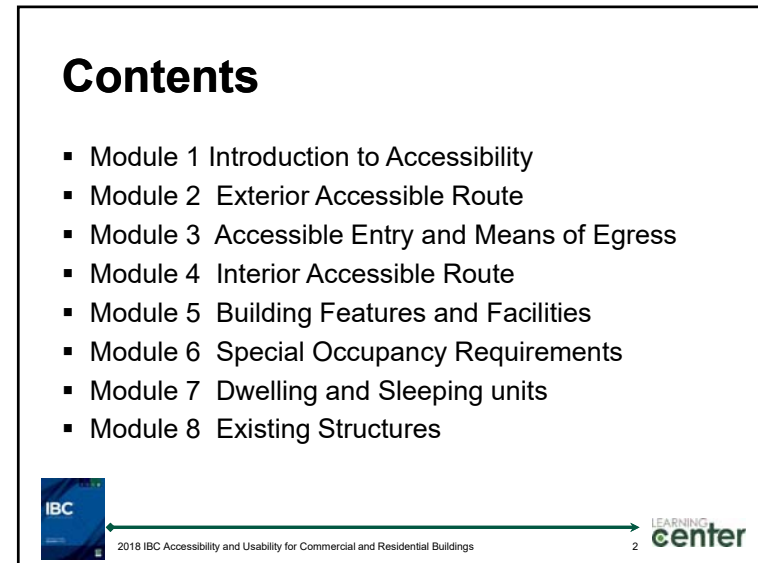


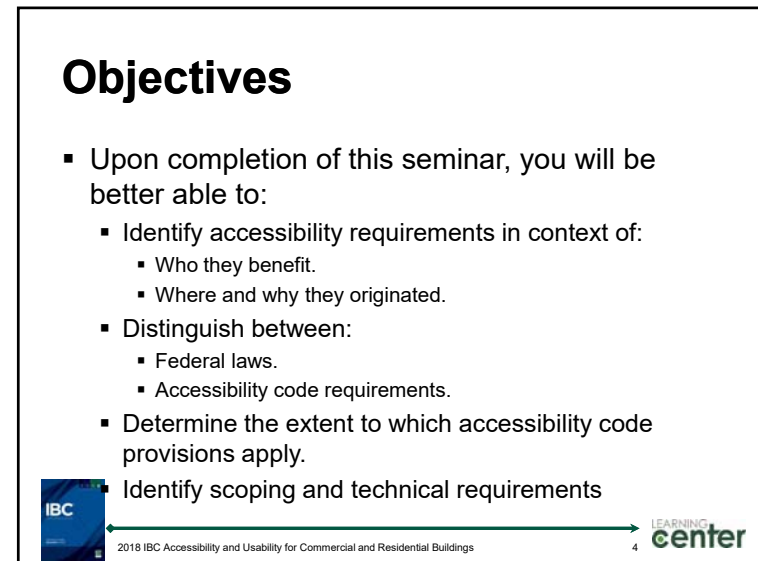
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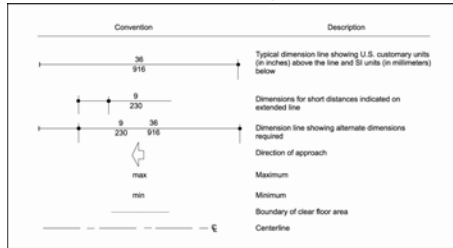
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4

## Graphic Conventions

- Drawings presented today, and in the workbook, use the following graphic conventions for showing dimensions on figures. All dimensions are shown in inches above the measure line with the metric equivalent below.



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## Marginal Markings

- Solid vertical lines** in the margins within the body of the code indicate a technical change from the requirements of the 2009 edition.
- Deletion indicators in the form of an arrow** are provided in the margin where an entire section, paragraph, exception or table has been deleted or an item in a list of items or a table has been deleted.
- A single asterisk [\*]** placed in the margin indicates that text or a table has been relocated within the code.
- A double asterisk [\*\*]** placed in the margin indicates that the text or table immediately following it has been relocated there from elsewhere in the code.



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6

## Accessibility in the Built Environment



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## What are we talking about?

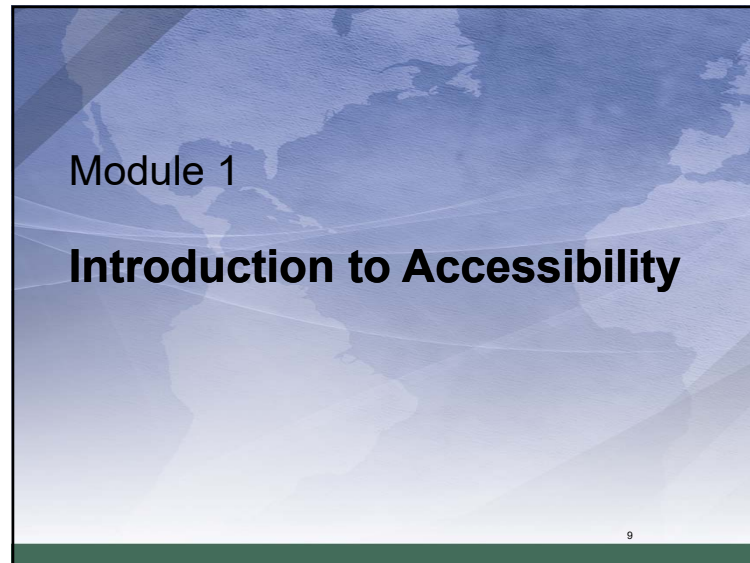
disability



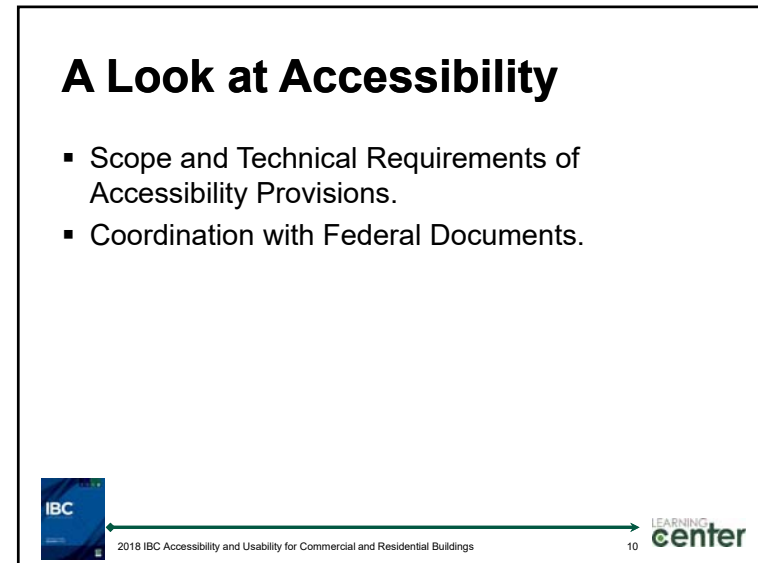
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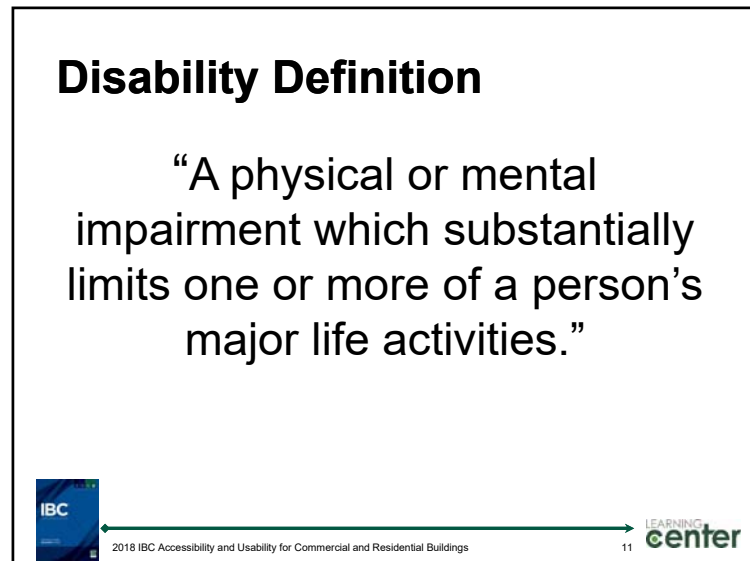
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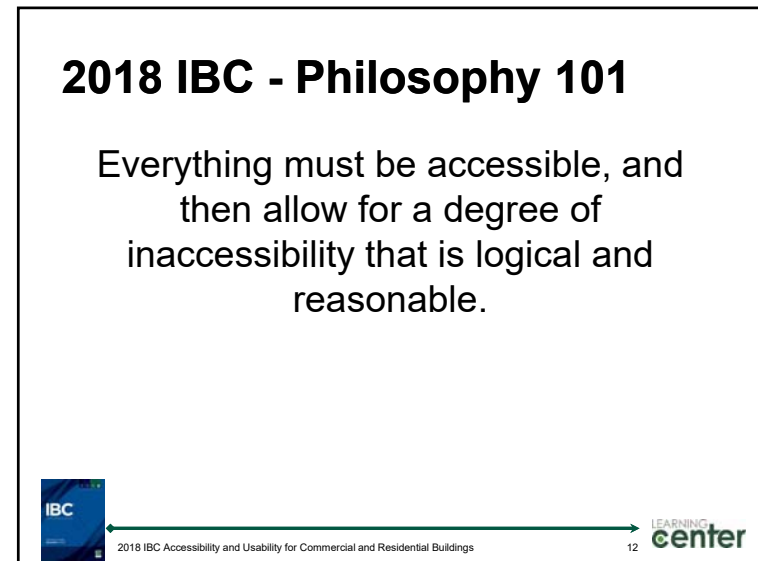
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10




11



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## Requirements

- Scoping Requirements:
  - “What, Where and How Many”
  - (2018 IBC and IEBC)
- Technical Requirements:
  - “How”
  - (ICC/ANSI A117.1-2009)

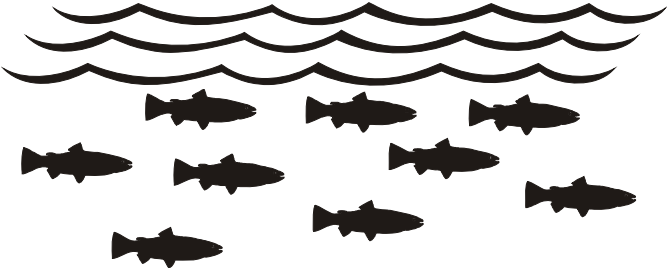


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## Mainstreaming




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## Coordination Efforts

Federal laws




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## ICC Goals

- Coordinate the building code requirements with the



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## American's with Disabilities Act (ADA) - 1990

- Civil Rights law against discrimination for persons with disabilities.
- Consists of five areas:
  - Title I – Employment
  - Title II – Accessibility public transportation and governmental services
  - Title III – Accessibility to all other buildings
  - Title IV – Telecommunication
  - Title V – Miscellaneous



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## American's with Disabilities Act (ADA) - 1990

- Scoping and technical requirements found in:
  - Originally in 1991 -
    - American's with Disabilities Act Accessibility Guidelines (ADAAG).
    - Uniform Federal Accessibility Standards (UFAS).
  - Currently –
    - 2010 ADA Standard for Accessible Design
    - Previously called the 2004 ADA/ABA Accessibility Guidelines



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## 2010 ADA Standard for Accessible Design

- Dept. of Justice adopted July 23, 2010.
- Published in Federal Registry on Sept. 15, 2010.
- Requirements were mandatory for new construction started after March 15, 2012.



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## ADA & ABA Standards §207

- Require compliance with the International Building Code (IBC) for accessible means of egress



IBC 2003 Section 1007

OR



IBC 2000 with 2001 Supplement Section 1003.2.13





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## ADA & ABA Standards

- What about compliance with later editions?
- Permitted where equivalent or better (“equivalent facilitation” in the ADA Standards Section 103)





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## Fair Housing Act (FHA) – 1968 & 1988

- Civil Rights law against discrimination in housing.
- 1968 - no discrimination on the basis of race, color, religion, sex and national origin.
- 1988 - amended to include disabilities and familial status.




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## Fair Housing Act

- Covers all housing built for first occupancy after March 13, 1991.
- Scoping and technical requirements found in the Fair Housing Accessibility Guidelines (FHAG).





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## "SAFE HARBOR"



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## “Safe Harbor” means...

- that requirements in the document have been reviewed by HUD and meet or exceed the building construction requirements in the FHA.
- 2021 IBC and 2017 ICC A117.1 will be review by HUD.



25

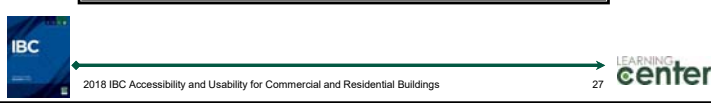
## Technical Assistance

- ICC and A117.1 – ICC, (888)422-7233; [www.iccsafe.org](http://www.iccsafe.org).
- ADA – Access Board, 800-872-2253(v), 800-993-2822(TTY), [www.access-board.gov](http://www.access-board.gov) or email at [ta@access-board.gov](mailto:ta@access-board.gov)
- ADA – ADA Technical Assistance Centers (800)949-4232; [www.adata.org](http://www.adata.org)
- Fair Housing – Fair Housing Accessibility First, (888)341-7781; [www.fairhousingfirst.org](http://www.fairhousingfirst.org).



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## Role of the Code Official



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## Enforcement of Federal Requirements

Complaints

Inspection and Review


Mediation


Through the courts



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## Advanced

- This class will discuss some of the new ideas coming forward in the 2017 A117.1 and the 2021 IBC.
- These will be indicated by the  on the upper right corner of the slide.



