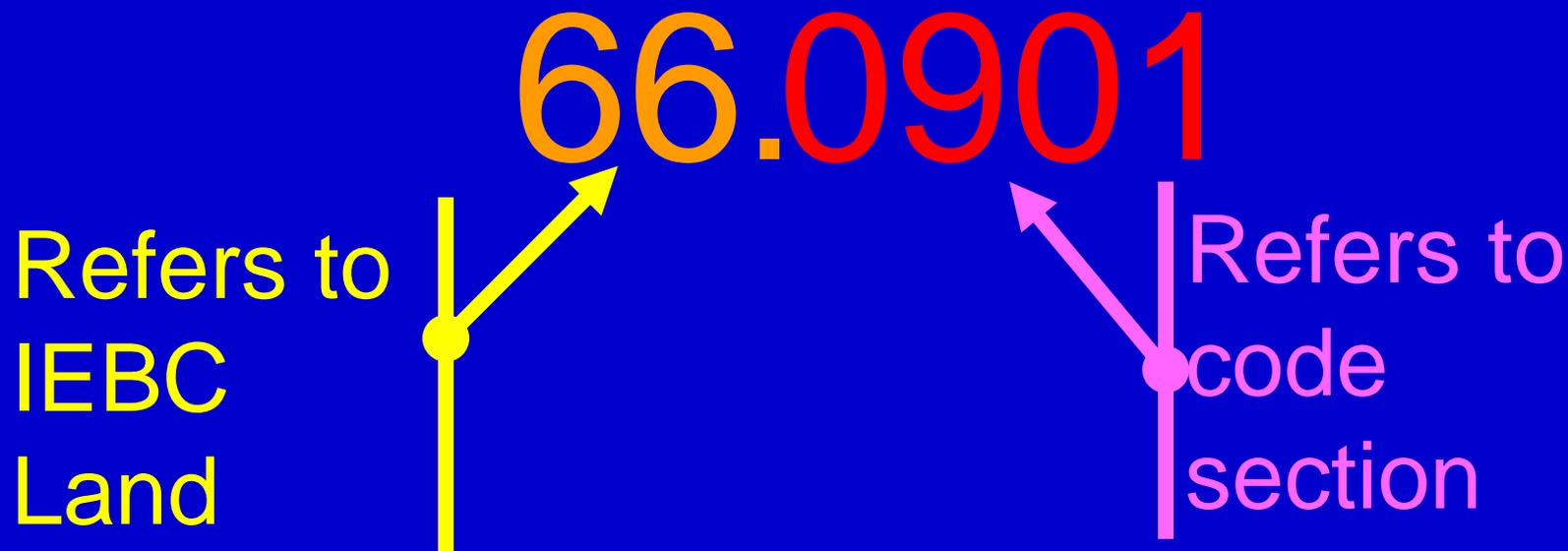
Existing Building

Ch. Comm 66

# WCBC Navigating Wisconsin Modifications

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- Deciphering the Numbering of  
Adm. Rule Ch's Comm 62 - 66

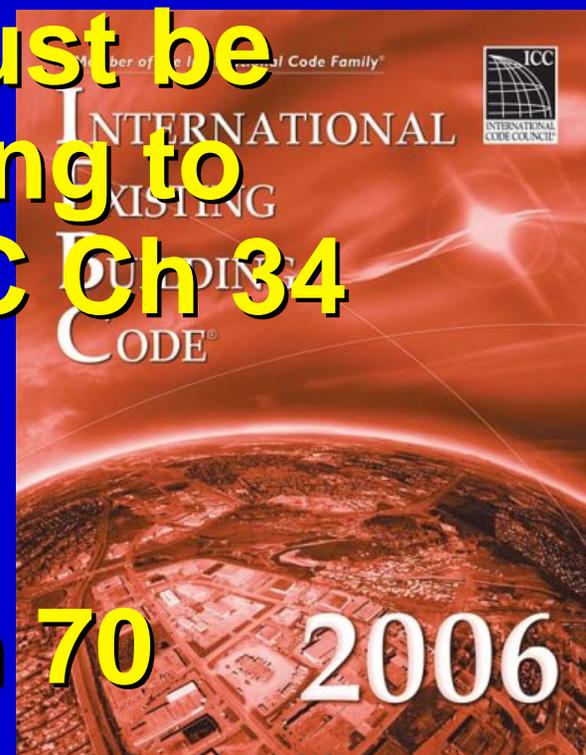


# WCBC Updates

# Changes to the Exist'g. Bldg. part of WCBC – USE IEBC

- As indicated earlier, the IEBC [Comm Chapter 66] must be used for all work relating to existing buildings. IBC Ch 34 is dropped.

- Dropped the Historic Buildings code, Comm 70 2006



# WCBC/Exist'g Bldg. [IEBC] (cont.)

- Ch 2 – Definitions
- ~~Ch 3 – Presc. Compl. Methods~~
- Ch 4 – Classification of Work
- Ch 5 – Repairs
- CH 6, 7 & 8 – Altn's (Lev 1, 2 & 3)
- CH 9 – Change of Occupancy

# **WCBC/Exist'g Bldg. [IEBC] (cont.)**

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- **Ch 10 – Additions**
- **Ch 11 – Historic Buildings**
- **Ch 12 – Relocated/Moved Bldgs**
- **Ch 13 – Perf. Compl. Methods**
- **CH 14 – Construction Safegaurds**
- **CH 15 – Referenced Standards**

# IEBC Ch 2 Definitions

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**Chapter 2 includes 21 definitions, but several are more significant than others**

- **Change of Occupancy . . .**
- **Primary Function . . .**
- **Work Area . . .**

# Def. – Change of Occupancy

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**CHANGE OF OCCUPANCY. A change in the purpose or level of activity within a building that involves a change in application of the requirements of this code.**

# Def. – Primary Function

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**PRIMARY FUNCTION.** A primary function is a major activity for which the facility is intended. Areas that contain a primary function include, but are not limited to, the customer services lobby of a bank, the dining area of a cafeteria, the meeting rooms in a conference center, as well as offices and other work areas in which the activities of the public accommodation or other private entity using the facility are carried out. Mechanical rooms, boiler rooms, supply storage rooms, employee lounges or locker rooms, janitorial closets, entrances, corridors and restrooms are not areas containing a primary function.

## **Def. – Work Area**

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**WORK AREA.** That portion or portions of a building consisting of all reconfigured spaces as indicated on the construction documents. Work area excludes other portions of the building where incidental work entailed by the intended work must be performed and portions of the building where work not initially intended by the owner is specifically required by this code.

# Chapter 4

## Classification of Work

- Repair
- Alteration-Level 1
- Alteration-Level 2
- Alteration-Level 3
- Addition
- Change of occupancy
- Relocated or moved buildings
- (Qualified) Historic Buildings

**What am I doing?**

# *Important Realization!*

*More than one classification will  
generally exist for a given project!*

# Section 401 - General

- **401.1 Scope.** ... used in conjunction with Ch 5 – 12 and explains how to apply the IEBC to alterations, repairs, additions and changes of occupancy that happen to existing structures...



# Section 401.2 Work area.

- ...Work area is that portion [or portions] of a building consisting of all reconfigured spaces indicated on the construction documents.



A Workbook for the International Code Family  
**I**  
INTERNATIONAL  
**B**  
BUILDING  
**C**  
CODE

## **Section 401.3 Occupancy and use.**

- ... Use Chapter 3 of the IBC to determine the occupancy and use within an existing building

**2006**

# Section 402.1 Repairs

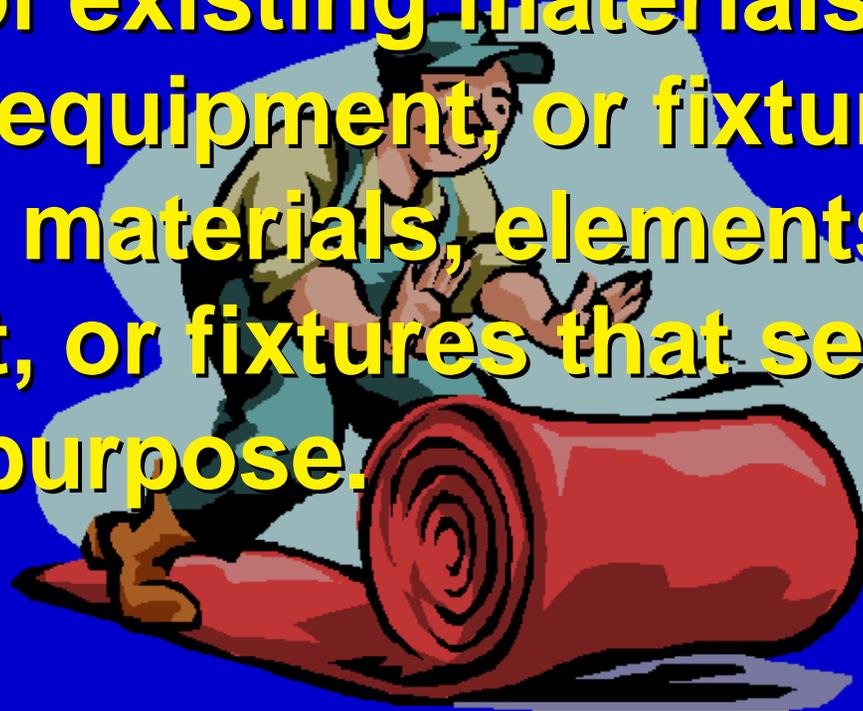


- Repairs are the restoration to good or sound condition of any part of an existing building for the purpose of its maintenance.



# Section 403 Alteration – Level 1

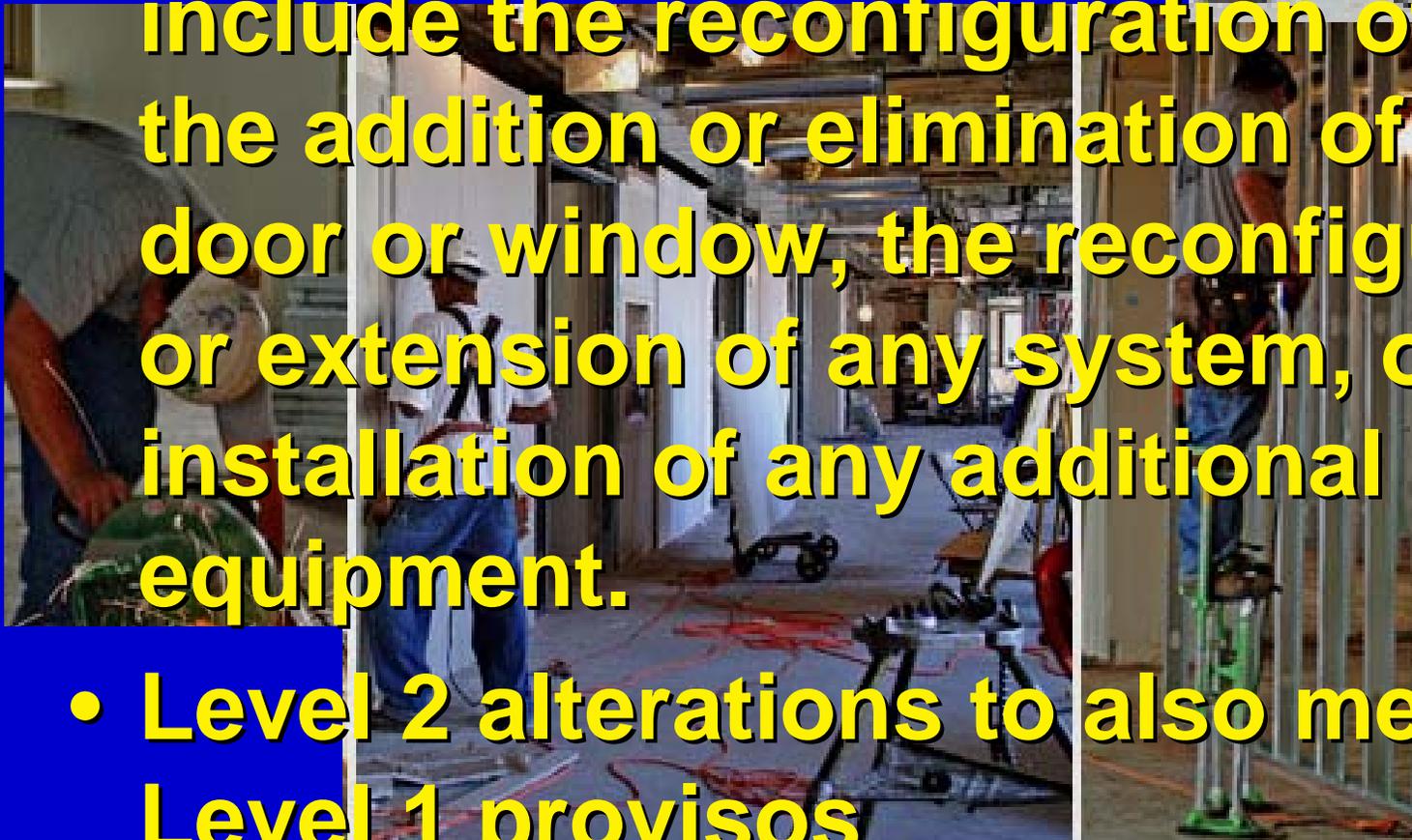
- **403.1 Scope: Level 1...the removal and replacement of the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose.**



# Section 404

## Alteration – Level 2

- **404.1 Scope:** Level 2 alterations include the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment.
- Level 2 alterations to also meet the Level 1 provisos