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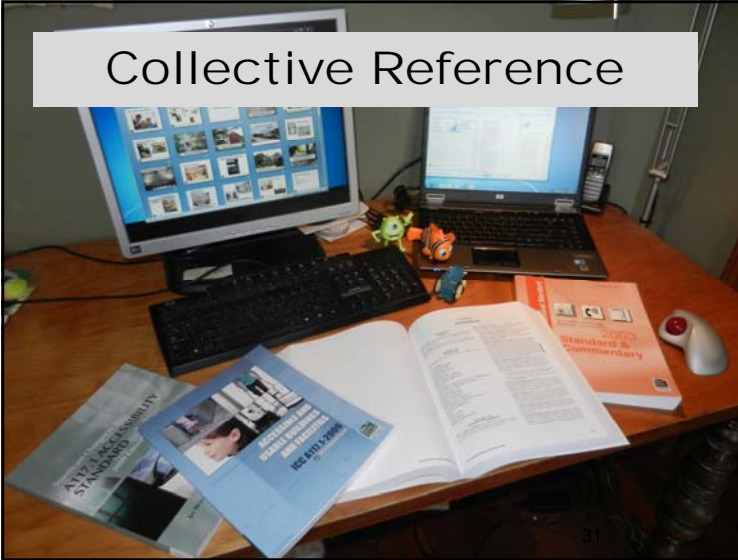
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## General Exceptions

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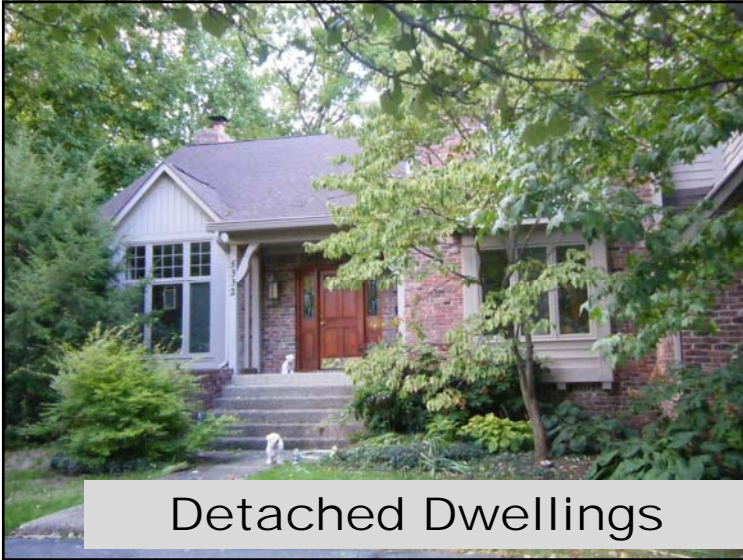
30

## Collective Reference



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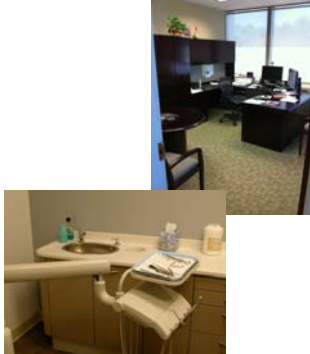
## Detached Dwellings



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## Employee Work Area



- Approach, enter and exit only
- Elements for employees and only for work not required to be accessible

Exceptions:

- Work station < 300 sq.ft. in area and **required** to be elevated  $\geq 7$  inches

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## Employee Work Area – Common use circulation paths



Common use circulation paths not required to be accessible:

- <1,000 sq.ft. areas
- Integral to equipment
- Exterior employee areas




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## Walk-in Coolers and Freezers







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## Areas in Places of Religious Worship

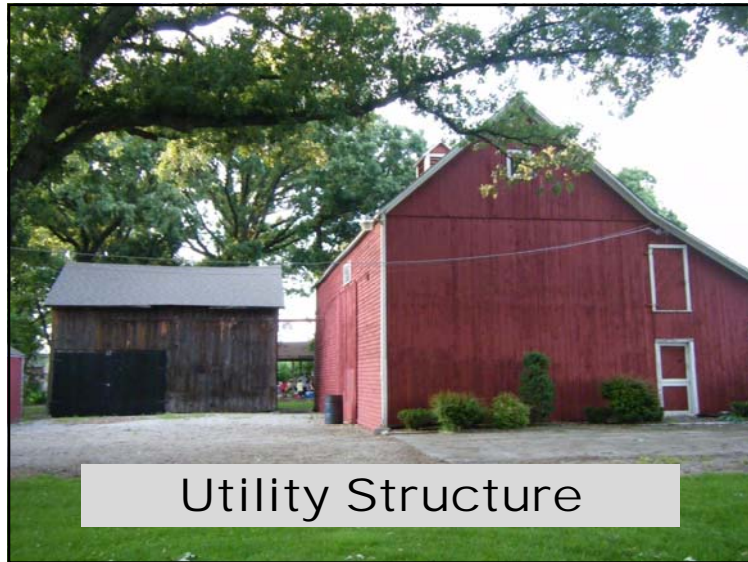
- Small areas used for religious ceremonies are now exempt from the access requirements.
- < 300 sq.ft. in area and elevated or lowered  $\geq 7$  inches






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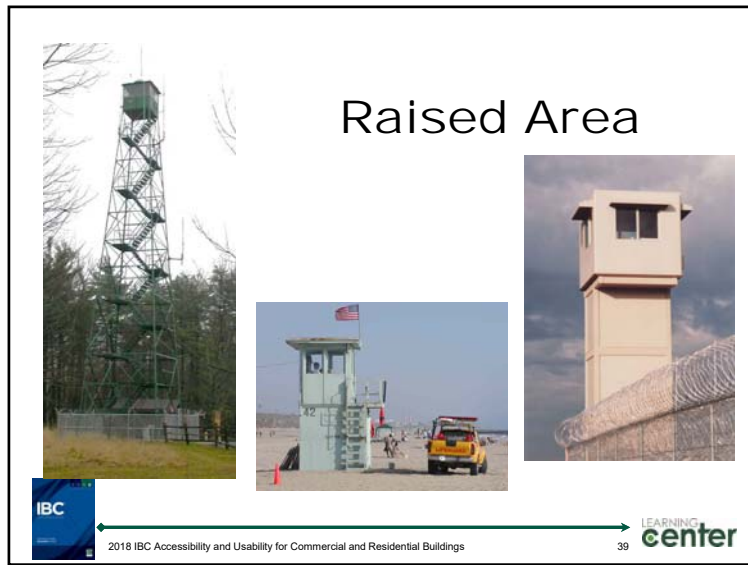
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## Equipment Spaces



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## Highway tollbooths



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Residential R-1



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Day Care Facility in a Single Family Home

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## Live/Work Units





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## Detention and Correctional Facilities



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## Not Exempted Under IBC

- Religious Buildings
- Private Clubs



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## Special Occupancies

Sections 1107, 1108 and 1110

- Group I.
- Group R.
- Assembly seating.
- Self-service storage areas.
- Judicial facilities.
- Recreational facilities.



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## No accessible routes between levels (or when do you need an elevator?)

- Aggregate area of stories, mezzanines and occupied roofs  $\leq$  3000 square feet except in:
  - Health care providers.
  - Multi-tenant mercantile.
  - Transportation facilities.
  - Government buildings.
- Items specifically addressed in 1107 and 1108.
- Air traffic control towers.
- 2<sup>nd</sup> floors or mezzanines that are non-public areas with  $< = 5$  occupants.
- Press boxes



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## Press Boxes

- $< 500$  sq.ft.
- Accessed from the bleachers
- A minimum of 12 feet elevation



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## Existing buildings

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## Existing Buildings

- Maintenance.
- Alteration.
- Change of occupancy.
- Addition.
- Historic buildings.



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## Which book to use?

- Chapter 34 was deleted from the 2015 IBC
- The 2018 IEBC has three methods—
  - Prescriptive Compliance Method – Chapter 5
  - Work Area Method – Chapters 6 through 12
  - Performance compliance method – Chapter 13
- Accessibility provisions for all three methods in Section 305



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## Extent of Application

Alterations are not required to exceed the accessibility that would be required for a new building.



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## Alterations to Existing Buildings – Part 1

When altering an existing building, everything that is altered must meet new construction requirements for accessibility.



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## General Exceptions

- Accessible means of egress.
- Technically infeasible.
- When historical significance is adversely affected.
- Type B units when the alteration is to less than 50% of the area of the building (Level 1 or 2)



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## Technically Infeasible

- Removal or *alteration* of a load-bearing member that is an essential part of the structural frame
- Existing physical or site constraints



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## Alterations to Existing Buildings – Part 2

- If the area being altered contains a primary function area, the route to that area and any toilet rooms or drinking fountains that serve that area must be evaluated for accessibility.
- If they are not accessible, additional improvements are required.



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## Primary Function Area

- A major activity for which the facility is intended.
- Excluding areas such as:
  - Mechanical room or boiler room
  - Supply storage
  - Employee lounge or locker room
  - Janitors closet
  - Entrances
  - Corridors
  - Restrooms



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## Accessible Route Exceptions

- The cost of the accessible route exceeds 20% of the cost of the alteration.
- The alteration is limited to items that will not alter the physical configuration or use of the space.
- The alteration is to improve accessibility.
- The route is to Type B units only.



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## Number 1 & 2 complaints in existing buildings

**Parking**




**Toilet Rooms**





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## Basis for Technical Requirements



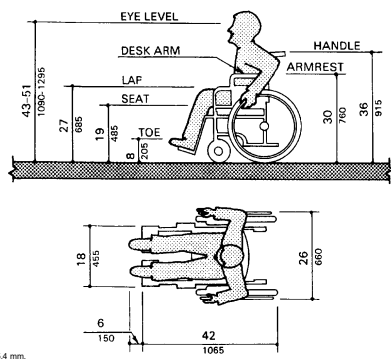



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## Dimensions of Adult-Sized Wheelchair



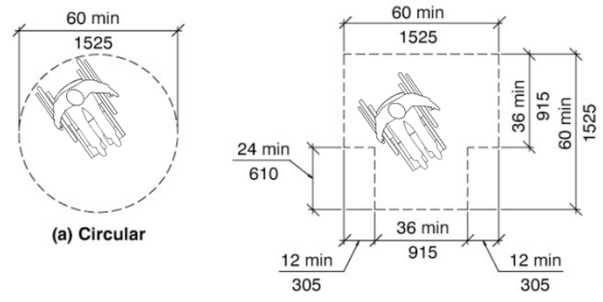



For SI: 1 inch = 25.4 mm.




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## Wheelchair Turning Space



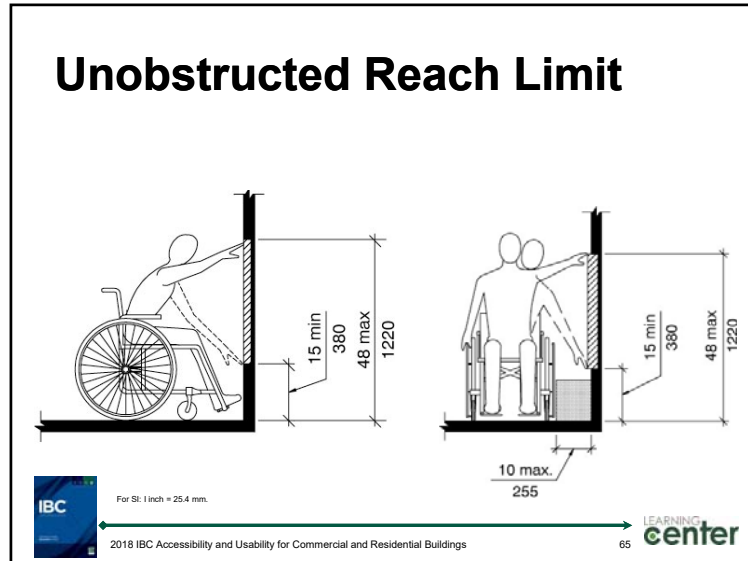


For SI: 1 inch = 25.4 mm.

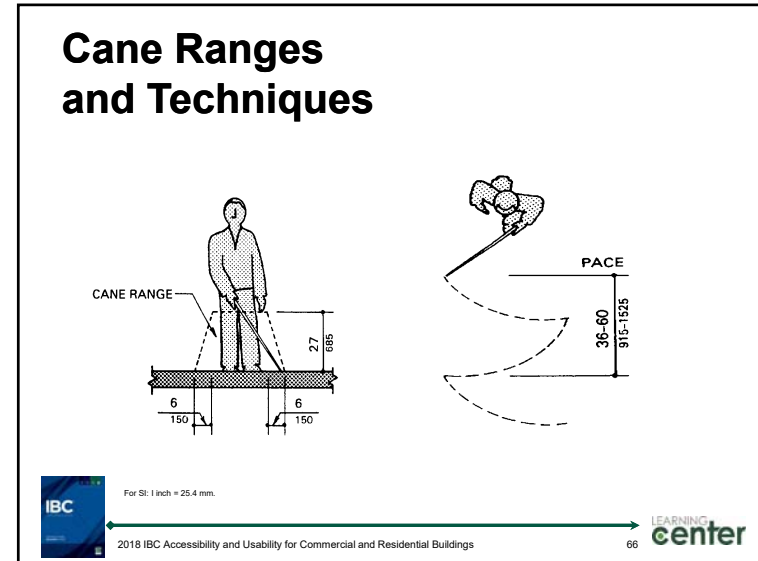


64





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## Children Requirements

Unobstructed Children's Reach Ranges			
Forward or Side Reach	Ages 3 and 4	Ages 5 through 8	Ages 9 through 12
High (maximum)	36 in.	40 in.	44 in.
Low (minimum)	20 in.	15 in.	16 in.

For SI: 1 inch = 25.4 mm.

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## 2017 ICC A117.1

- Will **NOT** be referenced in the 2018 IBC
- Many revisions based on a study sponsored by the Access Board on Anthropometry of Wheeled Mobility
- <http://www.udeworld.com/anthropometrics.html>

For SI: 1 inch = 25.4 mm.