# Section 405

## Alteration – Level 3

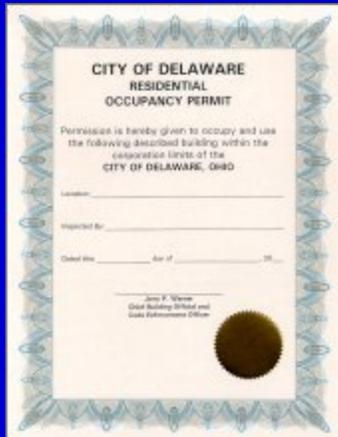
- **405.1 Scope:** Level 3 alterations apply where the work area exceeds 50 percent of the aggregate area of the building.
- Level 3 alterations must also meet the provisions for Level 1 and 2 alterations



# Section 406

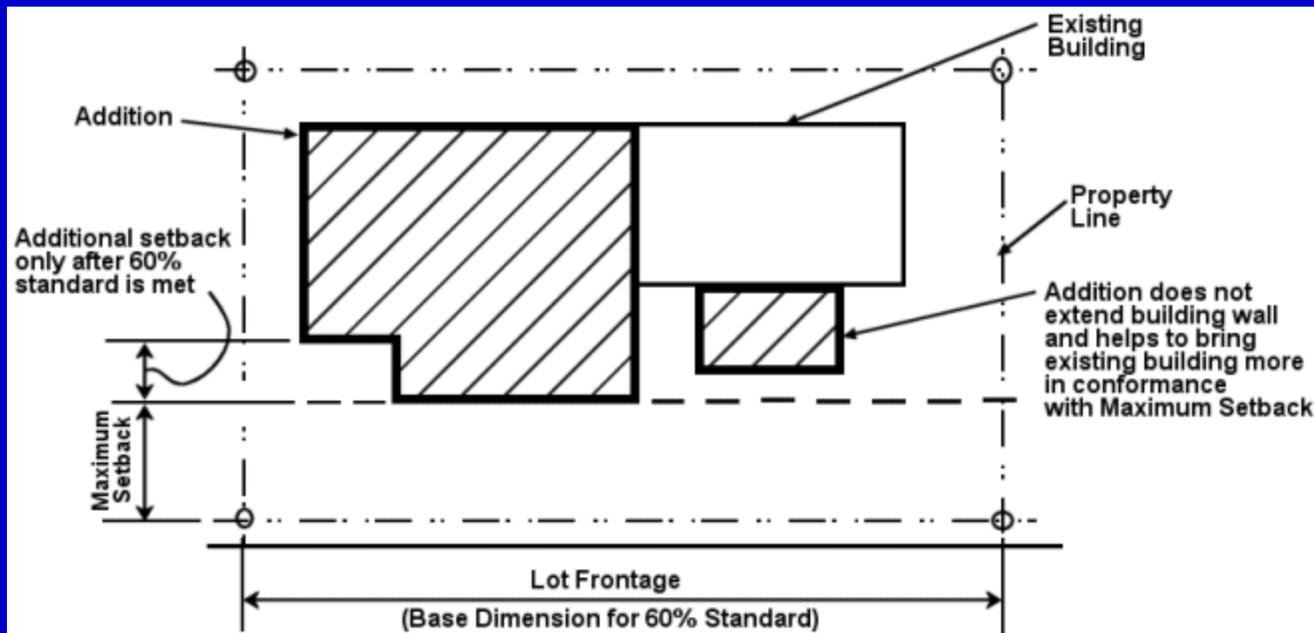
## Change of Occupancy

- **406.1 Scope - Change as defined in Ch 2...purpose or level of activity within a building that involves a change in application of the requirements of this code.**



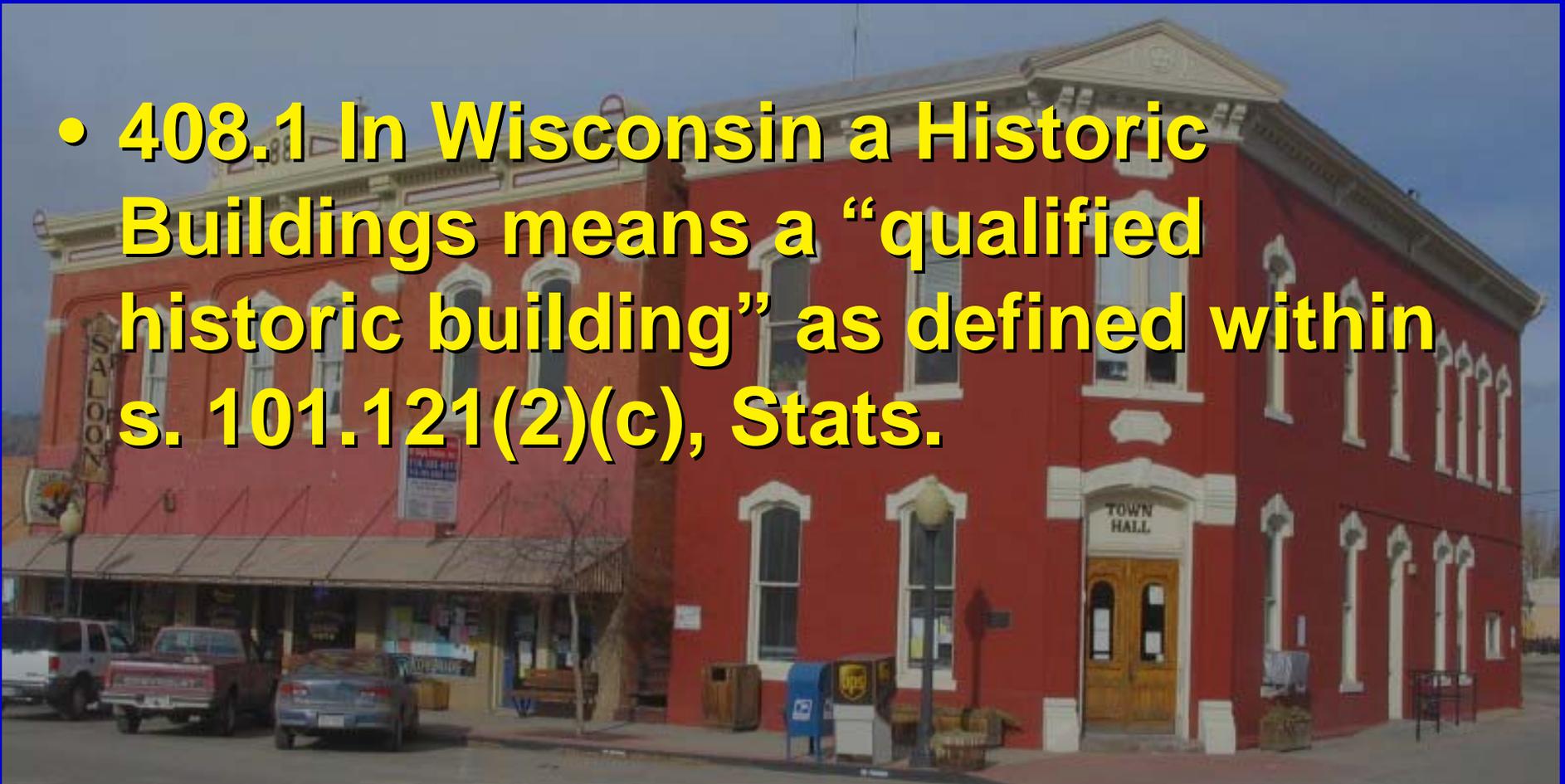
# Section 407 Additions

- 407.1 Scope Provisions for additions ... an extension or increase in floor area, number of stories, or height of a building.



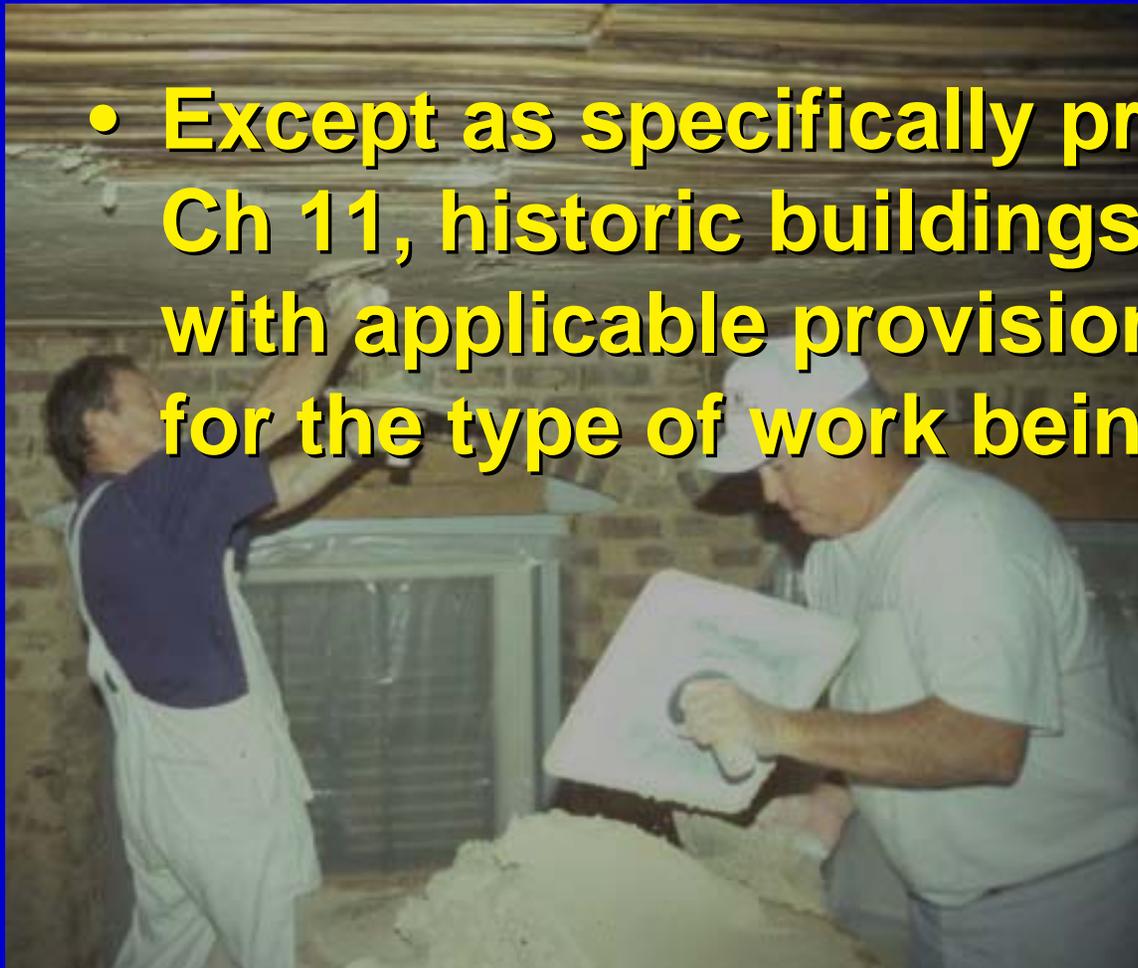
# Section 408 Historic Buildings

- 408.1 In Wisconsin a Historic Buildings means a “qualified historic building” as defined within s. 101.121(2)(c), Stats.



# Section 408.2 Application

- Except as specifically provided for in Ch 11, historic buildings are to comply with applicable provisions of this code for the type of work being performed.



# Section 409 Relocated Buildings

- 409.1 Scope: Existing Commercial Buildings that are relocated or moved buildings will follow Ch 12



# **IEBC Ch 5 - Repairs**

- **SECTION 501 GENERAL**
- **SECTION 502 BUILDING ELEMENTS AND MATERIALS**
- **SECTION 503 FIRE PROTECTION**
- **SECTION 504 MEANS OF EGRESS**
- **SECTION 505 ACCESSIBILITY**
- **SECTION 506 STRUCTURAL**
- **SECTION 507 ELECTRICAL**
- **SECTION 508 MECHANICAL**
- **SECTION 509 PLUMBING**

# IEBC Ch 5 - Repairs

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- **Approach**

- **With a few specific exceptions, repairs may be made with like or similar materials, even if those materials are no longer permitted by the International Codes®**



# IEBC & WCBC/IBC Ch 15 Reroofing

- Repairs [IEBC Ch 5] & Alterations [IEBC Ch 6]
- For Repairs, use materials that are the same as being repaired, or use the materials as permitted by the IBC [IEBC s. 501.2].

# WCBC/IEBC Reroofing (cont.)

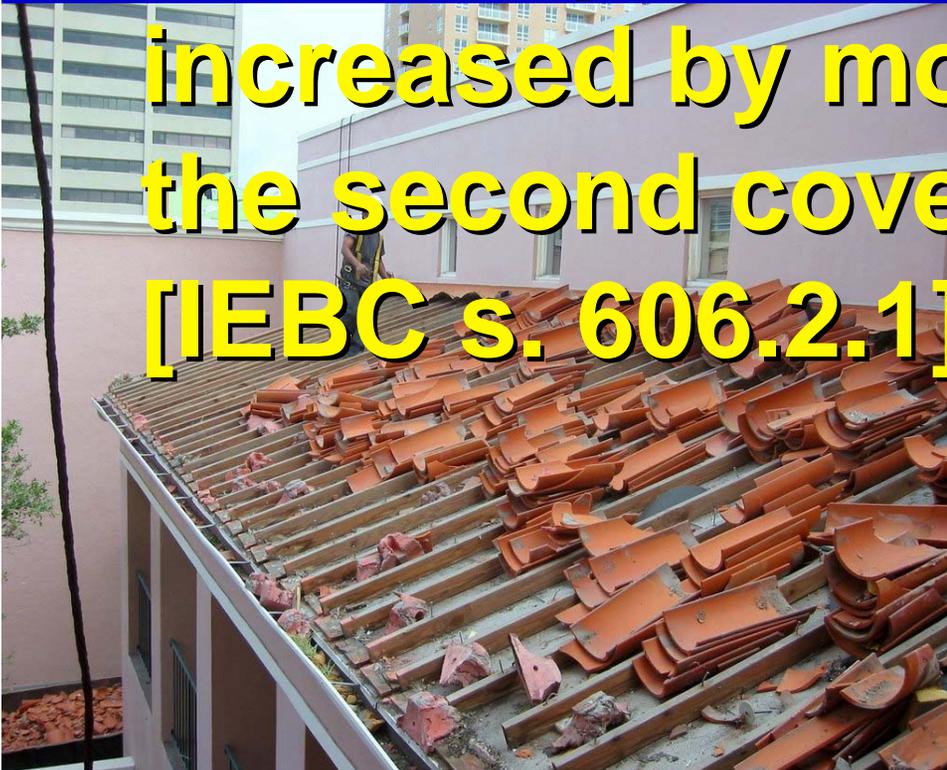
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- Reroofing - Altns [IEBC Ch 6]
- Use the same materials as permitted by the IBC [IEBC s. 602.3].



# WCBC/IEBC Reroofing (cont.)

- Reroofing - Altns [IEBC Ch 6]
- Regarding Structural, remember the exceptions when the DL is not increased by more than 5% or if the second cover is less than 3# [IEBC s. 606.2.1]



# WCBC/IEBC Reroofing (cont.)

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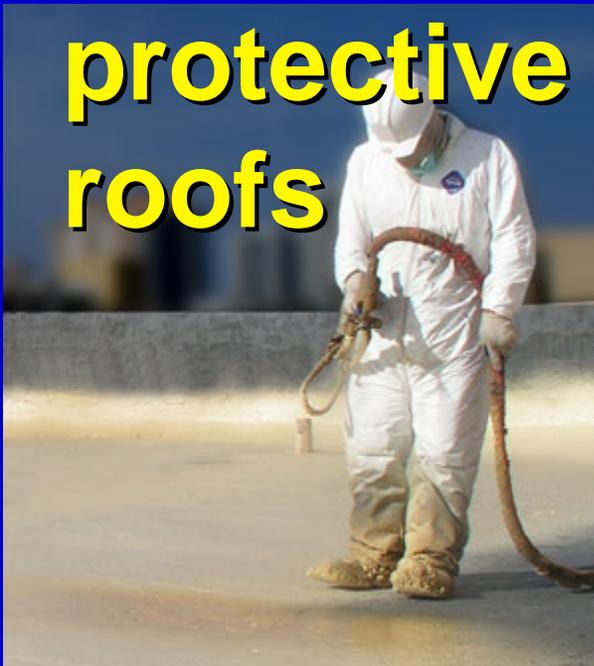
- **The Reroofing must meet the energy conservation [IECC] requirements of the WCBC [Comm 66.0607] except where the roof is not exposed and the energy use of the building is not increased.**

# WCBC/IBC Chapter 15

## Noteworthy Changes

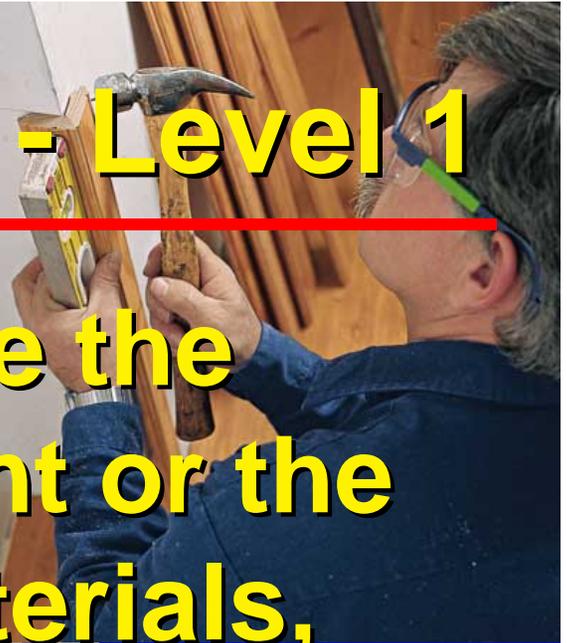
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- **1510 Reroofing – Added an exception to the tear off restriction – Will not have to tear off a new protective coating on spray foam roofs**



# IEBC Ch 6 Alterations - Level 1

Level 1 alterations include the removal and replacement or the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose.



# IEBC Ch 6 - Level 1 Alt's (cont)

Level 1 alterations are commonly the type of minor alteration being referred to in Comm 61.30(4). Plan submittal may not be needed.



# **IEBC Ch 6 - Level 1 Alt's (cont)**

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**Direction Given on subjects of:**

- **Bldg elements/Matl's [602 & WI]**
- **Fire Protection [603]**
- **Means of Egress [604]**
- **Accessibility [605]**
- **Structural [606]**
- **Energy Cons'n [607 & WI]**

# Section 605.1 Accessibility

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- **Altered Buildings are to comply with the applicable provisions in Section 605.1.1 through 605.1.12, chapter 11 of the IBC and ICC A117.1... “unless technically infeasible”. In which case... “to the maximum extent feasible”.**
- **...access to be maintained during occupancy.**

# Section 605.1 Accessibility

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## Four Exceptions...

1. The Altered Element or space is not involving a primary function or affecting the accessible route to a primary function
2. IBC Accessible Means of Egress not required in existing buildings

# Section 605.1 Accessibility



## Four Exceptions (cont'd)...

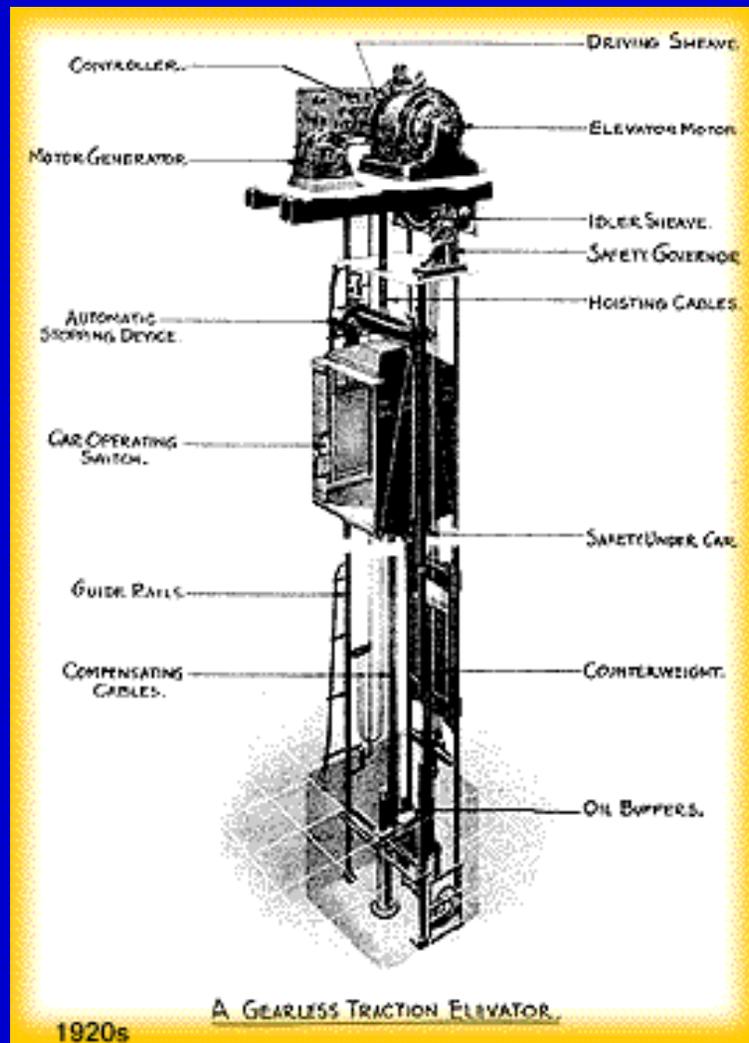
3. Type B DU's/sleeping units need not be provided within existing buildings
4. When altering a Type A individually Owned DU's within an R-2, the unit needs to meet Type B provisions of IBC Ch. 11 & ICC ANSI A117.1.

# Section 605.1.1 Entrances

...when altering an entrance and the building already has an accessible entrance on an accessible route, the altered entrance need not be made accessible unless called for by s. 605.2 ...[Alterations Affecting an Area Containing a Primary Function.]



# Section 605.1.2 Elevators



...altered elements shall comply with ASME A17.1 and ICC/ANSI A117.1...

## Section 605.1.3 Platform Lifts

**...complying with ICC A117.1 and installed in accordance with ASME A18.1 shall be permitted as component of accessible route.**



# Section 605.1.4 Ramps

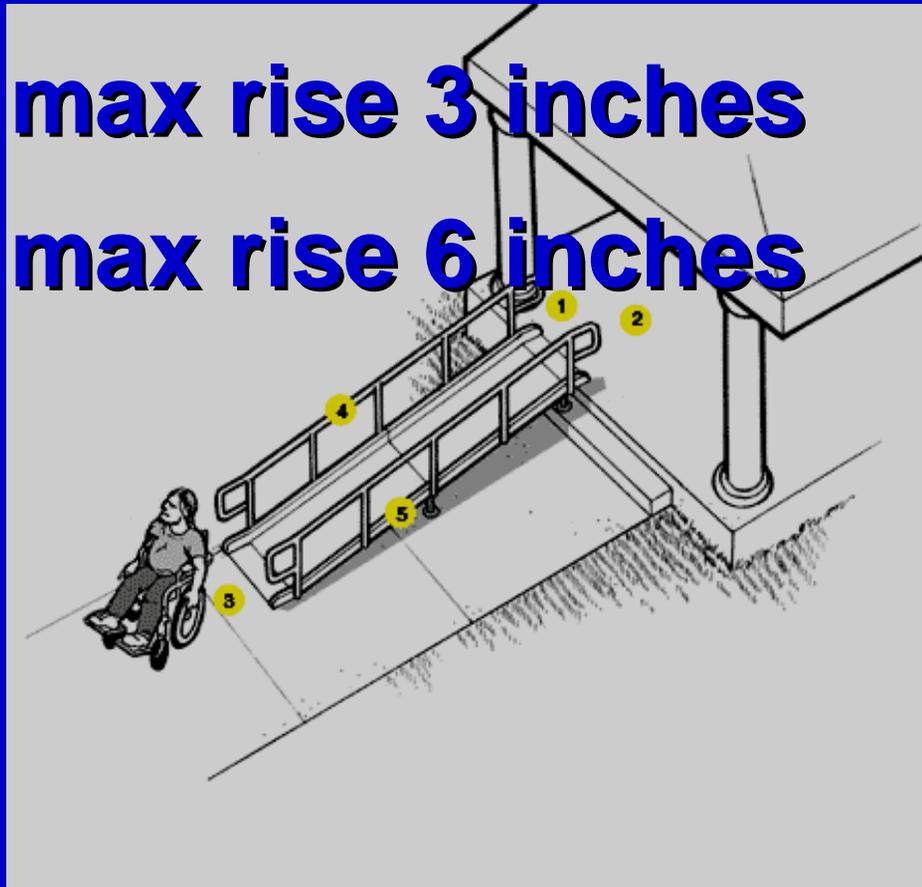
...steeper than allowed in IBC  
1010, reference table 605.1.4...

1:10 – 1:8

max rise 3 inches

1:12 – 1:10

max rise 6 inches



# Section 605.1.5 Dining Areas



...access NOT required to raised or sunken dining areas or outdoor seating areas provided the same service and decor is provided in an accessible space.

# Section 605.1.6

## Performance Areas

**...where technically infeasible to alter performance areas...at least one of each type shall be made accessible.**



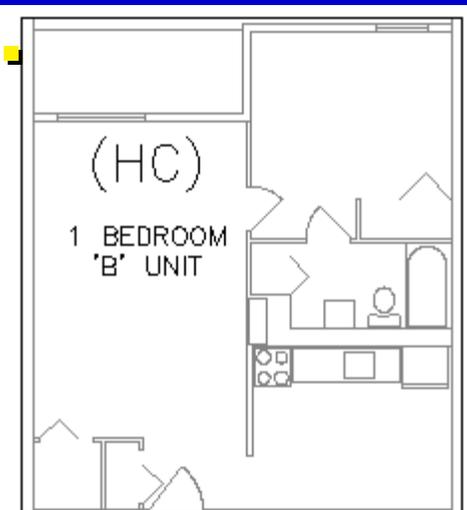
# Section 605.1.7 Jury boxes

**...access not required within defined area of jury or witness stand where ramp or lift poses a hazard or restricts egress.**



# Section 605.1.8 Dwelling Unit

When altering I-1, I-2, I-3, R-1, R-2 or R-4 . . . provisos of IBC 1107 for Accessible or Type A units and alarm provisos of IBC Ch. 9 apply only to the quantity of the spaces being altered.



# Section 605.1.9 Toilet Rooms

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**...technical infeasibility will permit the unisex toilet room on the same floor in the same area...**



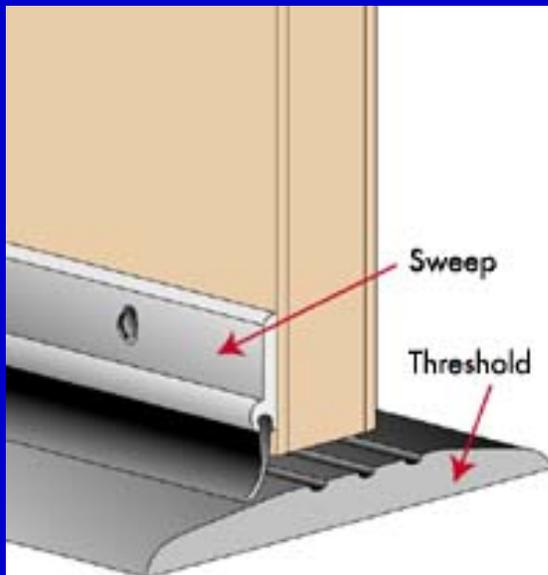
# Section 605.1.10 Fitting Room

**...technical infeasibility will permit one accessible room on same floor in same area permitted...  
When fitting rooms provided for separate sex, each to have access as well.**



# Section 605.1.11 Thresholds

...3/4" maximum height with  
beveled edges.