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## 2017 ICC A117.1

Revisions include items such as

- 30"x52" clear floor space
- 67" turning circle
- 8" chamfered corners on turns for 36" wide aisles and corridors
- Changes to turning spaces allowances to use knee and toe clearances
- Will not be referenced in the 2018 I-Codes
- Will be referenced in the 2021 I-Codes



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## Definitions


### 107.5 Existing Building (New)



- New definition
- Needed due to desire to lessen impact of 2017 changes
- Defined as building erected prior to adoption of 2017 standard or for which a permit has been issued



Significant Changes to the ICC A117.1 - Accessibility Standard - 2017 Edition





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## Definitions

### 107.5 Existing Building

- Definition becomes important in deciding if the provisions for new or existing building apply
  - Existing buildings will be permitted to use specific provisions from 2009 standard
  - New buildings will use provisions from 2017 standard – which generally require larger sizes



Significant Changes to the ICC A117.1 - Accessibility Standard - 2017 Edition

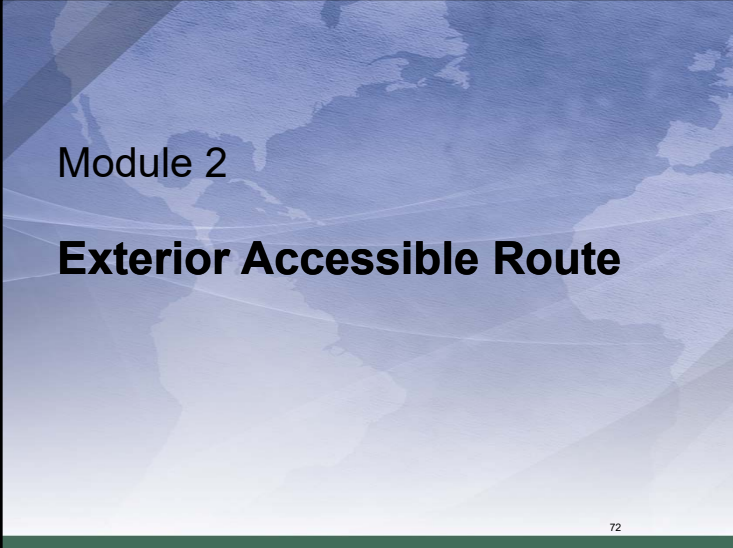


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## Module 2

# Exterior Accessible Route



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## Exterior Accessible Route

- Exterior Accessible Routes
  - Locations and Elements
  - Curb Ramps
  - Ramps
- Accessible Parking Spaces
- Passenger Loading Zones
- Signage.



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## Public Arrival Points

- Accessible routes start at public arrival points such as:
  - Accessible parking spaces
  - Bus drop offs
  - Public transportation stops
  - Where a building sidewalk connects to the public sidewalk



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## Accessible Entrances

- Accessible routes connection public arrival points to accessible entrances



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## Other elements on the site

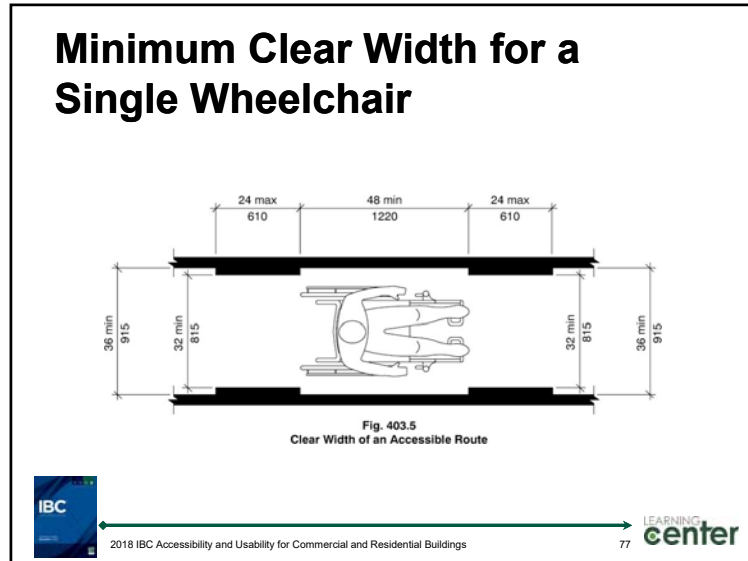
- Accessible routes are required to all facilities offered on the site.
- Exception: Where the only access is by a vehicular route, then the accessible route can also be provided by that vehicular route.



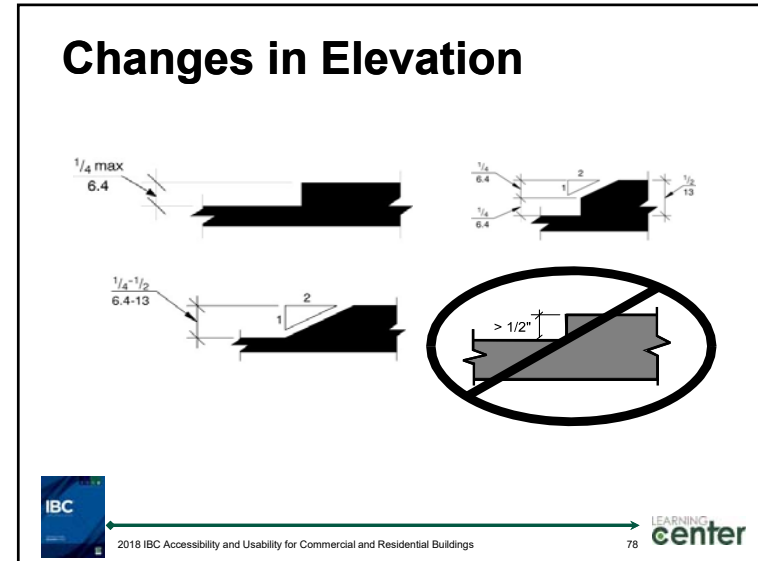
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### Hazards

- Grates
- Platform edges
- Raised and marked crossings

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### Protruding Objects

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## Protruding Objects

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## Cut-in Curb Ramps

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X = 36" minimum in new construction

On existing sites, if landing is <36" then slope of flared sides shall not exceed 1:12.

## Built-Up Curb Ramps

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LEARNING center 83

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On existing sites, if landing is <36" then slope of flared sides shall not exceed 1:12.

## Detectable Warnings at Curb Ramps

- Detectable warnings are not required on curb ramps by IBC or A117.1
- If a designer chooses to provide detectable warnings, then technical provisions are provided for area covered, location, pattern and contrast.

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## Painting at Curb Ramps

- Surfaces are required to be slip resistant, so don't paint the curb ramp or flared sides
- If the curb is painted, then just the curbs on the flared sides are painted



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## Curb Ramp Location

- A 36" minimum landing must be available at the top of the curb ramp
- A depressed sidewalk with curb ramps at each end is permitted
- Don't put a built up curb ramp overlapping the access aisle
- Locate so that they will not be obstructed by parked cars



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## Curb Ramp Allowances

- Curb ramps can have a rise of more than 6 inches.
- Curb ramps do not have to have handrails.
- Curb ramps are not required to have flared sides.



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## Signage

Where not all entrances are accessible

- At accessible entrances
- Directional signage at non-accessible entrances



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## Impact – Exterior route

**Wider sidewalks**      **Wider passenger drop offs**






  Significant Changes to the ICC A117.1 - Accessibility Standard - 2017 Edition 89

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## Impact – Exterior route

**Options for curb cuts**      **Blended transitions**





  Significant Changes to the ICC A117.1 - Accessibility Standard - 2017 Edition 90

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## Accessible parking and passenger loading zones

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## Accessible Parking Spaces

- Based on number of parking spaces provided.
- Number of parking spaces required per zoning ordinances.
- Accessible spaces required:
  - Table 1106.1 for general parking.
  - 2% for Group R-2 and R-3.
  - 10% at hospitals facilities.
  - 20% at mobility treatment centers.
  - 1 of 6 accessible spaces sized for a van

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## Dispersion by Type

- Parking lots
- Parking garages
- Carports
- Private garages
- Pay/free
- Employee/visitor only

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## Parking Locations

- Locate on the shortest accessible route to an accessible entrance.
- Multi-entrance building or multi-building sites – disperse spaces
- Exception:
  - Van spaces on ground level of parking garages (vertical clearance of 98 inches)
  - Grouped where better access is provided

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## Dimensions of Parking Spaces in Parking Lot

ACCESSIBLE SERVING CAR PARKING SPACES

ACCESSIBLE ROUTE

ACCESSIBLE SERVING VAN PARKING SPACES

AREA TO BE MARKED

AREA TO BE MARKED

FULL LENGTH OF PARKING SPACE

36 MIN 915

96 MIN 2440

60 MIN 1525

132 MIN 3350

60 MIN 1525

For SI: 1 inch = 25.4 mm.

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## Alternative Space

accessible route

36 915

96 min 2440

60 min 1525

96 min 2440

96 min 2440

96 min 2440

252 min 6400


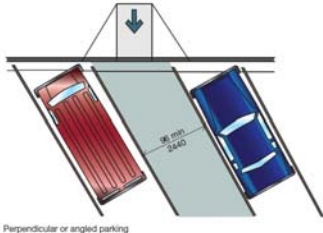
For SI: 1 inch = 25.4 mm.

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## Parking Spaces

Perpendicular or angled parking

- Added provisions related to diagonal parking and on-street parking
- On-street provisions based on and coordinate with PROWAG



(New) Standard previously did not provide guidance or requirements for on-street parking

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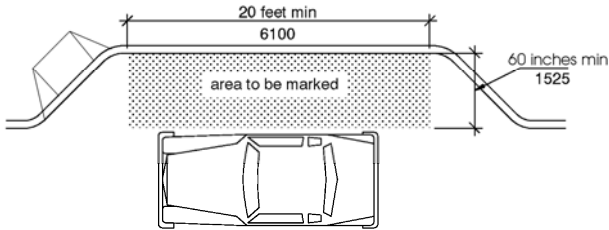
## Passenger Loading Zones



- At least one in Group I-1 and I-2
- At the entrance where valet parking is provided
- Where passenger loading zones are provided, they must be accessible

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## Passenger Loading Zones








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## Allowances

- Passenger loading zones do not have to have a confined length. The intent is to allow for a location where people can transfer in safety.
- Vertical clearance is 114" minimum

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## Signage

- Accessible parking must have a sign
- Exceptions:
  - Fewer than 4 total parking spaces
  - In Group I-1, R-2, R-3 and R-4 where parking is assigned to residents
- Access aisles should be marked to discourage parking on them
- The space is not required to be marked
- Accessible passenger loading zones must have a sign



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## Good or Bad?



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## Good or Bad?



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## Vehicle Charging Stations

- New scoping provisions now require electrical vehicle charging stations to meet limited accessibility criteria.
  - Charging stations provided to serve Group R-2, R-3 and R-4 occupancies are not required to comply.
- To be viewed as a “service” rather than a parking space
- Neither the IBC nor ICC A117.1 mandate the installation of such stations, but if they are provided they must comply with these two accessibility requirements:
  - Minimum of 5% of vehicle spaces on site, but not less than one of each type of system, shall be accessible.
  - Accessible vehicle spaces to comply as for a van accessible parking space, with:
    - 132 inches minimum width, and
    - Minimum 60-inch-wide access aisle.

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### ACTIVITY Module 2 Problem

- Evaluate the accessible parking and the exterior accessible route on this site.
- Might there be different considerations if this is an existing site?

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**ACTIVITY**



## Module 2 Answer

**Requirements met:**


- The number of accessible spaces required is correct (IBC Section 1106.1).
- Access aisles may be shared between accessible spaces (ICC A117.1 Section 502.4).
- An accessible route is required from the accessible parking to the accessible entrance (IBC Section 1104.1).



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**ACTIVITY**



## Module 2 Answer

**Requirements not met:**


- There should be a van accessible space (IBC Section 1106.5).
- The accessible spaces should be those located closest to the accessible entrance (IBC Section 1106.6).



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**ACTIVITY**



## Module 2 Answer

These requirements are not indicated on the plan, but must also be considered:


- Parking and aisle width requirements per ICC A117.1 Sections 502.2 and 502.4.2.
- Parking and aisle sloping requirements according to ICC A117.1 Section 502.5.
- Signage is required according to IBC Section 1111.1 and ICC A117.1 Section 502.7.



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**ACTIVITY**



## Module 2 Answer

These requirements are not indicated on the plan, but must also be considered:

- Width of accessible route is 36 inches minimum (ICC A117.1 Section 403.5).
- Accessible route requirements listed in ICC A117.1 Sections 402 and 403.
- Curb ramp requirements covered in ICC A117.1 Section 406.



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**ACTIVITY**

## Module 2 Answer

**Discussion**

- On an existing site there might be revisions to the accessible parking and route based on alterations to a primary function space within the building (IBC Section 3411.7). Limitations would be based on technical infeasibility and 20 percent of the cost of the alteration.




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## Module 3

# Accessible Entry vs. Accessible Exits




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## Accessible Entry vs. Exits

- Comparison of Requirements.
- Accessible Entrances.
- Accessible Means of Egress.
- Visible and Audible Alarms.


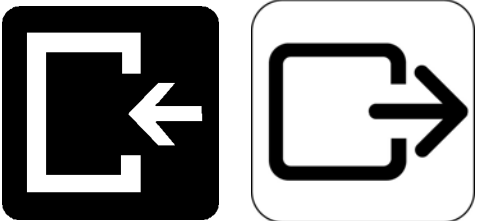


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## Entrance/Exit Requirements—Introduction

- Requirements for both entry and egress must be addressed and the most restrictive applied.



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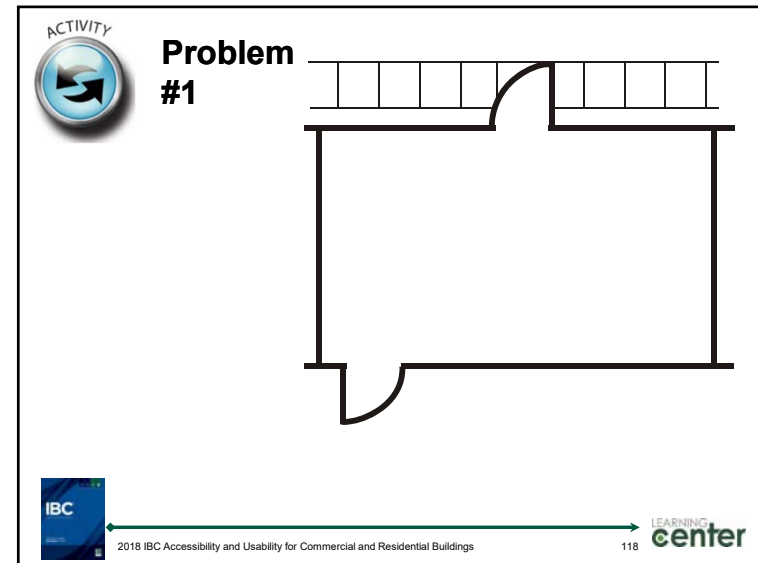
116

### Accessible Entry vs. Accessible Exit

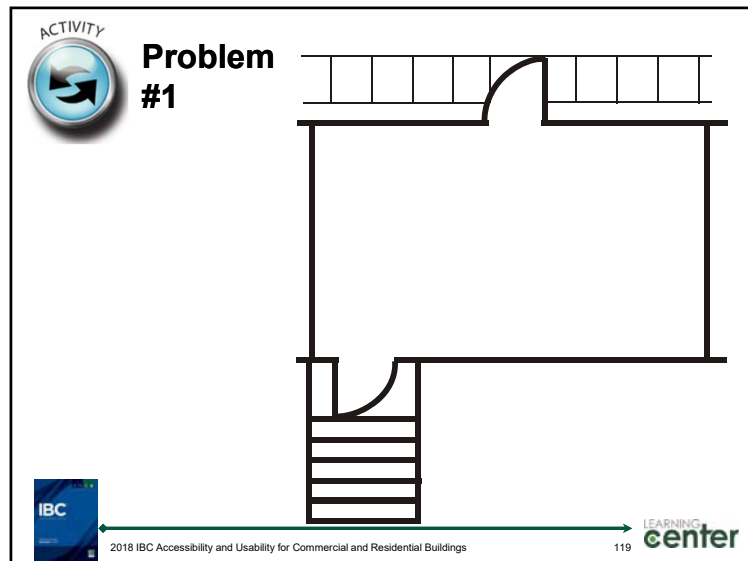
TERM	DEFINITION	EXAMPLE	REQUIRED #
Accessible Entry	Consists of: <ul style="list-style-type: none"> <li>•Exterior accessible route.</li> <li>•Accessible entrances.</li> <li>•Interior accessible route.</li> </ul>	Elevator	60% of the entrances
Accessible Exit	Consists of: <ul style="list-style-type: none"> <li>•Exit access via interior accessible route.</li> <li>•Area of refuge/Exit.</li> <li>•Exit discharge.</li> </ul>	Exit Stairway	1 with 1 MOE 2 with 2+ MOE

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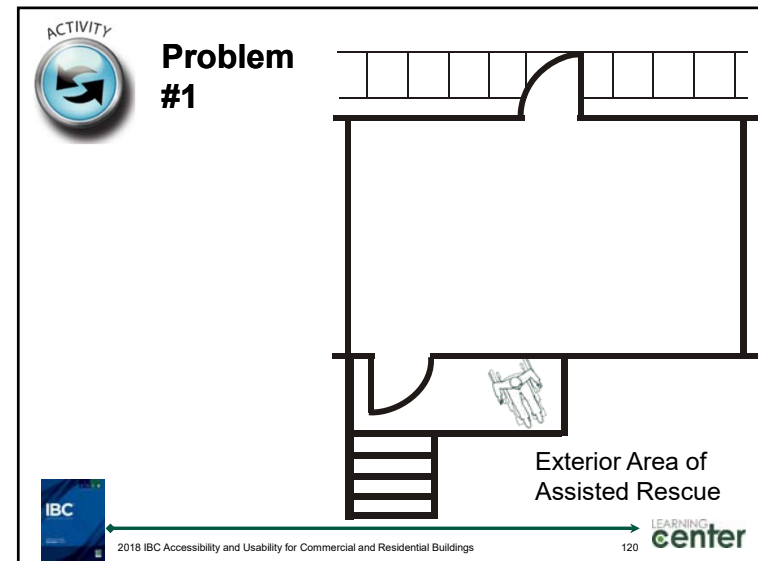
117



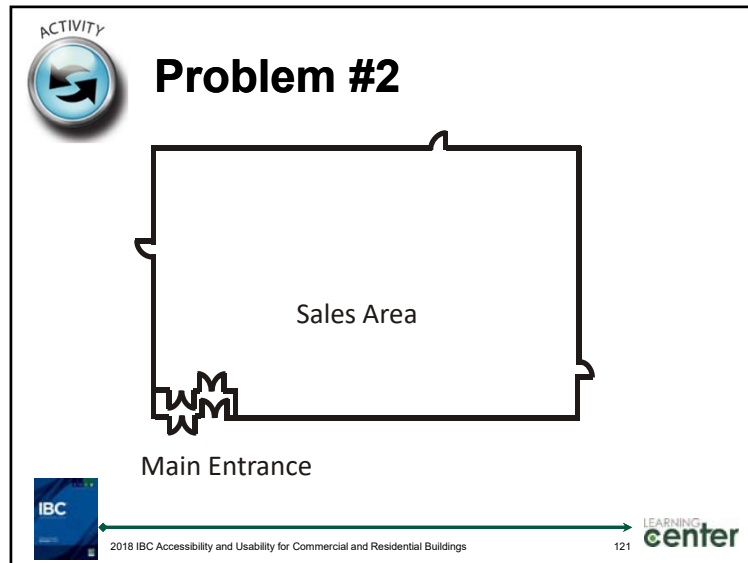
118



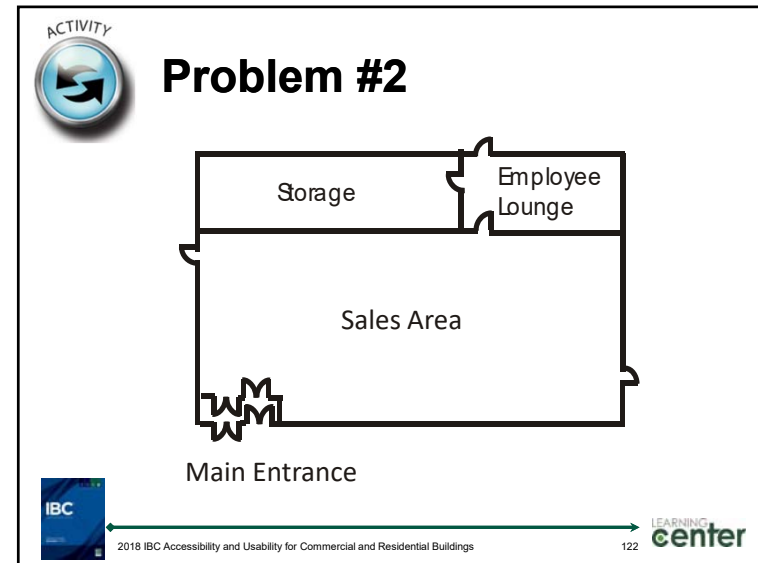
119



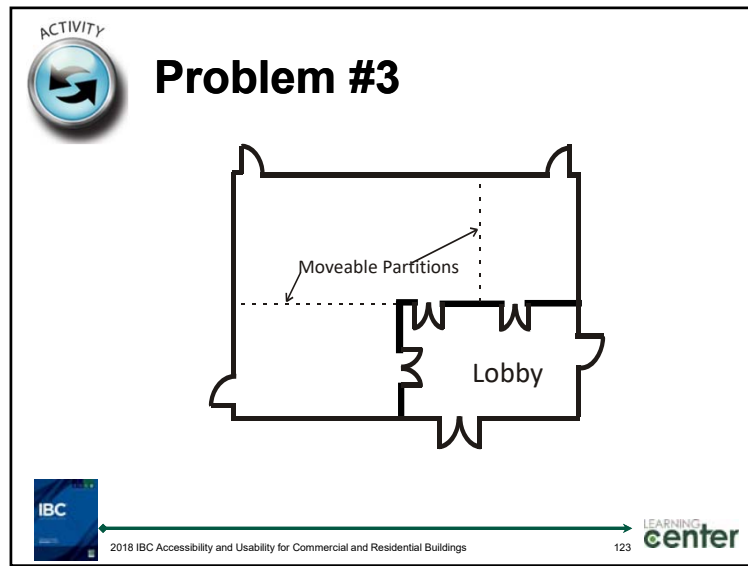
120



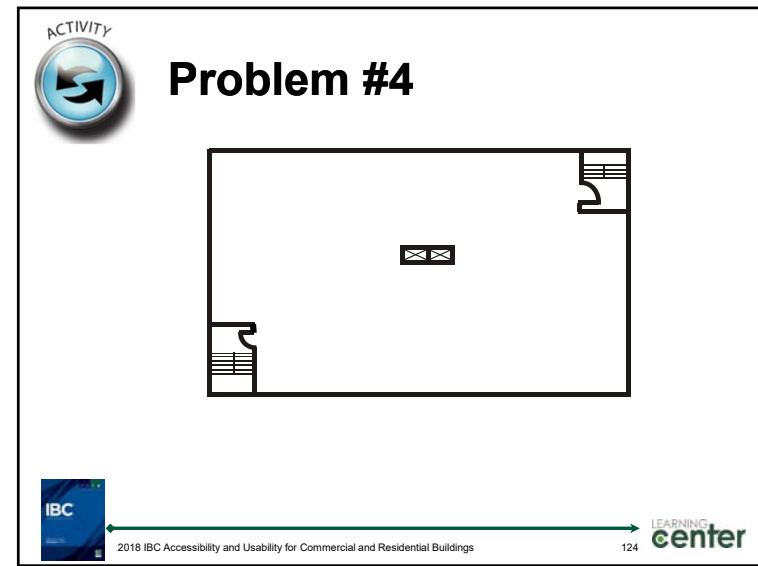
121



122



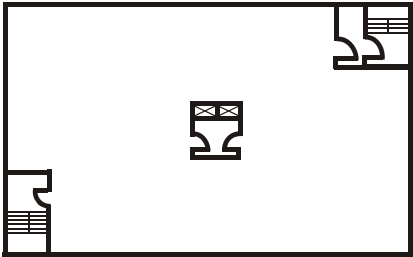
123



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**ACTIVITY**

## Problem #4



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## Accessible Entry



Aug. 11, 1959: In the heart of the Bolivian jungle, archaeologists discover an ancient and heretofore unknown sacrificial altar.

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## Accessible Entrance



- Special entrances – at least one:
  - Parking garages
  - Tunnels
  - Elevated walkways
  - Restricted
  - Inmates or detainees
- Public entrances – 60%.
- Individual entrance
  - Tenants
  - Accessible Group I and R dwelling and sleeping units

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## Exceptions

- Areas not required to be accessible.
- Doors that serve as means of egress only.
- Service entrances that are not the only entrance to a tenant.

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## Interior Routes

- Connect accessible entrances to accessible spaces within the building
- The accessible route must allow for unassisted access


Ramps




Horizontal surfaces



Platform lifts



Elevator






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## Additional Routes

- Connections between dwelling and sleeping units and all shared facilities (e.g., dining halls, lobby, laundry, mailrooms).

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## Automatic Doors at Public Entrances

- In specified occupancies with sizable occupant loads, the accessible public entrances must now be provided with an automatic door.
- Where an automatic door is required by Table 1105.1.1, it shall be either a full power-operated door or a low-energy power-operated door.

**TABLE 1105.1.1 Public Entrance with Power-Operated Door<sup>a</sup>**

Occupancy	Building Occupant Load Greater Than
A-1, A-2, A-3, A-4	300
B, M, R-1	500



a. In mixed-use facilities where the total sum of the building occupant load is greater than those listed, the most restrictive building occupant load shall apply.

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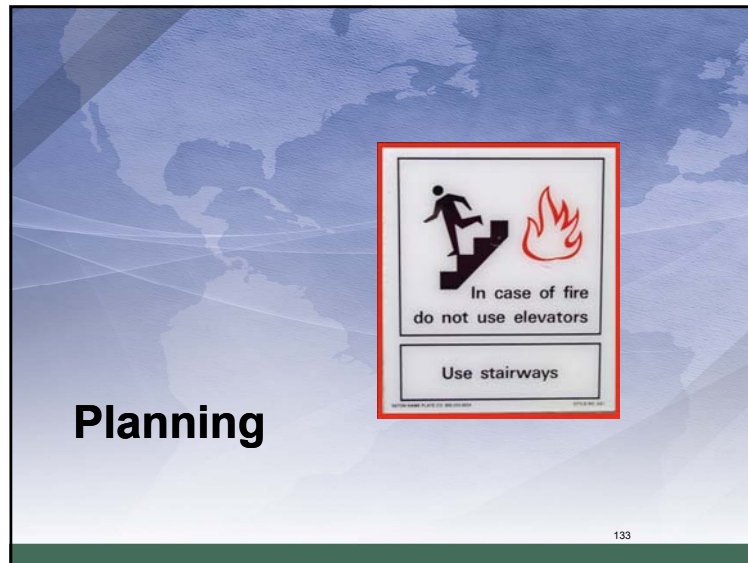
## Automatic Doors at Public Entrances

- In mixed-occupancy buildings where total building occupant load exceeds that listed, the most restrictive building occupant load shall apply.
- Where the public entrance includes a vestibule, at least one door into and one door out of the vestibule must comply with the requirements.
- Very important to understand that doors that require card or key entry will most likely still be considered public entrances.**

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## Pre-Planning for Emergencies

- Fire evacuation plans
- Fire safety plans
- Lockdown plans
- Associated drills
- Worked out with the building owner/renter and the fire department
- Updated annually or when necessitated by changes
- Available for review




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## Pre-Planning for Emergencies

Required in:

- Assembly
- Churches over 2,000 occupants
- Educational
- College dormitories
- High Hazard
- Institutional
- Hotels
- Group homes




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## Pre-Planning for Emergencies

Required in:

- High-rise buildings
- Covered malls > 50,000 sq.ft.
- Mercantile & Factory (> 500 occupants on the 1st floor and basements or 2nd floor > 100 occupants)
- Underground buildings
- Assembly, Educational and Mercantile with atriums



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## Fire Evacuation Plans

- Emergency routes
- Strategy - Evacuation or defend in place
- Critical equipment operation
- **Assisted rescue procedures**
- Verifying full evacuation
- Emergency responders
- Notification of occupants
- Notification of fire department
- Emergency voice/alarm communication system



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## Fire Safety Plans

- Reporting emergency
- Evacuation or relocation of **all** occupants
- Site plans – occupancy assembly point, fire hydrants, fire truck route
- Floor plans – exits, routes, **areas of refuge**, fire alarm, extinguishers, fire hoses
- Major fire hazards
- Persons responsible



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## Lock-down plans

- Occupant notification
- Emergency responders notification
- Accountability
- Recall
- Communication
- Coordination
- Training



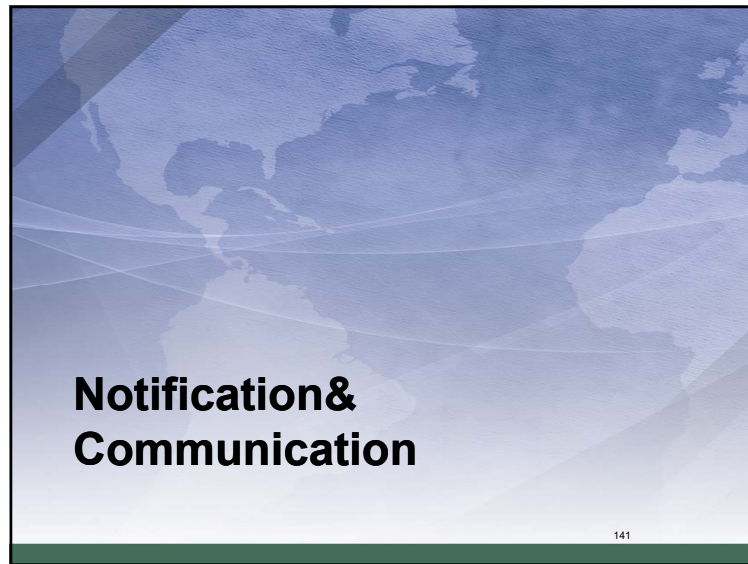
139

## Emergency Drills

- Assembly – quarterly
- Business – annually
- Educational – monthly
- Factory – annually
- Institutional – quarterly on each shift
- Hotel - quarterly on each shift
- Apartments/dorms – 4 times annually
- Group homes - quarterly on each shift
- High rise - annually



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## Signage

- Evacuation plans at elevators
- Signage at any non-accessible exits

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## Signage

- Visual exit signs at stairway entrances
- Tactile exit signs at stairway entrances

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## Signage

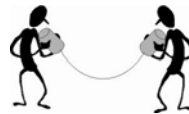
- Visual signage within the stairway
- Tactile signage indicating floor levels
- Tactile signage at the door leading to the exit discharge

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## Two-way Communication

- Within areas of refuge
- At elevator lobbies in sprinklered buildings (added into 2009 IBC)
- Variety of options
- Allow for communication and feedback between emergency responders and people who need assistance



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## Audible and Visible alarms

- Installed in accordance with NFPA 72.
- Manual fire alarm pull stations must be accessible.