# **Section 605.1.12 Extent of Application ...**

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**... Not to impose requirement for greater accessibility than that required for new construction**

**... Conversely, not to reduce accessibility.**

# **Section 605.2 Alterations Affecting Areas of Primary Function**

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**...access to or areas containing a primary function...that route shall be accessible.**

**Exceptions...**

- Disproportionate cost - 20%**
- Alts to windows, hardware, controls, etc.**
- Alts to syst's like mech, elect, fire, etc**
- alterations to increase accessibility**

# Section 606 - Structural

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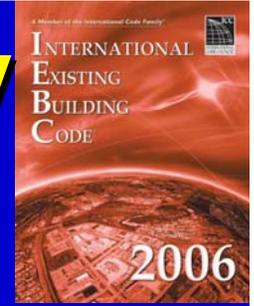
- **In some cases, work on roofs can demand improving the roof structure or more analysis.**
- **Where the added DL is more than a 5% increase**
- **Previously mentioned second layer of roof covering that is up to 3 PSF**

# Structural & Roof (cont)

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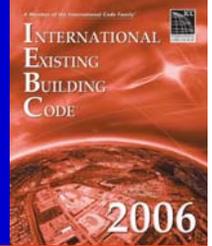
- **Make sure masonry parapets are braced if bldg. is Seismic Des. Category D, E, or F**
- **If the re-roofing requires more than a 50% tear-off, evaluate the deck diaphragm for deterioration . . . Repair as needed**

# Exist'g Bldg's & Energy Conservation



- [Comm 66.0607] Addn's, altn's, or repairs are to conform to the provisos of the IECC as they relate to new construction without requiring the unaltered portions of the existing building or building system to comply.
- The work cannot create an unsafe/hazardous cond'n or overload existing building systems.
- **NOTE THE EXCEPTIONS . . . .**

# Comm 66.0607 (cont)

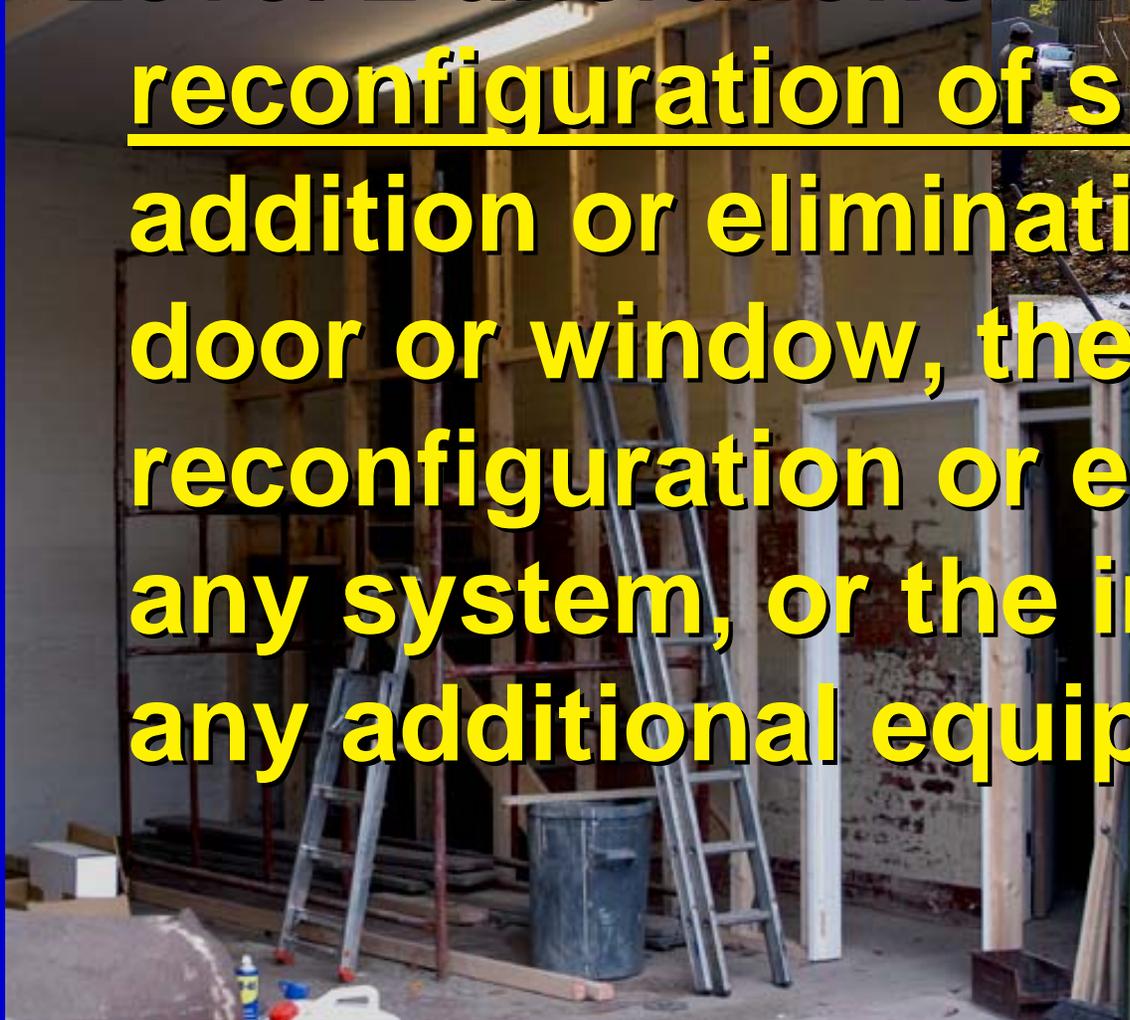


- **THE EXCEPTIONS.** The following items do not have to comply as long as the energy use of the bld'g is not increased:
- Storm windows over exist'g windows.
- Glass replacement in an existing sash & frame.
- Exist'g ceiling/wall/floor cavities exposed during construction as long as the cavities are already insulated.
- Construction where the existing roof, wall or floor cavity is not exposed.

# IEBC Ch 7 Alterations - Level 2

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Level 2 alterations include the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment.



# Chapter 7

## Alterations - Level 2

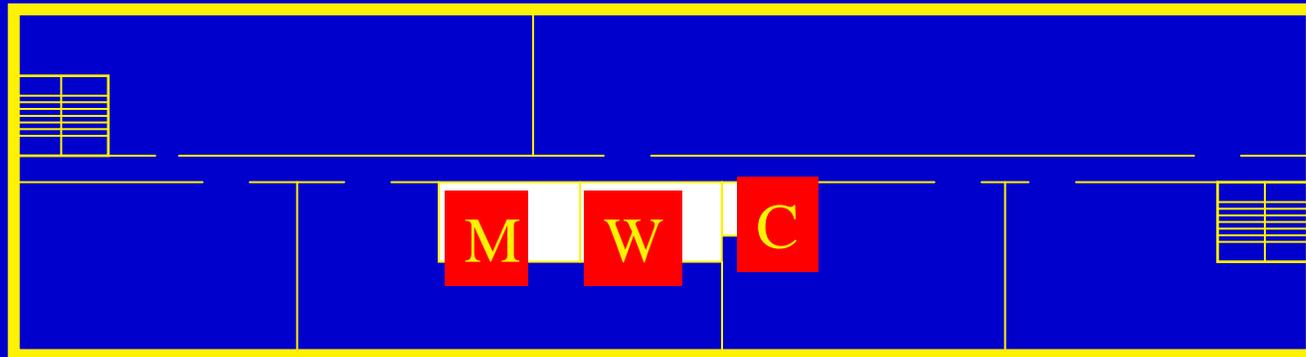
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### Example

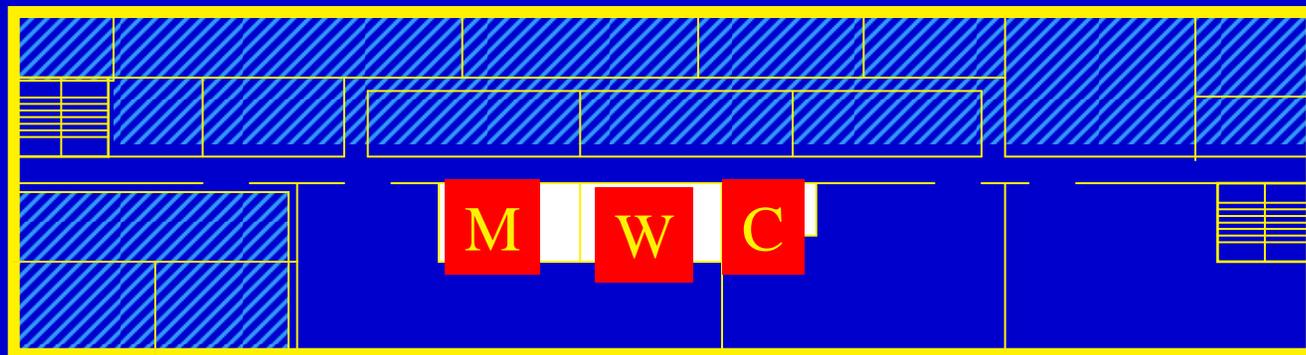
- A rearrangement of 3 tenant spaces results in reconfiguration of 60% of the 1<sup>st</sup> floor. There are no alterations taking place on the second floor of the building.
- The reconfigured work area is only 30% of the buildings total area. Stays at Level 2 !

# Chapter 7 Altn's - Level 2

## Example (cont)



Existing First Floor



Proposed First Floor

# Chapter 7

## Alterations - Level 2

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### **A DIFFERENT Example:**

- An existing building can be reused by the owner without rearranging any of the existing spaces but will need to add/subtract/move around some of the existing doors and windows**
- Even though there is no reconfigured work area associated with the project, it's still at Level 2 !**

# IEBC Ch 7 - Level 2 Alt's Direction

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**Direction Given on subjects of:**

- **Special Use/Occ'y [702]**
- **Build'g Elements/Matl's [703 & WI]**
- **Fire Protection [704]**
- **Means of Egress [705]**
- **Accessibility [706]**

# IEBC Ch 7 – Direction (cont)

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- **Structural [707]**
- **Electrical [708]**
- **Mechanical [709 & WI]**
- **Plumbing [710 & WI]**
- **Energy Cons'n [711 & WI]**

# IEBC Ch 8 Alterations-Level 3

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Level 3 provisions come into play where the work area (the area that has been reconfigured – see definition s. 202) exceeds 50% of the aggregate area of the building.



# Chapter 8 Altn's - Level 3 Example

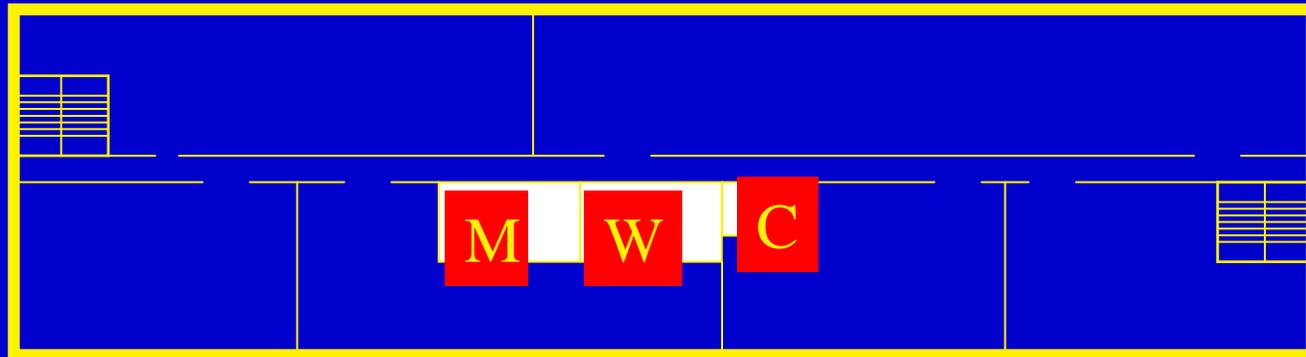
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## Application Example

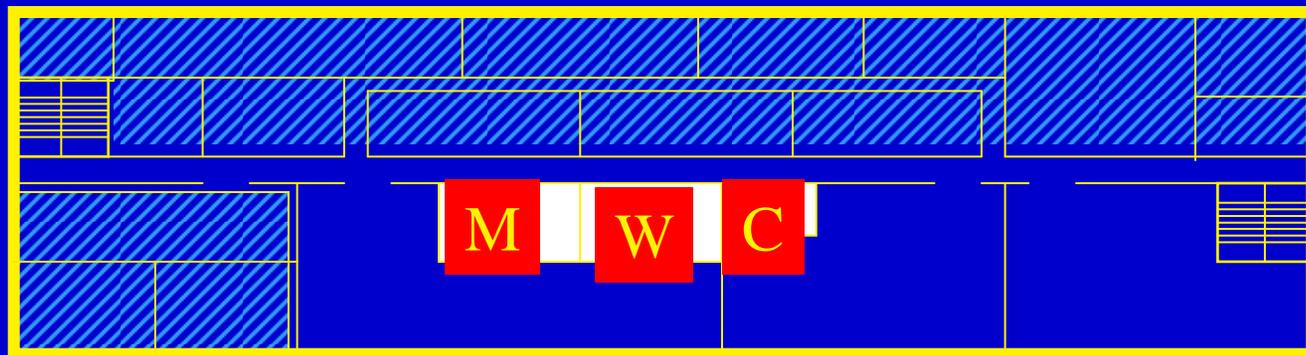
- Consider the same tenant office bld'g discussed in the example of Alteration Level 2.
- A rearrangement of several tenant spaces results in reconfiguration of 60 % of the 1<sup>st</sup> floor and 47 % of the 2nd floor.

# Chapter 8 Altn's - Level 3

## Example (cont)



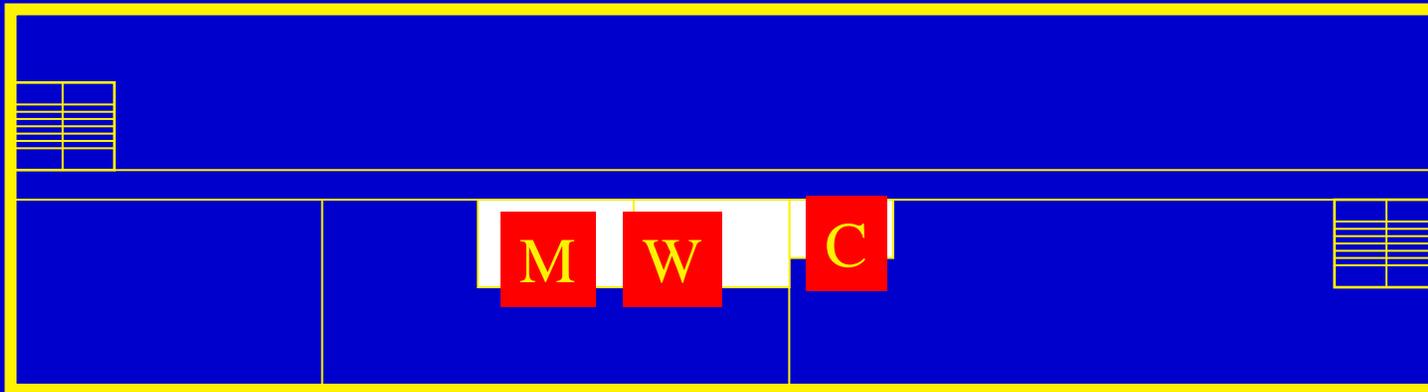
Existing First Floor



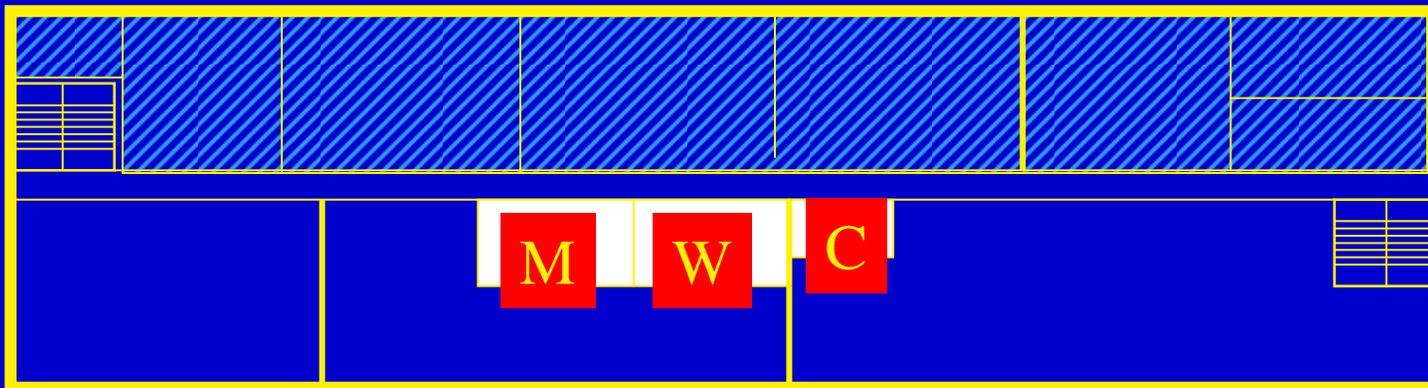
Proposed First Floor

# Chapter 8 Altn's - Level 3

## Example (cont)



Existing Second Floor



Proposed Second Floor

# Chapter 8

## Altn's -Level 3 Example (cont)

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### Analysis:

**This is an Alteration, Level 3 project because the work area consists of 53.5% of the building agg. area, over the 50% limit. As a Level 3, req'd. to follow the Chapter 8 provisions in add'n to those of Chs. 7 & 6**

***Important !***

***Do not include area of door or window***

***work within the AREA calculation !***

# IEBC Ch 8 - Level 3 Alt's Direction

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**Direction Given on subjects of:**

- **Special Use/Occ'y [802 & WI]**
- **Build'g Elements/Matl's [803]**
- **Fire Protection [804]**
- **Means of Egress [805]**

# IEBC Ch 8 – Direction (cont)

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- **Accessibility [806]**
- **Structural [807]**
- **Energy Cons'n [808 & WI]**
- **Plumbing [Wisconsinism on the State law dealing with the subject commonly referred to as “Potty Parity”]**

# **IEBC Ch 9**

## **Change of Occupancy**

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- **Similar to alteration levels, the extent of the change triggers differing levels of expected compliance.**
  - **Change of an occupancy provision that triggers a code requirement, but with no change to occupancy classification or group**
  - **Change of Occupancy that changes the Occupancy Classification or Group.**

# **IEBC Ch. 9 – Change within Class or Group**

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- **Change in occupancy, but with no change of occupancy classification or group must conform to Sections 902 through 911 and certain special provisos of the IBC (Covered Mall Bldg., Atriums, etc. – from IBC Ch. 4)**

# Ch. 9 – What's in 902 to 911?

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- **SPECIAL USE & OCCUPANCY [902]**
- **BLD'G ELEMENTS & MATL'S [903]**
- **FIRE PROTECTION [904]**
- **MEANS OF EGRESS [905]**
- **ACCESSIBILITY [906]**

# Ch. 9 – 902 to 911? (cont)

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- **STRUCTURAL [907]**
- **ELECTRICAL [908]**
- **MECHANICAL [909]**
- **PLUMBING [910 & WI]**
- **OTHER REQMT'S [911 & WI] (only light & vent'n)**

# **IEBC Ch. 9 Back to Change within Class or Group**

- **Change in occupancy, but with no change of occupancy classification or group . . .**
- **It is not uncommon for changes in activities or activity levels to occur within occupancies that will have implications on life safety risks without a change to class or group**

# Ch. 9 – Change within (cont)

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- How did we get here?
- Remember 901.2 . . . Must gain approval of the code official.
- S&B constantly speaks to the “code in effect” and the maintenance of existing conditions.
- Pre or Post 2002 (Model Code era)
- # of Exits and Assy. Sprinklers

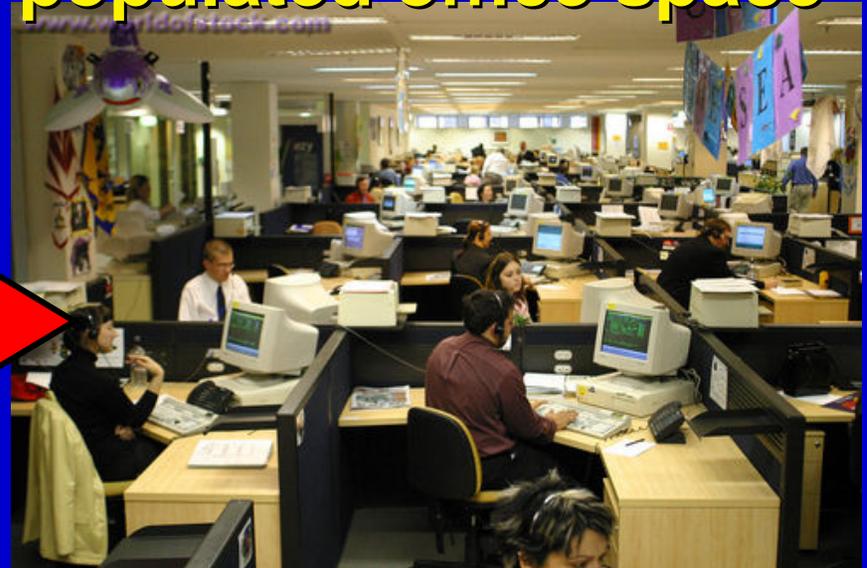
## **IEBC Ch. 9 – Change within (cont)**

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- **Most commonly recognized change is that which increases the occupant density within a given space.**
- **All are aware of the significant dangers and increased risks associated with increasing capacity without consideration for the adequacy of the egress system . . .  
Think of the other ramifications**



**Change to more densely populated office space**



# More Densely Populated Office Space

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**Is it a single exit building or space?**

**Remember 49 person limit !**

**No sprinkler trigger based on  
occupant load**

**Don't forget toilet fixture counts if  
capacity jumps by over 20% ! [see  
Comm 66.0910]**



**Change to more densely populated mercantile space**

# More Densely Populated Mercantile Space

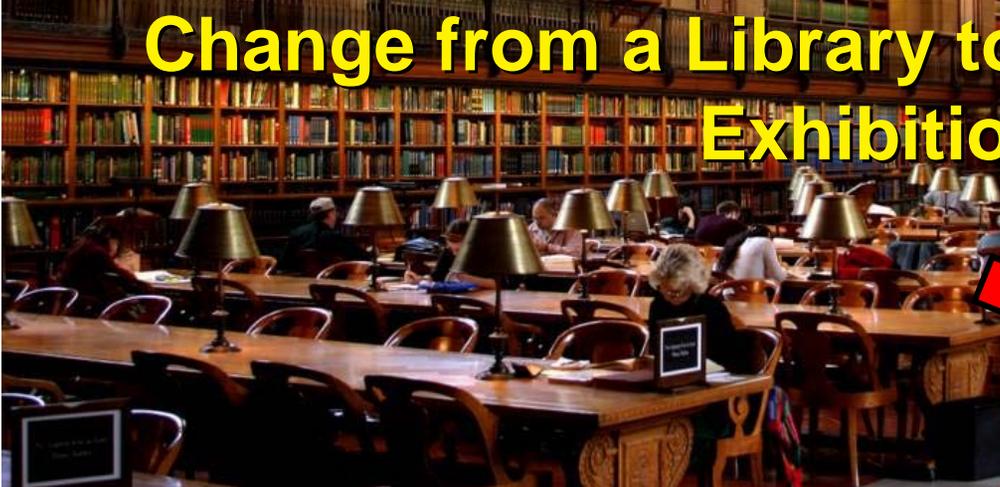
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**Is it a single exit building or space?**

**Remember 49 person limit !**

**No sprinkler trigger based on  
occupant load !**

**Don't forget toilet fixture counts if  
capacity jumps by over 20% ! [see  
Comm 66.0910]**



**Change from a Library to a Community Hall or Exhibition Hall**



# **From a Library to a Community Hall or Exhibition Hall**

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**Is it a single exit building or space?**

**Remember 49 person limit !**

**A-3 sprinkler trigger based on  
300 person occupant load !**

**Don't forget toilet fixture counts if  
capacity jumps by over 20% ! [see  
Comm 66.0910]**

# **Wisconsinism – Standpipes Changing to R-1 or R-2**

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**Is it a single exit building or space?**

**Remember 49 person limit !**

**A-3 sprinkler trigger based on  
300 person occupant load !**

**Don't forget toilet fixture counts if  
capacity jumps by over 20% ! [see  
Comm 66.0910]**

# **IEBC Ch. 9 – Change to Class or Group**

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- **When Change moves to different classification or group, Section 912 is added to Sections 902 through 911**
- **Section 912 Drives MORE reqmt's. that must be satisfied of the existing building.**

# **IEBC Ch. 9 – Occ'y Change (cont)**

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- **First is the understanding that sprinklering/alarms [per triggers in IBC Ch. 9] and interior finishes [walls & ceilings per IBC – see Ch. 8] must be brought into compliance (IEBC s. 912.2 & 912.3 resp.)**
- **Next is the analysis of other subject and the relative hazards associated with the change.**