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## Visible Alarms

- All public spaces.
- All common spaces.
- Group I-1 (assisted living) and R-1 (hotel) units per Table 907.5.2.3.2.
- Future expansion for:
  - Individual employee work areas.
  - Smoke alarms in Group R-2 (apartments) units.



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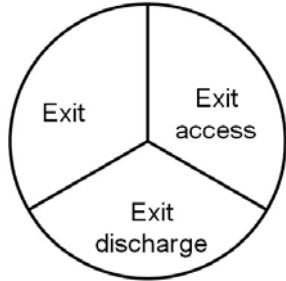
## Accessible Means of Egress (MOE)



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## Elements of Accessible MOE

An accessible means of egress is a continuous and unobstructed accessible route of egress travel from any accessible point in a building or facility to a public way.





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## Accessible Exit Access



Ramps



Horizontal surfaces



Platform lifts with standby power




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## Accessible Exit



Exit Door



Exit Stairs



Horizontal Exit



Elevator with standby power




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## Accessible Exit Discharge

Allow for self evacuation when possible




Drawing courtesy of Access Board


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## Accessible MOE

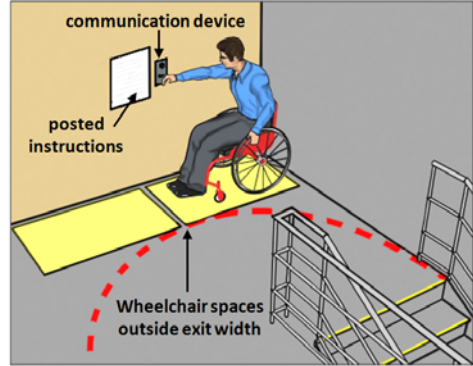
- Assisted rescue when necessary
- Defend in place (i.e., hospitals, jails)
- Assisted evacuation at stairways
- Assisted evacuation at elevators with standby power



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## Areas of Refuge




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## ADA & ABA Standards §207

- Require compliance with the International Building Code (IBC) for accessible means of egress




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## ADA & ABA Standards

- What about compliance with later editions?
- Permitted where equivalent or better ("equivalent facilitation" in the ADA Standards Section 103)



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## AMOE: Minimum Number

- Minimum number of AMOE required:
  - 1 AMOE - where 1 MOE required
  - 2 AMOE- if more than 1 MOE required
- Exceptions:
  - Existing facilities
  - Areas not required to be accessible



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## Special Consideration

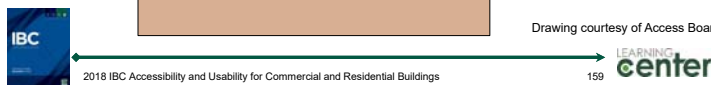
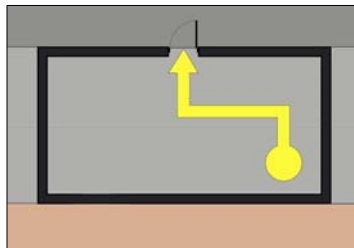
- Mezzanines.
- Wheelchair spaces in Assembly seating with sloped or stepped floors.
- Areas accessed only by platform lifts.



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## Example: 1 MOE/AMOE

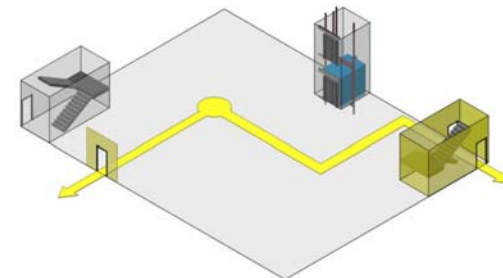
- 1 MOE & 1 AMOE allowed under these conditions:
  - mercantile occupancy; and
  - 49 or fewer occupants; and
  - 75' max. travel distance from farthest point



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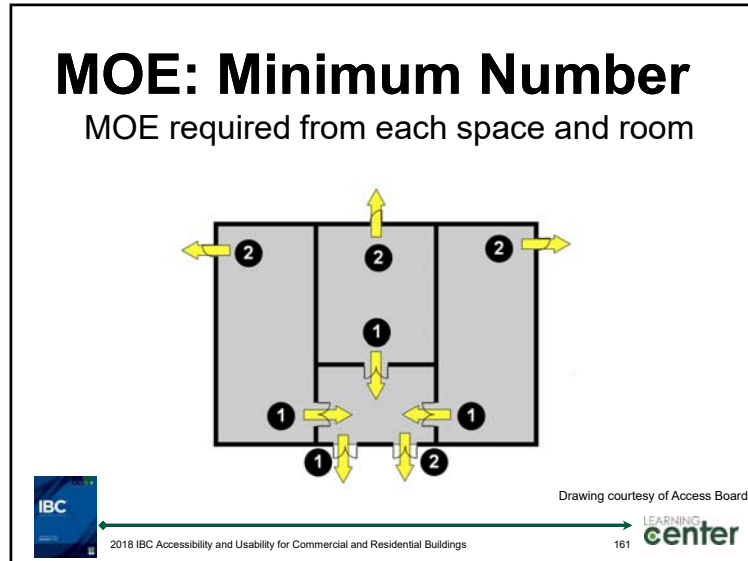
## MOE: Minimum Number

- IBC requires 2 or more MOE in most facilities with few exceptions

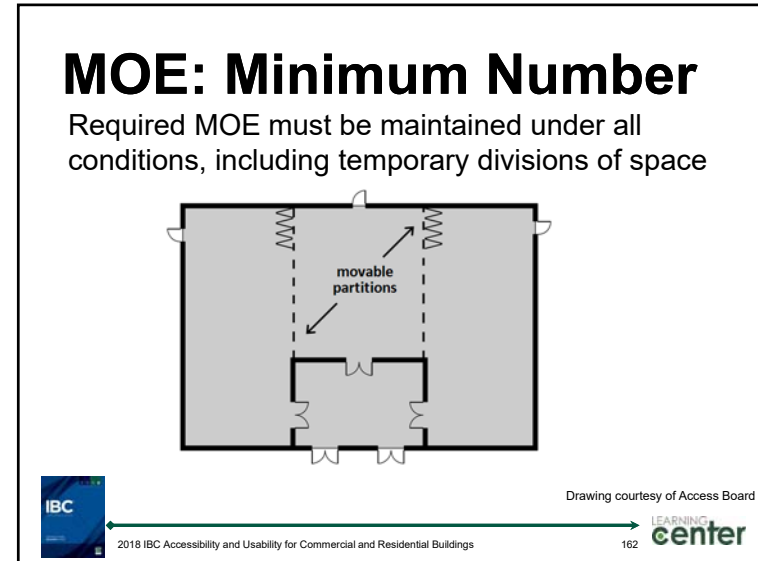


160

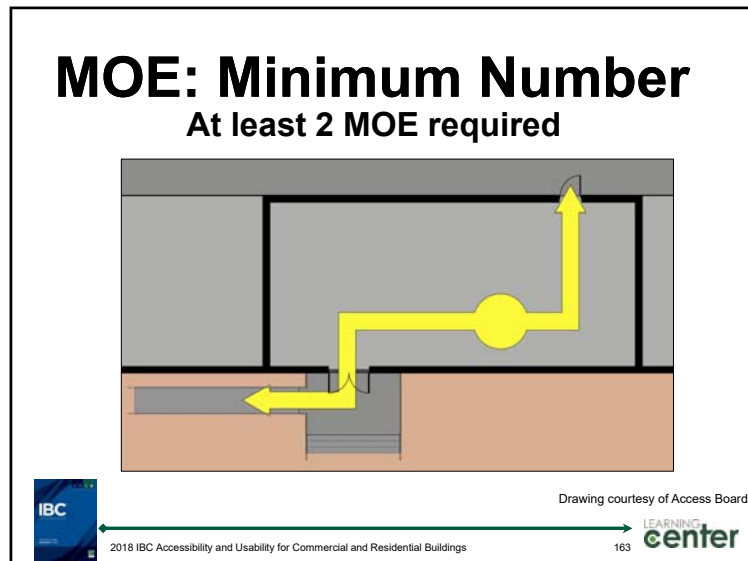




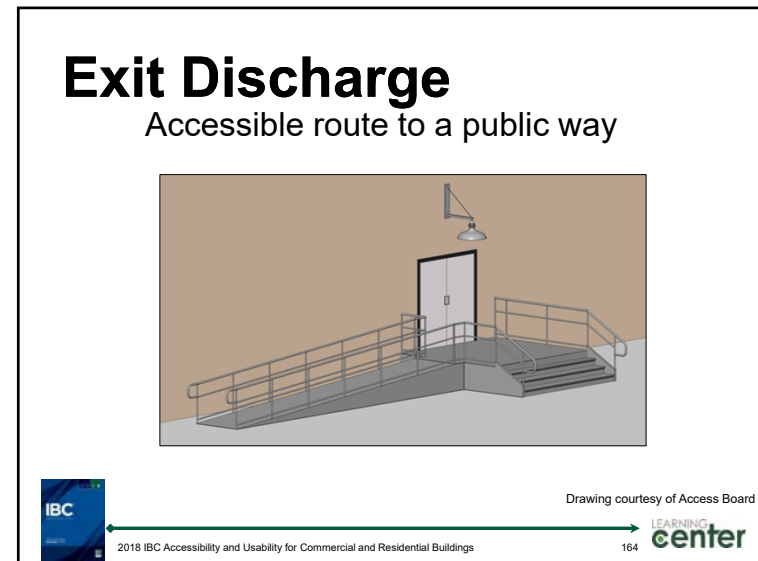
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## Accessible Exit Discharge

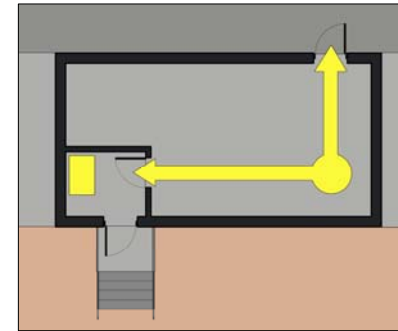
- If exit discharge is not accessible:
  - Steps
  - Steep site
  - Snow
- Interior area of refuge, or
- Exterior area of rescue assistance.
- No exceptions for sprinklered buildings.



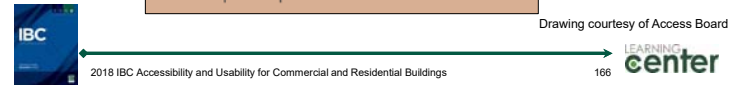
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## Exit Discharge

Interior Area of Refuge



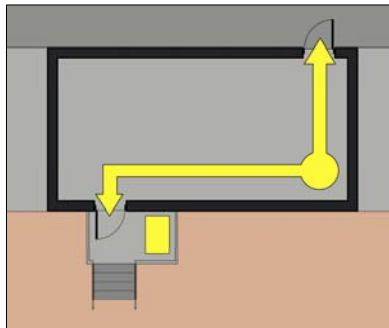
Drawing courtesy of Access Board



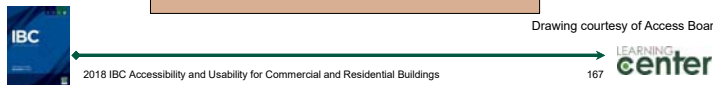
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## Exit Discharge

Exterior Area for Assisted Rescue

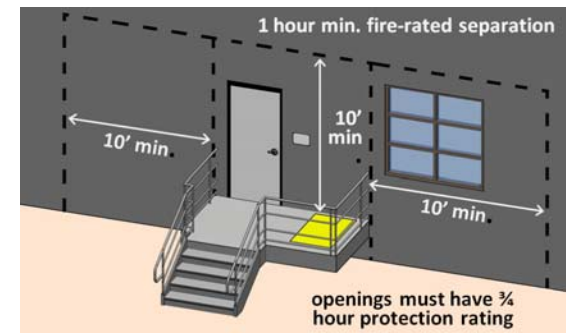


Drawing courtesy of Access Board



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## Exterior Area for Assisted Rescue



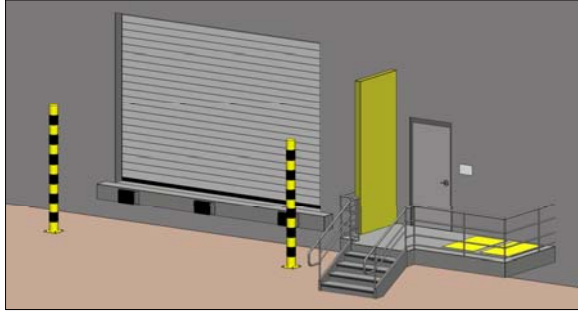
2018 IBC: Section 1009.7.2 has added an exception for the exterior wall and opening rating in sprinklered buildings for exterior area of assisted rescue. However, this is not an exception for the space.

Drawing courtesy of Access Board



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### Exterior Area for Assisted Rescue



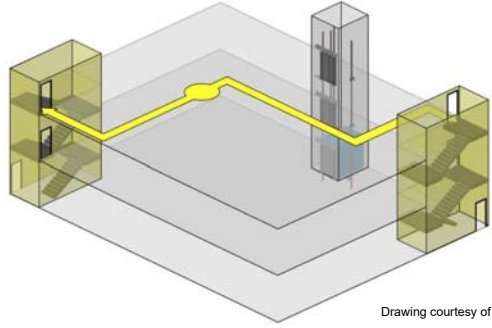
2012 IBC: New provision for alternative protection from openings adjacent to the exterior area of assisted rescue.

IBC 2018 IBC Accessibility and Usability for Commercial and Residential Buildings 169 LEARNING center Drawing courtesy of Access Board

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### Exit Access: Upper Floors

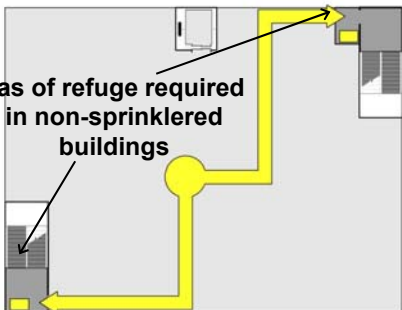
AMOE on floors above or below level of exit discharge connect to exit stairs



IBC 2018 IBC Accessibility and Usability for Commercial and Residential Buildings 170 LEARNING center Drawing courtesy of Access Board

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### Exit Access: Upper Floors

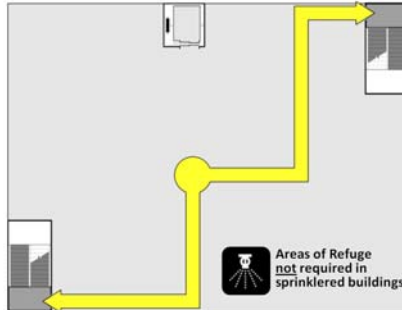


Areas of refuge required in non-sprinklered buildings

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### Exit Access: Upper Floors



Areas of Refuge not required in sprinklered buildings

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## Stairways

- Exit stairway or exit access stairways between stories or mezzanines.
- 48" clear width.
- Accessed from area of refuge.



Fireman's carry



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## Exceptions to IBC 1009.3.3 – Area of Refuge

- Open exit access stairways.
- Stairway is accessed from a horizontal exit.
- Buildings with an NFPA13 or NFPA 13R sprinkler system.
- Open parking garages.
- Smoke protected/open air assembly seating.
- Group R-2.



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## Exceptions to IBC 1009.3.2 – 48" clear width

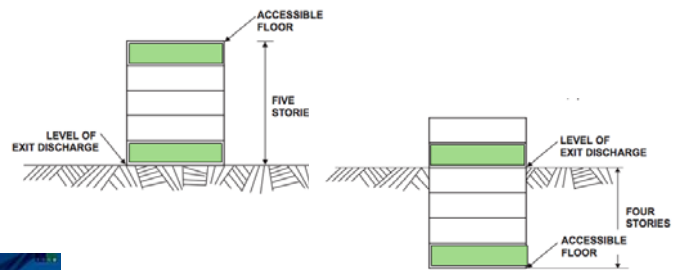
- Buildings with a NFPA13 or NFPA 13R sprinkler system.
- Stairway is accessed from a horizontal exit.



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## Elevator with Standby Power

- Required in buildings with 4 or more stories above or below the level of exit discharge





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## Occupied roof



- What would the requirements be if a 4 story building had an occupied roof?
- 2021 - Standby power would be required for the elevator. There is no exception for a horizontal exits or sprinklers on the roof.



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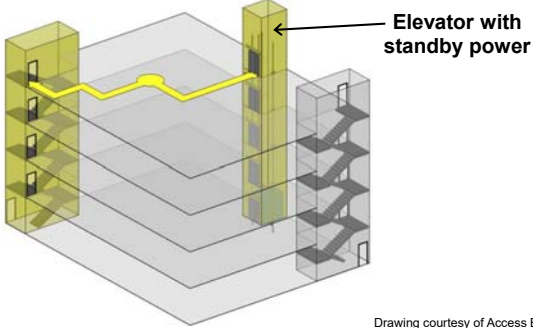


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## Elevator with Standby Power


- Required in buildings 5 stories or higher



Drawing courtesy of Access Board



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## Elevator

- In building 5 stories or taller
- Accessed from area of refuge.
- Standby power



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## Exceptions to IBC 1009.4.2 – Area of refuge

- Elevator is accessed from a horizontal exit.
- Open parking garages.
- Building sprinklered with an NFPA13 or NFPA13R system.
- The elevator is not in a shaft.
- Smoke protected/open air assembly seating.



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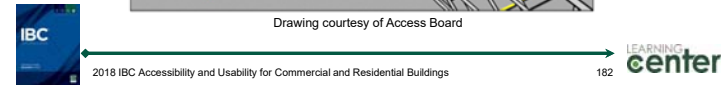
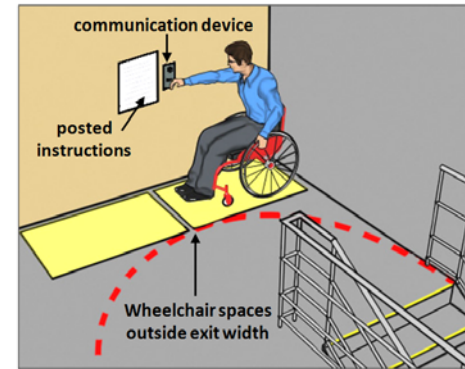
## Exceptions to IBC 1009.2.1 – Standby power

- Buildings with horizontal exits (i.e., defend in place scenarios like a hospital)
- Ramps are provided from all floor levels (i.e., sports facilities or parking garage)



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## Areas of Refuge



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## Area of Refuge

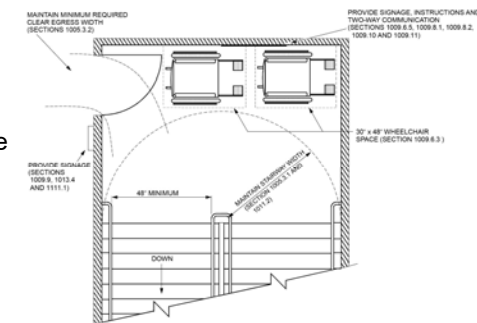
- Accessed by an accessible route.
- Separated by a smoke barrier.
- Direct access to an exit stairway, elevator with standby power or, on grade level, an exit.



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## Areas of Refuge

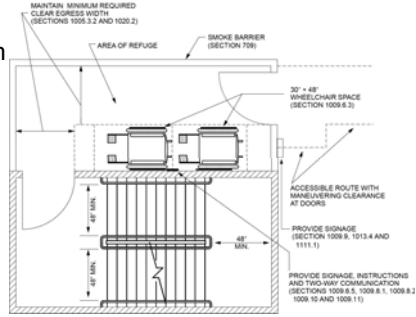
- 30" x 48" space.
- One space for every 200 occupants.
- Access to a space may be through one other space.
- Do not block general means of egress path.



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## Area of Refuge

- Two way emergency communication system
- Identification
- Instructional signage



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## Good or Bad?



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## Good or Bad?



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## Good or Bad?



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## Quick review of AMOE

- In a two story sprinklered building, which AMOE items are exempted?
- Areas of refuge at a stairway
- Exterior wall rating at exterior areas of assisted rescue
- In a two story sprinklered building, which AMEO item is relocated?
- Two-way communication is required at the elevator



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**ACTIVITY**

## Module 3 Problem

- How many exterior doors are required?
- Which doors will most likely serve as the entrances, and how many are required to be accessible?
- Assuming the occupant load is 750, how many doors will serve as exit doors, and how many are required to be accessible?

A floor plan diagram of a sanctuary. At the top is an ALTAR. Below it is the SANCTUARY. On either side of the sanctuary are rows of PEWS. To the right of the sanctuary is a CHANCEL. Below the sanctuary is the NAVE. At the bottom of the sanctuary is the NARTHEX. To the left of the narthex is a COAT ROOM. To the right of the narthex is a RESTROOMS area. The diagram shows three exterior doors: one on the left wall of the narthex, one on the right wall of the narthex, and one on the right wall of the sanctuary.

IBC Learning Center logo and page number 190

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**ACTIVITY**

## Module 3 Answer

**How many exterior doors are provided?**

- Three

**Which doors will most likely serve as the entrances, and how many are required to be accessible?**

- One main entrance is indicated. If that entrance is accessible, that will exceed the 60-percent accessible entrance requirements (IBC Section 1105.1).



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**ACTIVITY**

## Module 3 Answer

**Assuming the occupant load is 750, how many doors must serve as exit doors, and how many are required to be accessible?**

- Three exits are required from the space, and at least two must be accessible (IBC Section 1009.1). Designer's choice as to which two, but they must be distinct.



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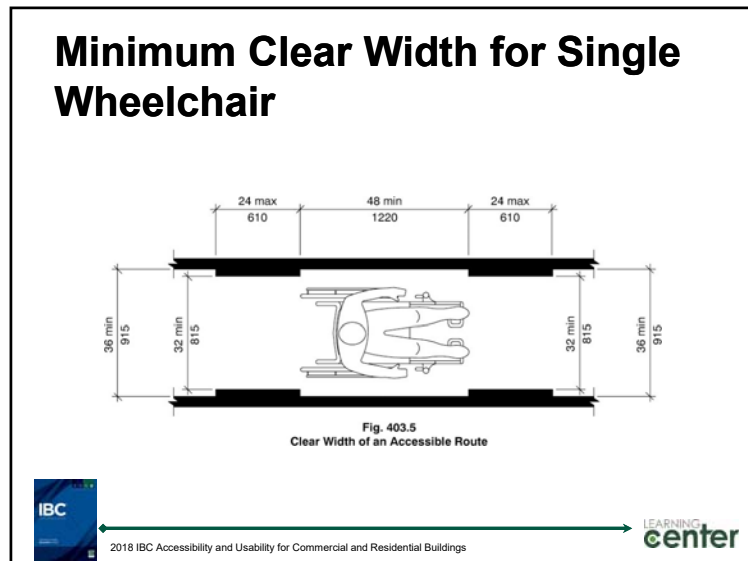
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### Interior Accessible Route

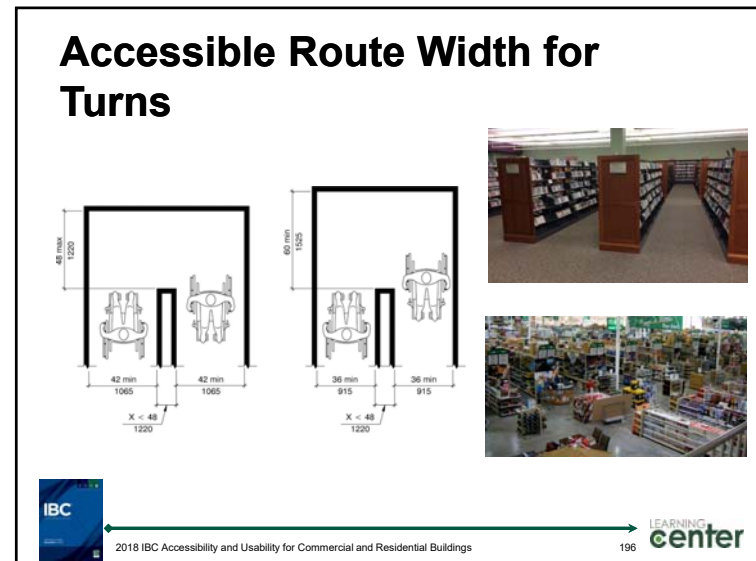
- Technical requirements.
- Doors.
- Elevators and Platform Lifts.
- Stairways and Ramps.



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### Changes in Elevation

1/4 max  
6.4

1/4  
6.4

2  
1

1/2  
13

1/4-1/2  
6.4-13

1  
2

> 1/2"

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### Change in elevator

- Changes at thresholds
- Changes of materials

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### Protruding Objects Along A Circulation Path

4" MAX  
102

27"  
686

80"  
2032

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### Protruding object

IBC

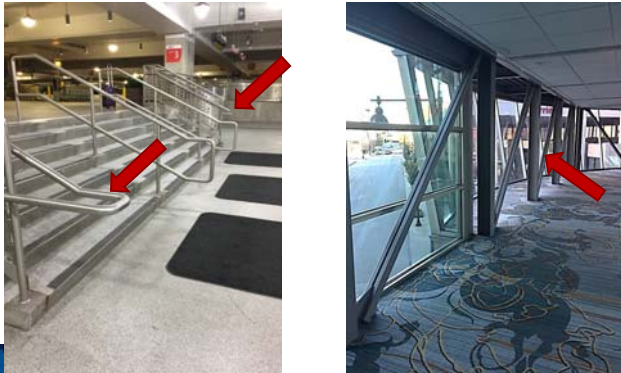
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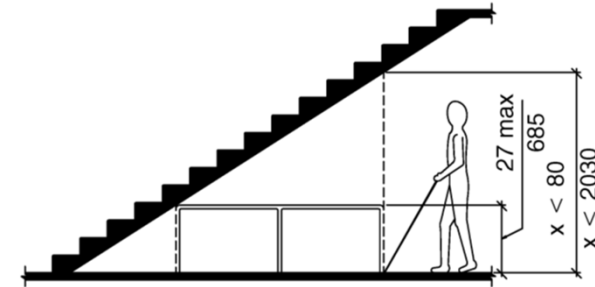
200