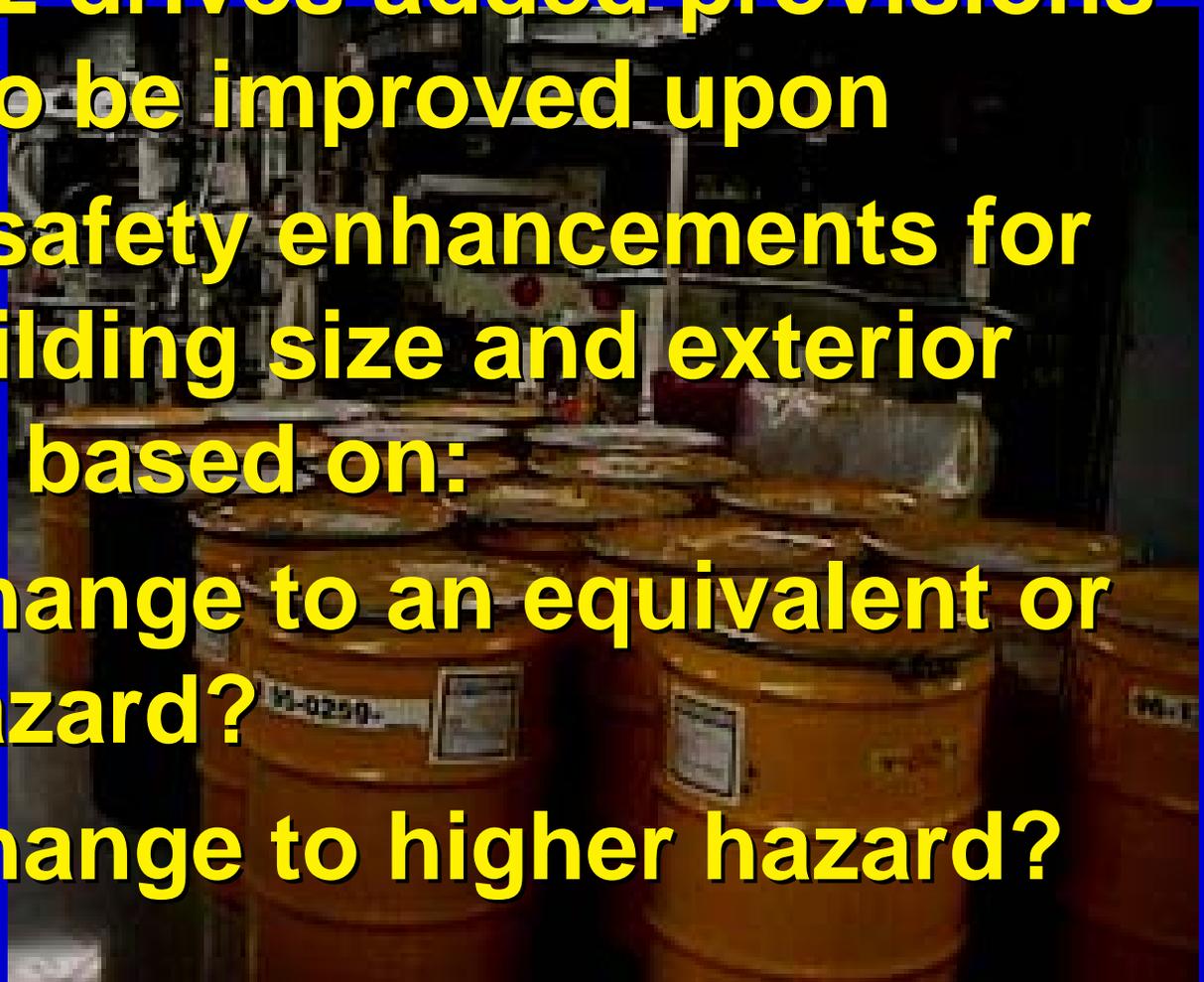
**Change from mercantile to office space**



## Ch. 9 – Section 912 (cont)

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- Section 912 drives added provisions that have to be improved upon
- Degree of safety enhancements for egress, building size and exterior walls to be based on:
  - ? Is the Change to an equivalent or lesser hazard?
  - ? Is the Change to higher hazard?



## **Ch. 9 – Section 912 (cont)**

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- **Safety enhancements for Fire Protection Systems (Sprinklers, Standpipes & Alarm/Detection), Interior Finish and Accessibility are NOT based on relativity of hazard . . . [refer to IEBC sections 912.1.2, 912.1.4, 912.2, 912.3 & 912.8 plus WI Mod's]**

# Ch 9 – Sect. 912

## Relativity of Hazard

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- Evaluation of hazards based on:
  - Life safety and exiting
  - Height and area
  - Exposure of exterior walls



# IEBC TABLE 912.4

## HAZARD CATEGORIES MEANS OF EGRESS

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	I-2, I-3, I-4
3	A, E, I-1, M, R-1, R-2, R-4
4	B, F-1, R-3, S-1
5 (Lowest Hazard)	F-2, S-2, U

# **IEBC TABLE 912.5 HAZARD CATEGORIES HEIGHTS AND AREAS**

<b>RELATIVE HAZARD</b>	<b>OCCUPANCY CLASSIFICATIONS</b>
<b>1 (Highest Hazard)</b>	<b>H</b>
<b>2</b>	<b>A-1, A-2, A-3, A-4, I, R-1, R-2, R-4</b>
<b>3</b>	<b>E, F-1, M, S-1</b>
<b>4 (Lowest Hazard)</b>	<b>A-5, B, F-2, R-3, S-2, U</b>

# EBC TABLE 912.6

## HAZARD CATEGORIES EXPOSURE OF EXTERIOR WALLS

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	F-1, M, S-1
3	A, B, E, I, R
4 (Lowest Hazard)	F-2, S-2, U



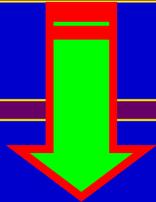
**Change from mercantile to office space**



# IEBC TABLE 912.4

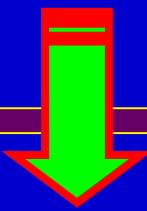
## HAZARD CATEGORIES MEANS OF EGRESS

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	I-2, I-3, I-4
3	A, E, I-1, M, R-1, R-2, R-4
4	B, F-1, R-3, S-1
5 (Lowest Hazard)	F-2, S-2, U



# IEBC TABLE 912.5 HAZARD CATEGORIES HEIGHTS AND AREAS

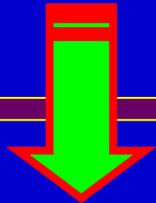
RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	A-1, A-2, A-3, A-4, I, R-1, R-2, R-4
3	E, F-1, M, S-1
4 (Lowest Hazard)	A-5, B, F-2, R-3, S-2, U



# EBC TABLE 912.6

## HAZARD CATEGORIES EXPOSURE OF EXTERIOR WALLS

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	F-1, M, S-1
3	A, B, E, I, R
4 (Lowest Hazard)	F-2, S-2, U





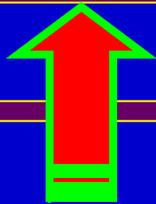
**Change from offices to restaurant use**



# IEBC TABLE 912.4

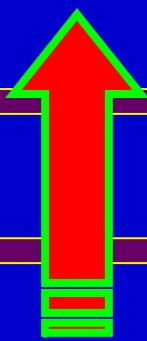
## HAZARD CATEGORIES MEANS OF EGRESS

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	I-2, I-3, I-4
3	A, E, I-1, M, R-1, R-2, R-4
4	B, F-1, R-3, S-1
5 (Lowest Hazard)	F-2, S-2, U



# IEBC TABLE 912.5 HAZARD CATEGORIES HEIGHTS AND AREAS

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	A-1, A-2, A-3, A-4, I, R-1, R-2, R-4
3	E, F-1, M, S-1
4 (Lowest Hazard)	A-5, B, F-2, R-3, S-2, U



# EBC TABLE 912.6

## HAZARD CATEGORIES EXPOSURE OF EXTERIOR WALLS

RELATIVE HAZARD	OCCUPANCY CLASSIFICATIONS
1 (Highest Hazard)	H
2	F-1, M, S-1
3 <i>Same Level</i>	<del>A, B</del> , E, I, R
4 (Lowest Hazard)	F-2, S-2, U

# IEBC Ch 10 Additions

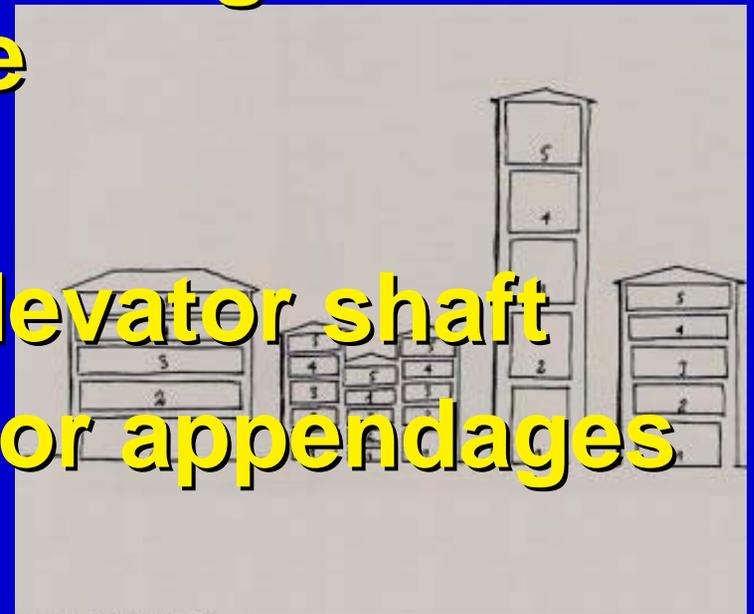
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- **Definition**

- **An extension or increase in floor area (including floor infill projects), number of stories, or height of a building or structure**

- **Exception 1002.2**

- **Infill stairway or elevator shaft**
- **Exit stair or elevator appendages**



# IEBC Ch 10 – Additions (cont)

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- **Approach**
  - Additions are treated much as they have always been treated by the WCBC.
  - Not creating or extending non-conformance of existing buildings
  - Separation is often critical

# IEBC Ch 10 – Additions (cont)

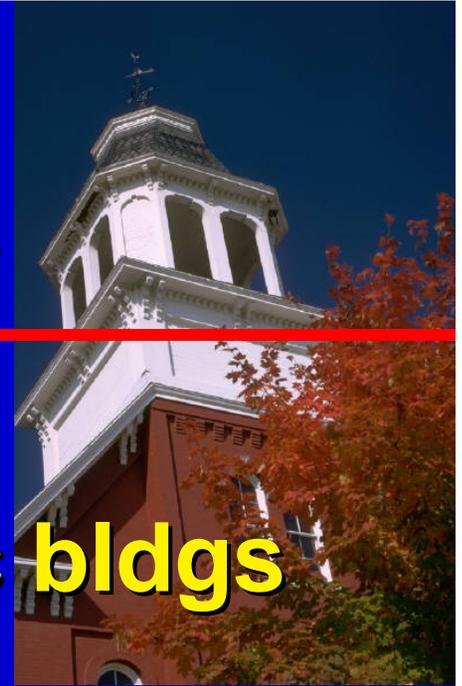
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- **Approach**
  - Additions are treated much as they have always been treated by the WCBC.
  - Not creating or extending non-conformance of existing buildings
  - Separation is often critical

# IEBC Ch 11

## Historic Buildings

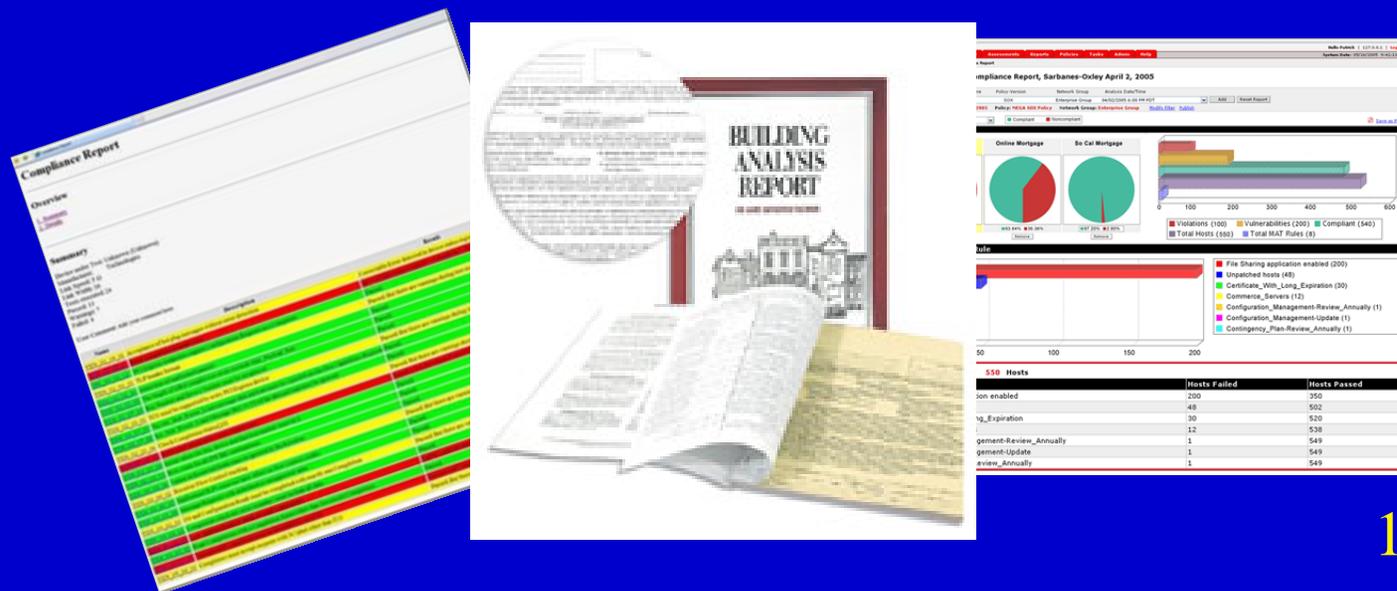
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- **Approach**
  - Work performed in historic bldgs allows specific additional exceptions to IEBC reqmt's for repair, altn's, and change of occupancy
  - Fire suppression systems often cure most ills . . . NOT no. of exits

# Section 1101 - General

- 1101.2 - Be prepared to have owners asking if you would be willing to pull together a report on their behalf for submission to the local code official.