### Protruding object



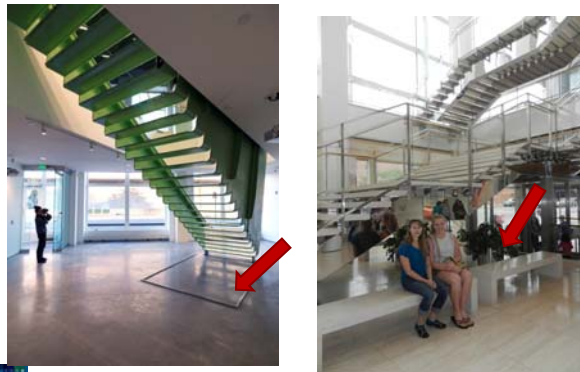
201

### Overhead Protruding Objects



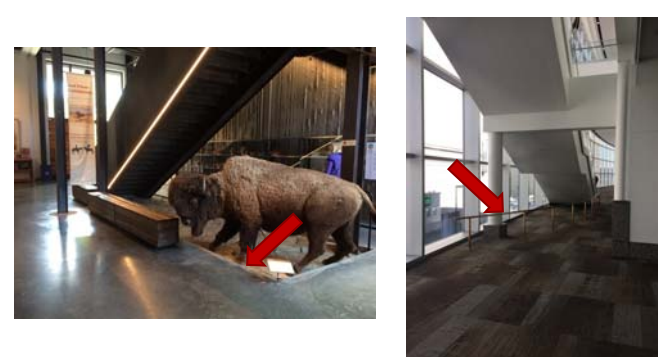
202

### Overhead protruding object



203

### Overhead protruding object



204



205

## Doors

Door Size 1010.1.1

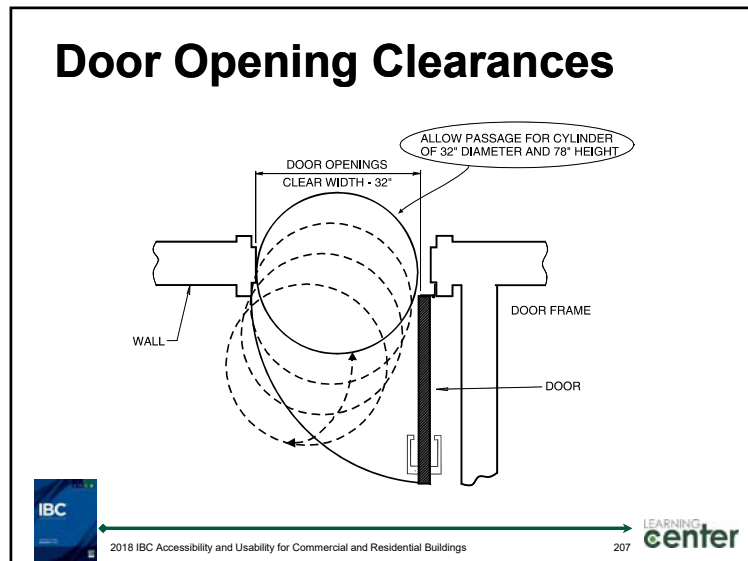
Doors Operation 1010.1.8

Doors in a Series 1010.1.9

Door Swing 1010.1.2

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## Projections into clear with

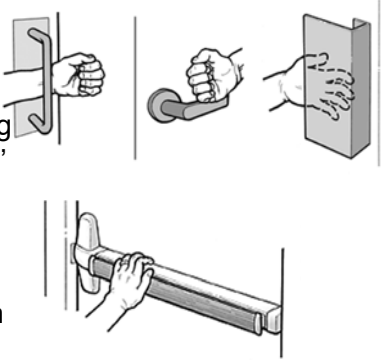


- Projections of 4 inches maximum into the clear door width 34" above the floor allows for panic hardware.
- Door closers and door stops can reduce vertical clearance to 78".

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## Hardware

- Examples of 'no tight pinching, tight grasping or twisting of the wrist.'
- Hardware height is between 34" and 48"
- 5 lbs. force it to open the door after the latch has been disengaged.










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## Door Opening Forces

- To provide coordination with ICC A117.1-2017, technical and format changes now address:
  - Releasing the latching hardware, and
  - Force to open an egress door.
- To unlatch doors:
  - Where door hardware operates by push or pull, the operational force not to exceed 15 pounds
  - Where door hardware operates by rotation, the operational force not to exceed 28-inch pounds.
    - Coordinates with Section 404.3.6 of ICC A117.1











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## Door Surface

- On the push side, the bottom 10" must be clear of obstructions








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## Vision lights

- Vision lights, where provided, must have a bottom edge below 43"
- Vision lights above 66" are exempted



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## Maneuvering Clearances

The diagram illustrates two scenarios for maneuvering clearances. On the left, 'Front Approach, Pull Side' shows a person in a wheelchair approaching a door from the left. The wheelchair's path is a quarter-circle with a radius of 18 inches (445 mm). The total width of the approach is 60 inches (1525 mm). On the right, 'Front Approach, Push Side' shows a person in a wheelchair approaching a door from the right. The wheelchair's path is a quarter-circle with a radius of 12 inches (305 mm). The total width of the approach is 48 inches (1220 mm). Both diagrams show a downward arrow indicating the door's swing direction.

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## Maneuvering Clearances

A photograph showing a person in a wheelchair maneuvering through a doorway. The person is positioned in the center of the doorway, demonstrating the required clearance for a wheelchair to pass through.

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## Maneuvering Clearance

- Required at power assist doors
- Not required a low-power automatic doors and fully automatic doors

A photograph showing a person in a wheelchair positioned at a power assist door. The person is looking towards the door, which is partially open, illustrating the required maneuvering clearance for power assist doors.

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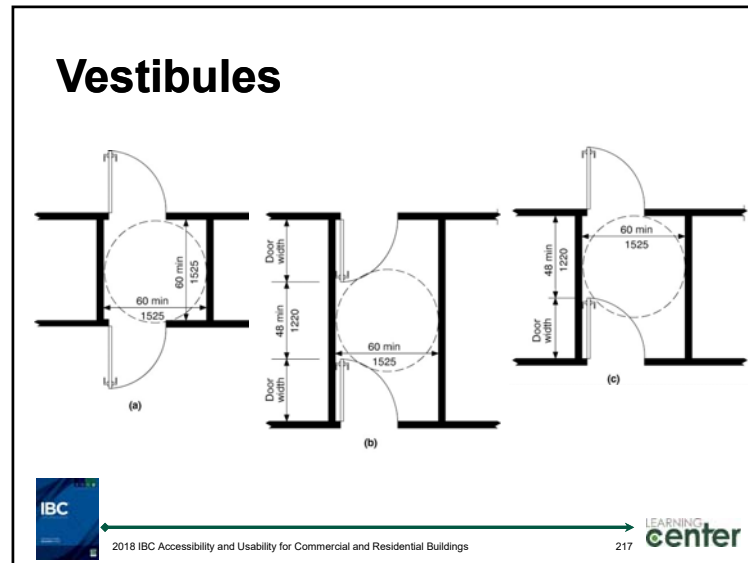
## Maneuvering Clearance

- A117.1 Section 404.2.3 – Required door maneuvering clearances shall not include knee and toe clearances.
- The intent is to disallow for sinks or counters to overlap the maneuvering clearance, but allow for items such as handrail extensions or hand dryers.

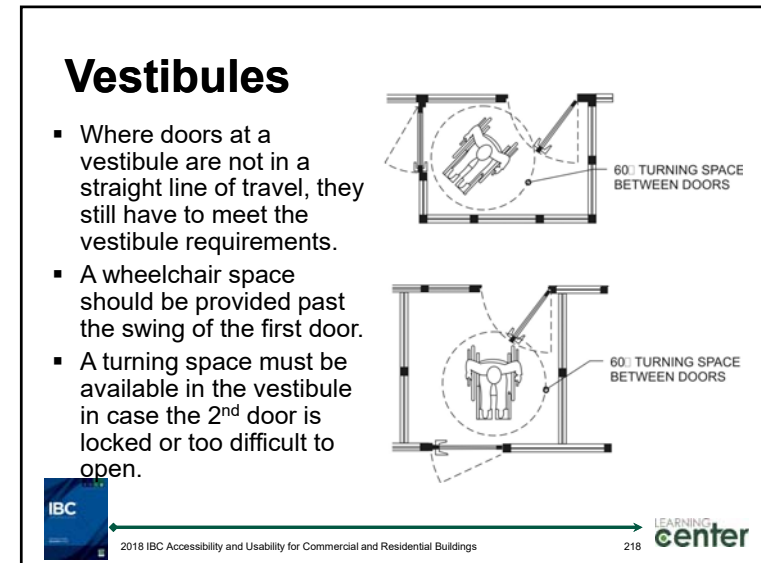
A photograph showing a red door in a bathroom. A sink and counter are positioned in front of the door, overlapping the maneuvering clearance. This illustrates a situation where the required maneuvering clearance is not fully met due to the presence of the sink and counter.

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## Elevators

- ASME A17.1.
- ICC A117.1.
- Permitted to serve as part of the accessible route anywhere.
- 5 story buildings or higher, standby power for accessible MOE.
- 4 stories or higher, one sized for a stretcher.

NOTE: The automatic door reopening device is activated if an object passes through either line A or line B. Line A and line B represent the vertical locations of the door reopening device not requiring contact.

221

## Elevator Car Size

- Access to controls.
- 60" turning circle not required.

222

## LULAs

### Limited Use/Limited Application Elevators

- Considered a type of passenger elevator
- ASME A17.1.
- ICC A117.1.
- Application limited by product:
  - Limited capacity.
  - 25' max. travel.
  - Slow speed.

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## LULA Car Size

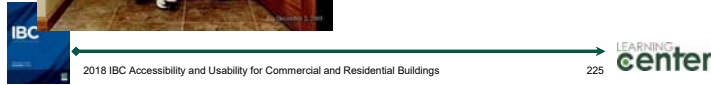
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## Private Residence Elevator



- ASME A17.1.
- ICC A117.1.
- Application limited:
  - Limited capacity.
  - Serve or within an individual dwelling unit.
  - Slow speed.



225

## Platform Lifts



- ASME A18.1.
- ICC A117.1.
- Permitted anywhere in existing buildings.
- Limited application in new construction.
- Standby power when used as part of an accessible means of egress.



226

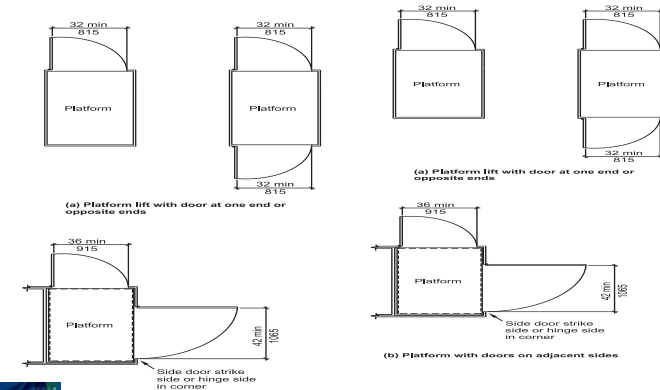
## Platform Lifts

- Performing areas.
- Wheelchair spaces in assembly seating.
- Restricted spaces with <6 occupants.
- Within dwelling and sleeping units.
- Areas in courtrooms.
- Amusement rides.
- Play structures.
- Team or player seating.
- Boating and fishing piers
- Existing exterior constraints.
  - This location cannot also serve as part of an accessible means of egress.



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## Platform Lifts



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## Types

- Scissors lift
- Cantilever
- Screw drive
- Inclined

HYDRAULIC/SCISSORS LIFT: ONLINE TO HYDRAULIC PUMP UNIT, RECESSED PIT LEVEL, DRIVE MECHANISM ENCLOSURE.

CANTILEVERED PLATFORM LIFT: SLOT FOR VERTICAL CARRIAGE MOVEMENT, CARRIAGE FRAME, BASE ASSEMBLY.

SCREW DRIVE COURTROOM LIFT: THRESHOLD RAMP LAG BOLTS TO FLOOR, LIFT BASE FRAME LAG BOLTS TO FLOOR.

INCLINED PLATFORM LIFT: CURVED SAFETY ARM (OPTIONAL), UPPER RAIL, LOWER RAIL, PLATFORM, GRAB RAIL, PLATFORM CONTROL PANEL, FOLD-DOWN SEAT (OPTIONAL), SIDE LOAD RAMP (OPTIONAL), TONER.

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## When must doors be automatic?

TRAVEL WOULD ALWAYS BE PULL-IN / PULL-OUT; THEREFORE, THE EXCEPTION IS APPLICABLE.

TRAVEL BETWEEN LEVELS (1) AND (2) WOULD RESULT IN A PULL-IN / BACK-OUT; THEREFORE, THE EXCEPTION IS NOT APPLICABLE.

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## Controls

- Key access no longer required by the standard.

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231




## Good or Bad?

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## Good or Bad?

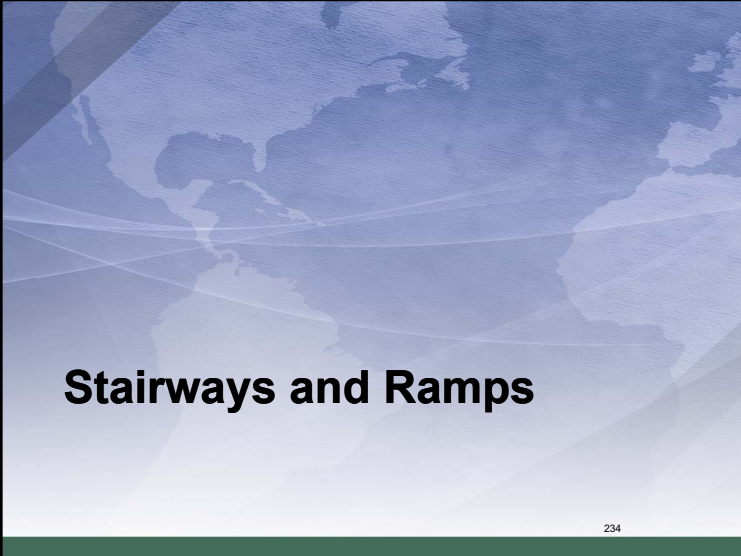


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# Stairways and Ramps







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## Stairways

- Not part of the accessible route into building.
- Part of an accessible means of egress out of building with assistance.
- Mainstreamed requirements with no reference to ICC A117.1.
- Safety provisions for persons with mobility and visually impairments addressed in IBC.




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11 inches min. tread depth  
Riser height 4" to 7"  
1-1/4" max projection of nosings



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## Handrail Extension

- The handrail extension at the bottom is 1 tread depth minimum and sloped.
- The 2010 ADA has removed the requirement for the additional 12" horizontal extension at the bottom.
- The handrail extension at the top is 12" minimum horizontal.
- The extension must be in the direction of the stairway run

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## Solid tread and risers?