# Section 1103 Fire Safety

- **1103.2 & 1103.12 - Historic Buildings that do not conform to the construction provisions of the code & constitutes a distinct fire hazard can install an approved automatic fire-extinguishing system as an alternative**
- **CANNOT use the system as an alternative to the number of exits**



# Section 1103 Fire Safety Details

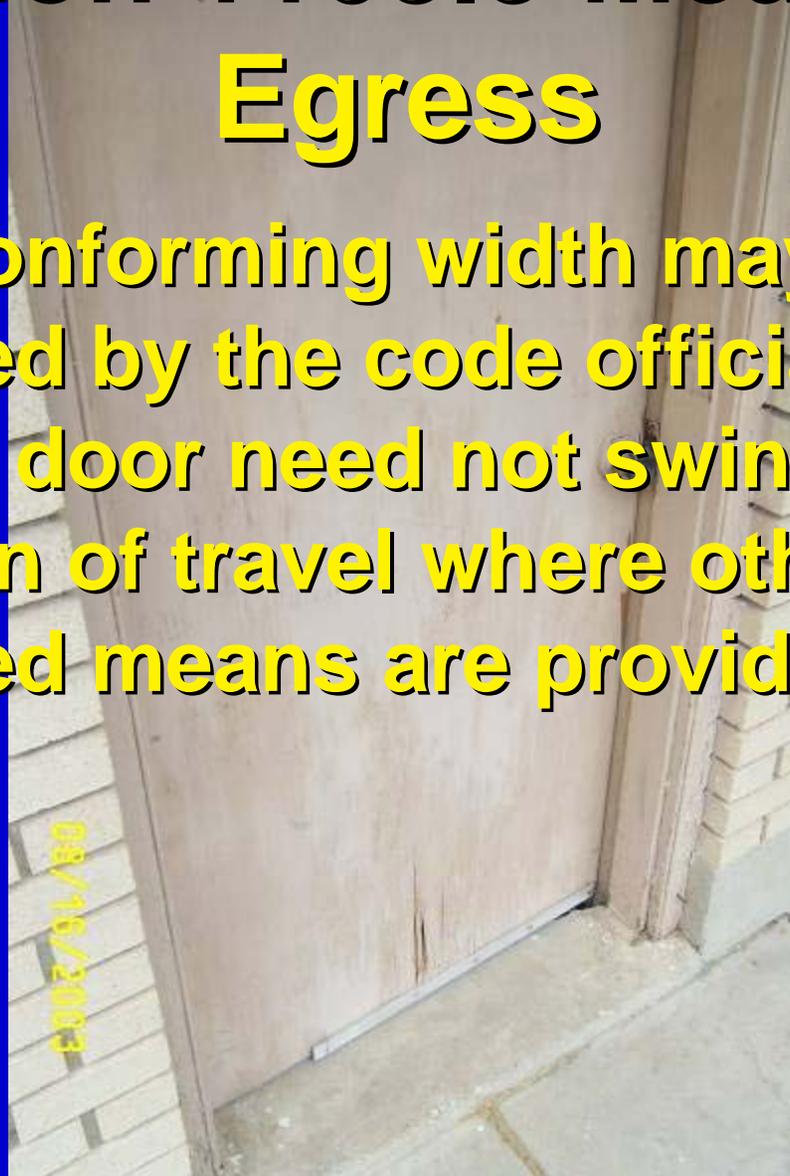
- Egress [1103.3]
- Transoms [1103.4]
- Interior Finishes [1103.5]
- Stairway Enclosure [1103.6]
- One-Hour Fire-Res. Assy's [1103.7]

# **Fire Safety Details (cont)**

- **Glazing in Fire-Res. Syst's [1103.8]**
- **Stairway Railings [1103.9]**
- **Guards [1103.10]**
- **Exit Signs [1103.11]**
- **Auto. Fire-Exting. Syst's [1103.12]**

# Section 1103.3 Means of Egress

- ...nonconforming width may be approved by the code official...front or main door need not swing in the direction of travel where other approved means are provided



# Section 1103.4 Transoms

- ...Transoms in fully sprinkled R-1, R-2 & R-3 can leave the transoms in corridors and other rated walls if fixed in the closed position . . .

# Section 1103.5 Interior finishes

- ...where demonstrated as historic...may remain



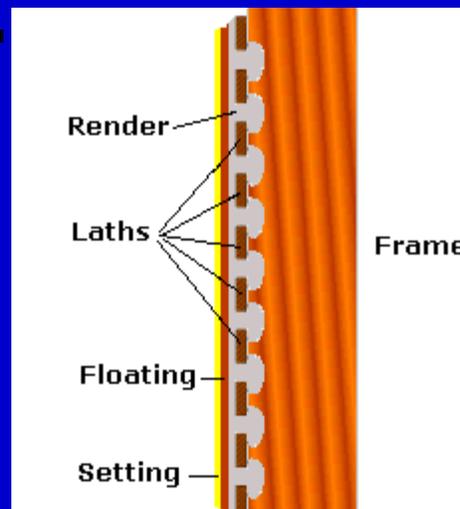
# Section 1103.6 Stairway enclosure

- ...three stories or less...limit the spread of smoke



# Section 1103.7 One-hour fire-resistive assemblies

- ...where required...need not be provided where existing wall and ceiling finish is wood or metal lath and plaster.



# Section 1103.8 Glazing in fire-resistive systems

- ... Unrated historic glazing can be allowed to remain when provided with approved smoke seals and sprinklered...



# Section 1103.9 Stairway railings

- ...grand stairways shall be accepted...existing handrail and guards permitted to remain...



## Section 1103.10 Guards

- ...existing shall comply with Section 505 regarding height
- ...existing openings and ornamental patterns shall be accepted...

# Section 1103.11 Exit signs

- ...where historic character is affected alternative exit signs may be permitted



# Section 1104 Alterations

- **Section 1104.1 Accessibility requirements ...Section 605 shall apply unless technically infeasible**
- **Where historic significance threatened...alternative requirements...**
  - **1104.1.1 Site arrival**
  - **1104.1.2 Multi-level buildings**
  - **1104.1.3 Entrances**
  - **1104.1.4 Toilet and bathing facilities**



# Section 1105 Change of Occupancy – WI Mod

**Comm 66.1101 Historic buildings. (2) EXHIBIT BUILDINGS. (add's reqmt's to those of IEBC s.1105)**

**Historic buildings to be used as exhibit buildings . . . refer to (a) to (i) for specific details**



# Occupancy Change Specific Provisions

- **Cannot ignore Ch. 9 except as specifically called for in Ch. 11. When Ch. 9 states you are to follow specific provisions from Ch's 5, 6 or 7 and those are covered by the exceptions in s.1102, that exception governs**
- **Now what are some of those items that are specifically called out and covered in Chapter 11 ?**

# Specifically Called out Provisions

- There are 14 different subjects . . .
- Building Area [1105.2]
- Loc'n. on Prperty [1105.3]
- Occupancy Separations [1105.4]
- Roof covering [1105.5]

## **14 Specific Items (cont)**

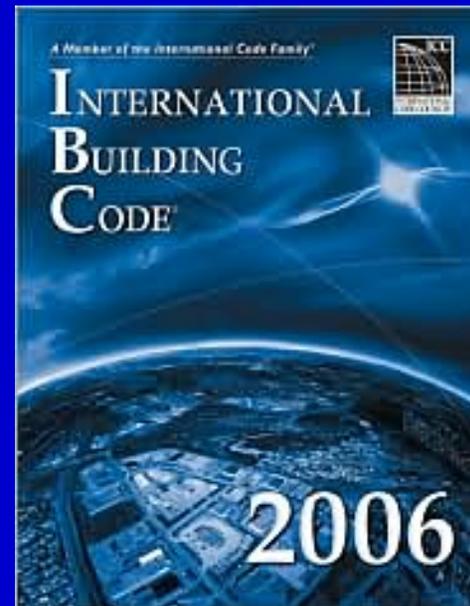
- **Means of Egress [1105.6]**
- **Door Swing [1105.7]**
- **Transoms [1105.8]**
- **Finishes [1105.9]**
- **One-Hour Fire-Res. Assy's [1105.10]**

## **14 Spec. Items (cont)**

- **Stairs & Railings [1105.11]**
- **Exit Signs [1105.12]**
- **Exit Stair Live Load [1105.13]**
- **Natural Light [1105.14]**
- **Accessibility [1105.15]**

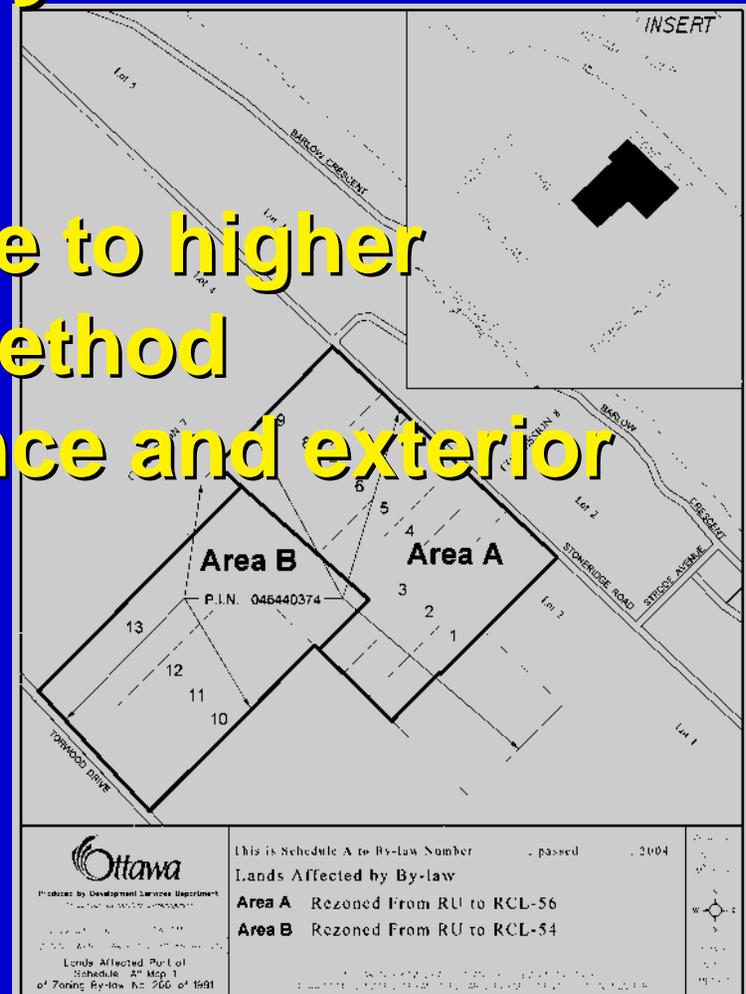
# Section 1105.2 Building area

- ...20% area increase beyond IBC chapter 5 is permitted



# Section 1105.3 Location on property

- ...where change of use to higher hazard...alternative method regarding fire resistance and exterior openings permitted



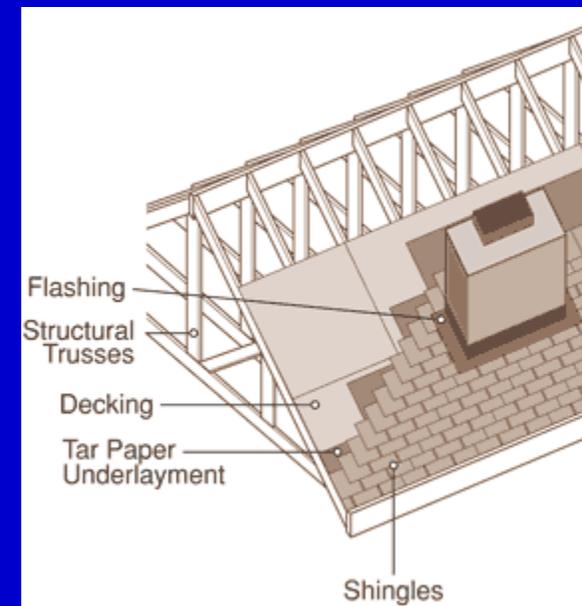
# Section 1105.4 Occupancy Separation

- ...required separation of one-hour can be omitted where sprinklered.



# Section 1105.5 Roof Covering

- ...covering not less than Class “C” where fire-retardant roof covering is required.



# **Section 1105.6 Means of Egress**

- **...existing openings and widths less than acceptable for a non-historic building...acceptable by code official.**

# Section 1105.7 Door Swing

When approved by the code official, existing front doors need not swing in the direction of exit travel, provided that other approved exits having sufficient capacity to serve the total occupant load are provided.



# Section 1105.8 Transoms

- In corridor walls required to be fire rated, transoms can remain if fixed in the closed position and wired glass (or other app'd glazing) set in a steel frame is installed on one side of the transom.
- Exception: Transoms conforming to Section 1103.4 are to be accepted.



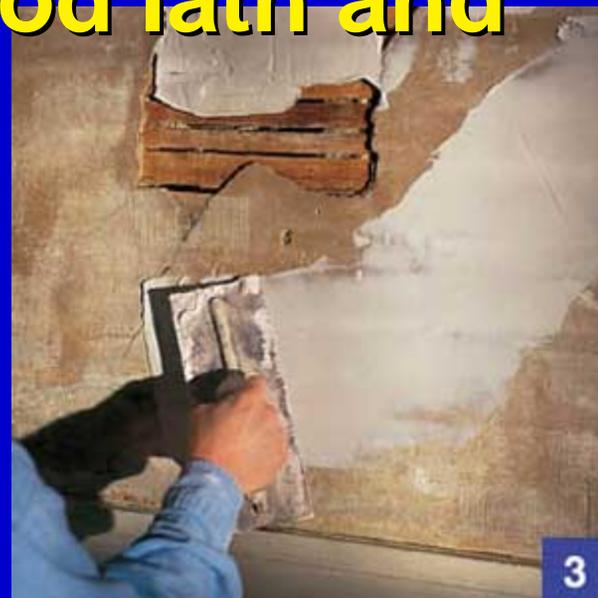
# Section 1105.9 Finishes

- **Where finishes need a flame-spread classification of Class III or better, existing nonconforming matl's to be surfaced with an approved fire-retardant paint or finish.**
- **Exception: When the Existing Materials are substantiated as being historic in character, OK to treat/cover with fire-retardant paint or finish provided the bldg is fully sprinkled.**

# Section 1105.10

## One-hour Assemblies

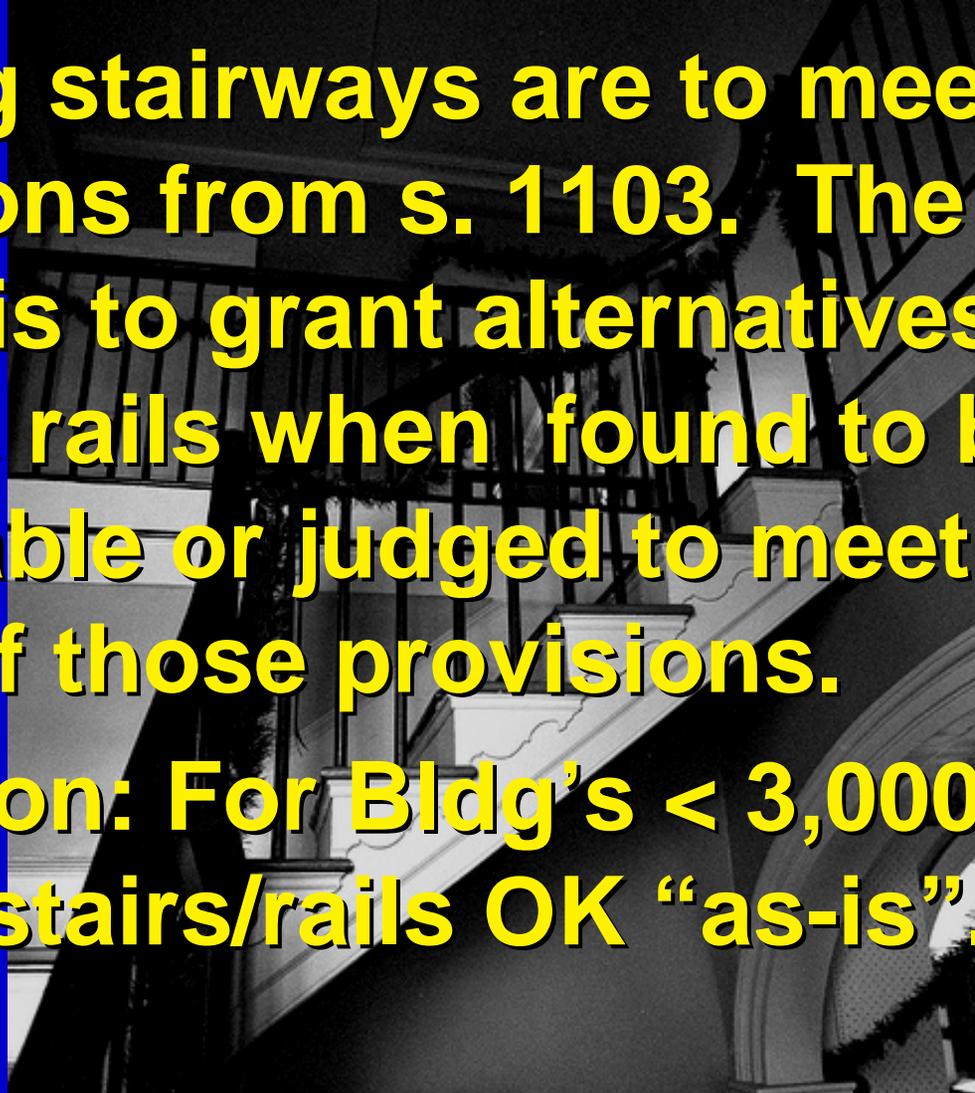
Where 1-HR fire rated construction is required, you can disregard in all cases where the existing wall and ceiling finish is wood lath and plaster.



# Section 1105.11

## Stairs and Railings

- Existing stairways are to meet the provisions from s. 1103. The code official is to grant alternatives for stairs & rails when found to be acceptable or judged to meet the intent of those provisions.
- Exception: For Bldg's < 3,000 SF the exist'g stairs/rails OK "as-is".



## Section 1105.12 Exit signs

The code official may accept alternative exit sign locations where normal signage would damage the historic character of the building or structure. The signs must still identify the egress path and the exits.



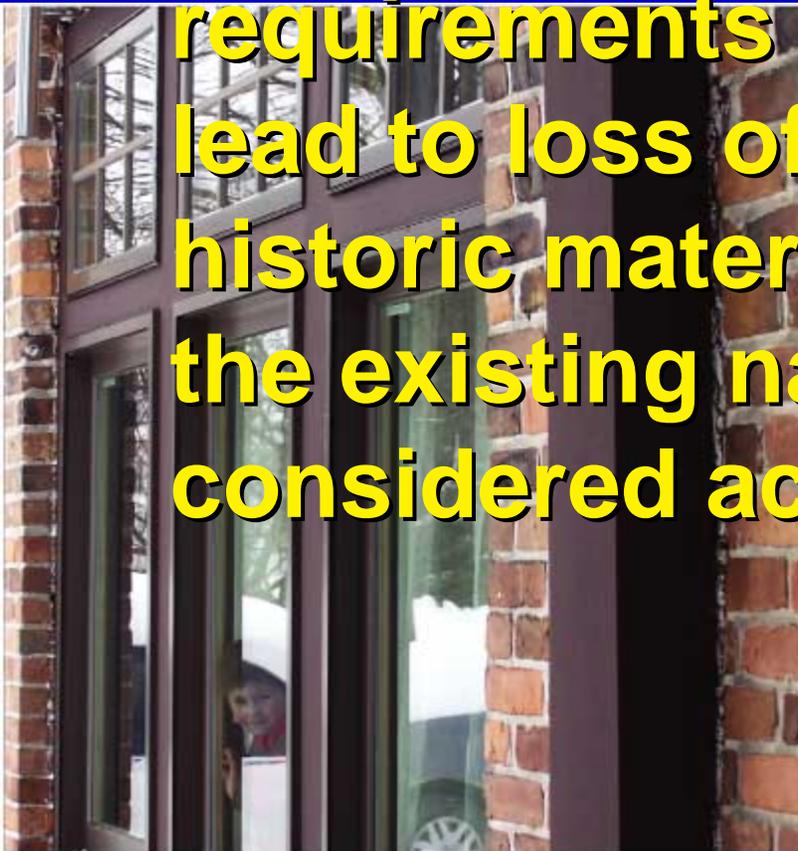
# **Section 1105.13**

## **Exit Stair Live Load**

**Existing historic stairways in buildings changed to a Group R-1 or R-2 occupancy are to be OK'd provided the stairway can support a 75 PSF live load.**

# Section 1105.14 Natural Light

When the code official determines compliance with the natural light requirements of Section 911.1 will lead to loss of historic character or historic materials in the building, the existing natural lighting is to be considered acceptable.



## **Section 1105.15 Accessibility**

**The provisos of s. 912.8 apply unless technically infeasible. Where the CO determines compliance with the reqmt's for accessible routes, ramps, entrances, or toilet facilities would threaten or destroy the historic significance of the bld'g, the alternatives of ss. 1104.1.1 - 1104.1.5 are to be allowed**

# **Section 1106 Structural**

- **Section 1106.1 General ...comply with Chapter 4**
- **Exception...code official can accept existing floor structures and approve or impose operational controls that will limit live loads to correspond with the adequacy of the structure**

# IEBC Ch 12

## Relocated or Moved Buildings

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**Covers exist'g Commercial Bldgs moved essentially intact**

### **Approach**

- Location on the lot & the foundation must comply with the applicable IBC provisions**
- Other than limited except's, wind, seismic, snow and flood provn's of the IBC must be complied with at the new location**



# **IEBC Ch 13**

## **Compliance Alternatives**

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- **Intended to maintain or increase the current degree of public safety, health and general welfare without full compliance**
- **Approach is similar to the numerical balancing method that was used in the WI Historical Code of the past.**
  - **Alternative to Chapters 5-11**

# Compliance Alternatives

## Key Elements

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- Investigation and Evaluation . . . Includes Structural Analysis
- In essence, 19 distinct items are compared and ranked against the 3 main categories of Fire Safety, Means of Egress & General Safety
- Scores Developed Resulting in “Pass” or “Fail” for each of those Main Categories

# **Compliance Alternatives 19**

## **Distinct Items**

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- **Building Height [1301.6.1]**
- **Building Area [1301.6.2]**
- **Compartmentation [1301.6.3]**
- **Tenant & D.U. Separations [1301.6.4]**
- **Corridor Walls [1301.6.5]**
- **Vertical Openings [1301.6.6]**

# 19 Distinct Items (cont)

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- **HVAC Systems [1301.6.7]**
- **Auto Fire Detection [1301.6.8]**
- **Fire Alarm System [1301.6.9]**
- **Smoke Control [1301.6.10]**
- **Means of Egress (MOE) Capacity [1301.6.11]**
- **Dead Ends [1301.6.12]**

# 19 Distinct Items (cont)

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- **Max. Exit Travel Distance [1301.6.13]**
- **Elevator control [1301.6.14]**
- **MOE Emergency Lighting [1301.6.15]**
- **Mixed Occupancies [1301.6.16]**
- **Automatic Sprinklers [1301.6.17]**
- **Standpipes [1301.6.18]**
- **Incidental Use Area Protection [1301.6.19]**

# **IEBC Ch 14**

## **Construction Safeguards**

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- **Should be very familiar . . . Similar to IBC Ch. 33, but geared to conditions associated with existing buildings**
- **Includes provisions for the general protection of the public & site cleanliness (includes sanitary)**
- **Covers 7 other specific items . . .**

# 7 Specific Const. Safeguards

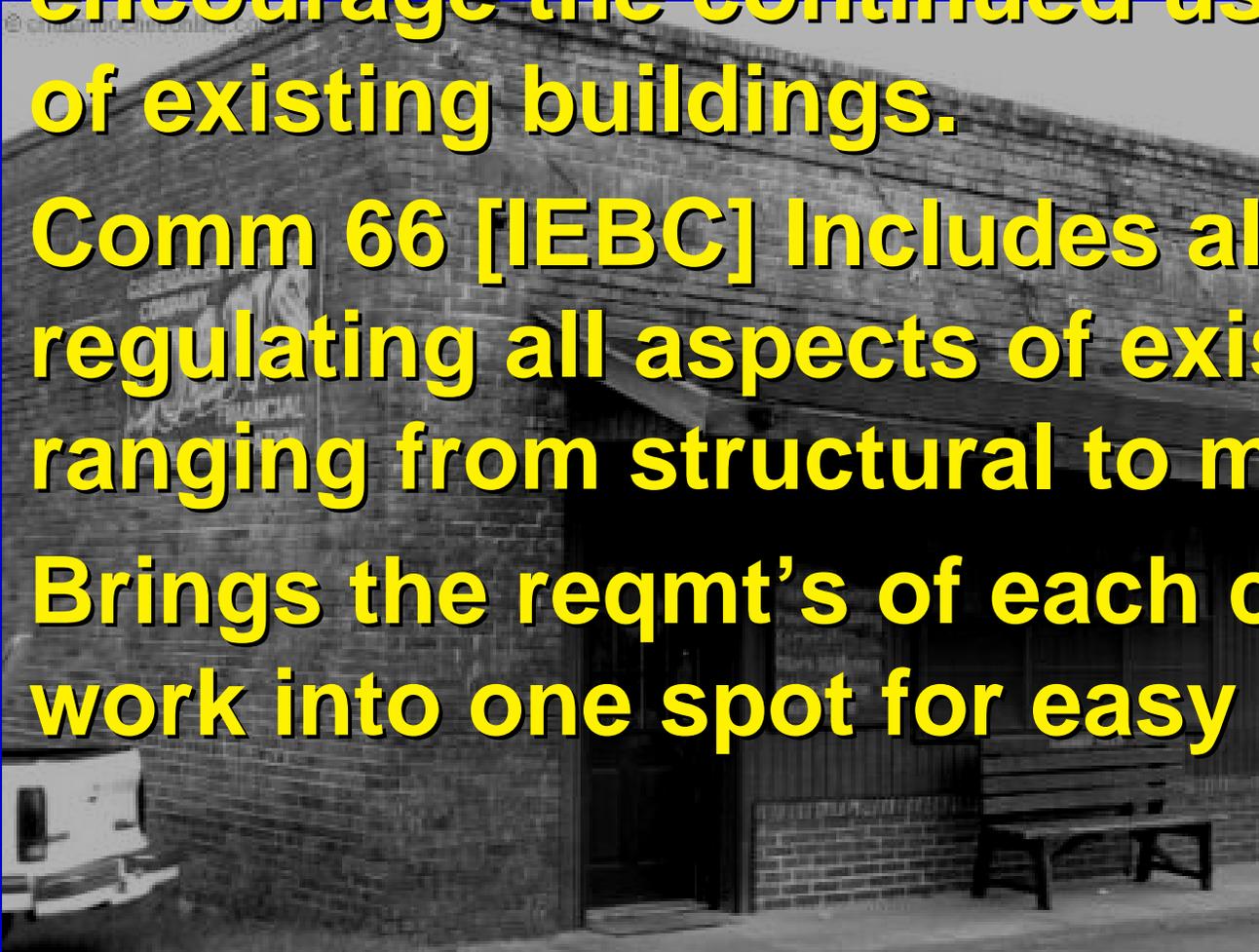
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- **Prot'n of Adjoining Property**
- **Temp. Use of Public Ways and Prop.**
- **Fire Extinguishers**
- **Exits**
- **Standpipe Systems**
- **Automatic Sprinkler Systems**
- **Accessibility**

# IEBC Summary

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- The goal of Comm 66 [IEBC] is to encourage the continued use & re-use of existing buildings.
- Comm 66 [IEBC] Includes all provisos regulating all aspects of existing bldgs ranging from structural to mechanicals.
- Brings the reqmt's of each category of work into one spot for easy use



# IEBC Summary (cont)

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- **Comm 66 [IEBC] provides alternate methods for compliance by means of the administrative provisions found in Chapter Comm 61 & the compliance alternative provisions of IEBC Ch 13**

# Questions ???