- Treads allow for opening 1/2" or smaller
- Risers should not allow for someone to get their foot caught under the tread.

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## Good or Bad?

- Handrail extensions?

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## Stairway Illumination

- Exit stairways, exit access stairways and their associated landings must now have an illumination level under normal power of at least 10 footcandles.
  - Measured at the walking surface
  - Not applicable to stairs in exit discharge
  - Required **only when stairway is in use**, allowing for occupant-sensor or daylight-responsive controls
  - Exceptions for auditoriums, theaters and similar assembly occupancies still applicable
- Considered as an easily accomplished means for improving stairway safety

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## Handrails at Social Stairs – Example (correct)



241

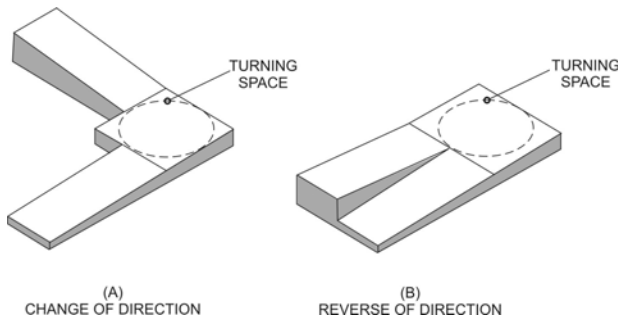
## Ramp Technical Criteria

- >1:20 slope.
- 1:12 slope maximum on accessible routes.
- Change in level at start of ramp
- Surfaces – slip resistant
- Cross slope - < 1:48
- Minimum width – 36” between handrails
- Maximum rise – 30” between landings
- Adequate landings



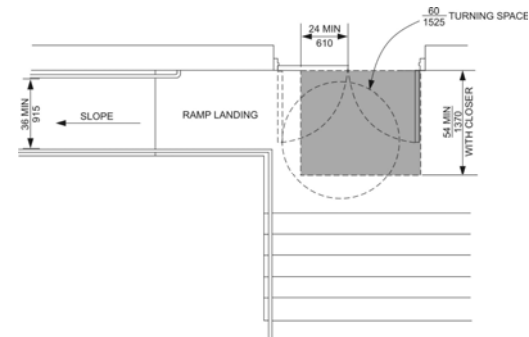
242

## Ramp Landings



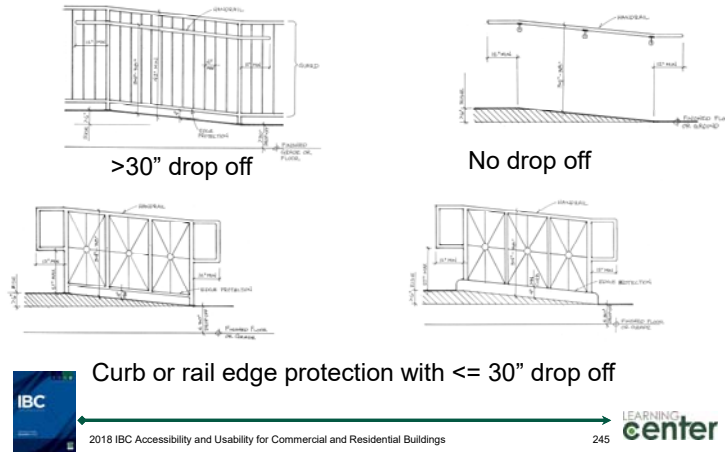
243

## Ramp Landings



244

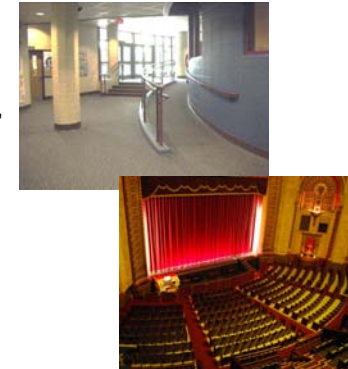
## Edge Protection, Handrails & Guards



245

## Ramp Allowances

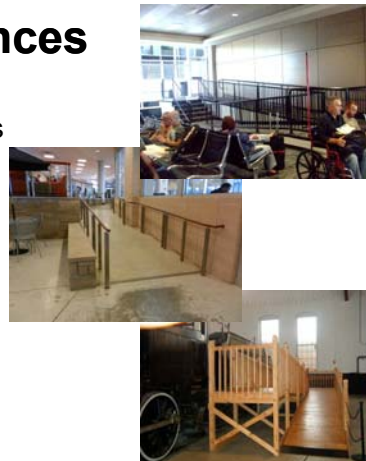
- Curved ramps are permitted if they meet cross slope.
- Where the ramp slope matches the sloped floor, edge protection may be provided by a wider surface.
- In assembly seating, accessible ramps are only required for entry and exit from accessible wheelchair spaces.



246

## Ramp Allowances

- Barriers may serve as a handrail where guards are not required.
- Projections can be at or below the handrail height.
- Handrail grasping surfaces cannot be obstructed.



247

## Ramp Allowances

- Ramps can have gridded surfaces in cold or wet areas.
- Where the ramp moves up with the grade, edge protection may be provided by a wider surface.



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249



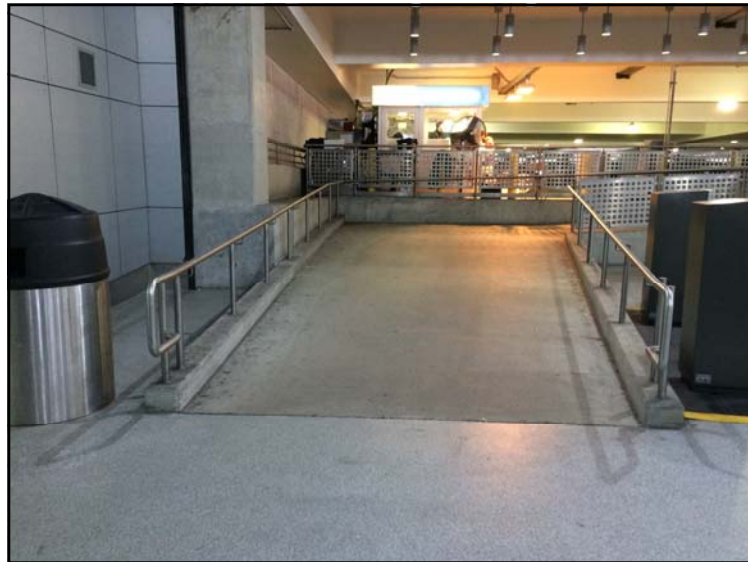
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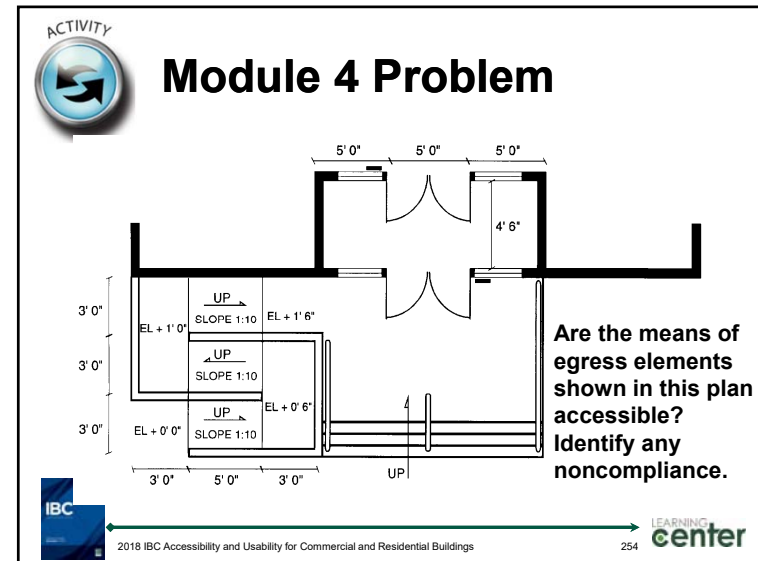
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**Module 4 Answer**

- **Ramps:** The width between handrails is too narrow. While each rise is only 6 inches, the entire ramp has a rise of 18 inches, so they cannot use the handrail exception. (152 mm); the ramp slope is too steep; landings are not of an adequate size (IBC Section 1012, ICC A117.1 Section 405).
- **Doors:** The door leaf does not provide 32-inch (813 mm) clear width. The doors have to be automatic or there is a problem with the space between the doors (IBC Sections 1010.1.1 and 1010.1.8, ICC A117.1 Sections 404.2.5 and 404.3.1).
- **Stairs:** Handrails do NOT have adequate handrail extension at the bottom (IBC Section 1014.6).
- **Controls:** The clear floor space to access the controls must be outside of the swing of the door (ICC A117.1 Section 404.3.5).

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**Module 5**



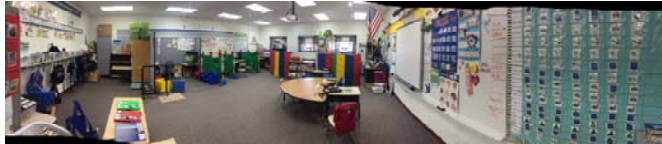
**Building Features and Facilities**

256



### Enhanced Classroom Acoustics



- In Group E occupancies, enhanced classroom acoustics shall be provided in all classrooms having a volume of 20,000 cubic feet or less.
- Such acoustics to be in compliance with Section 808 of ICC A117.1, including regulation of:
  - Reverberation times based on either the performance method or prescriptive method



257

### Building Features and Facilities



- Plumbing Facilities.
- Customer Service.
- Other Features.



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### Bathrooms



- Type A and Type B unit bathrooms are not addressed in this class.
- All other bathrooms will be covered here:
  - Public bathrooms
  - Private bathrooms
  - Accessible dwelling and sleeping units
  - Child size bathrooms



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### Bathrooms

- Required fixtures per IPC.
- Designers choice for how required fixtures are separated:
  - Multi-stall bathrooms
  - Single occupant bathrooms
- All bathrooms must be accessible per Chapter 6 of ICC A117.1.



260

## Exceptions

- Accessed through a private office.
- Non-accessible dwelling or sleeping units.
- 50% of each type of clustered single occupant bathrooms.
- When only one urinal is provided in a bathroom, that urinal is not required to be accessible.
- Critical care or Intensive care.
- Allowance to design for children



261

## Bathrooms

- One of each type of fixture provided in each bathroom:
  - Water closets
  - Lavatories
  - Urinals
  - Bathtubs/Showers
- When 6 or more water closets and/or urinals are provided in a room, an ambulatory stall is required.



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## Sinks/Lavatories

- Lavatories are for bathing purposes.
- Sinks are typically a work sink.
- 5% constructed with front approach.
- When 6 or more lavatories are provided in a room, a lavatory with an enhanced reach range faucet is required.



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## Exceptions

- Non-accessible:
  - Part of individual work stations
  - Mop or service sinks
- Limited accessibility:
  - Sinks for children's use
  - Kitchenettes permitted to have side approach



264

## Family Use/Assisted Use Accessible Toilet Rooms

- Mercantile or assembly facilities; and
- 6 or more required water closets;
- 1 unisex toilet room required;
- Not an exception for accessible fixtures in the men's and women's toilet rooms.



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## Family Use /Assisted Use Accessible Bathing Rooms

- Recreational facilities where bathing rooms are provided.
- One family use bathing room is required.
- Exception:
  - If only one shower is provided in men's and women's bathing room.



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## Family Use/Assisted Use Accessible Toilet/Bathing Rooms

- Family Use room counts toward required fixture count.
- Designers choice to take from men's or women's fixture count.
- Toilet room must include one water closet and one lavatory.
- Room may include one urinal.
- Room must include any amenities provided in men's and women's toilet/bathing rooms.
- Bathing rooms must include a tub or shower.



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## Purpose


- Person with mobility impairment may require assistance.
- Families with small children.
- Persons with temporary disabilities may require assistance.
- Customer friendly.




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## Location

- Maximum of 500 feet and one story travel from the men's and women's rooms.
- In transportation facilities, travel shall not be through a security checkpoint.



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## Additional Requirements

- Privacy locks
- Signage




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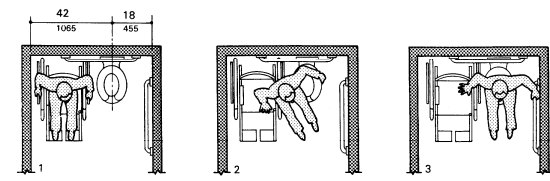


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## Clear Floor Space at Water Closet

Allows for side transfer.




42 18 1065 455


1 TAKES TRANSFER POSITION, REMOVES ARMREST, SETS BRAKES

2 TRANSFERS

3 POSITIONS ON TOILET



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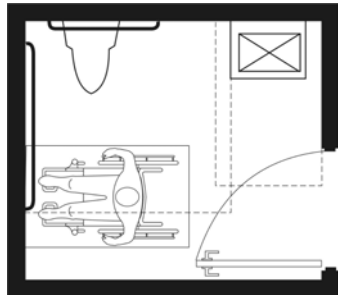



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## Single Occupant Toilet Rooms

- 60" turning space required in the room
- A door **can** swing over the space where someone sits to use the lavatory, toilet or urinal **provided** a 30" x 48" space is provided past the swing of the door
- A fixture **cannot** overlap the clear floor space of another fixture

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**FOR EXAMPLE**

## Examples

60" X 56" CLEARANCE AT WATER CLOSET  
30" X 48" CLEARANCE FOR LAVATORY  
60" TURNING CIRCLE  
30" X 48" MANEUVERING SPACE FIRST DOOR SWING  
MANEUVERING CLEARANCE AT DOOR

30" IF ALCOVE IS 6 24" DEEP  
30" IF ALCOVE IS > 24" DEEP  
30" X 48" CLEARANCE FOR LAVATORY  
60" X 56" CLEARANCE AT WATER CLOSET  
30" X 48" MANEUVERING SPACE FIRST DOOR SWING  
60" TURNING CIRCLE  
MANEUVERING CLEARANCE AT DOOR

**NOTES**  
1. MANEUVERING SPACES CAN OVERLAP.  
2. A PLUMBING FIXTURE CANNOT BE IN THE MANEUVERING SPACE OF ANOTHER FIXTURE.

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## Impact – Single occupant toilet room design

**Existing** **New**

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## Impact – Single occupant toilet room design

**Existing** **New**

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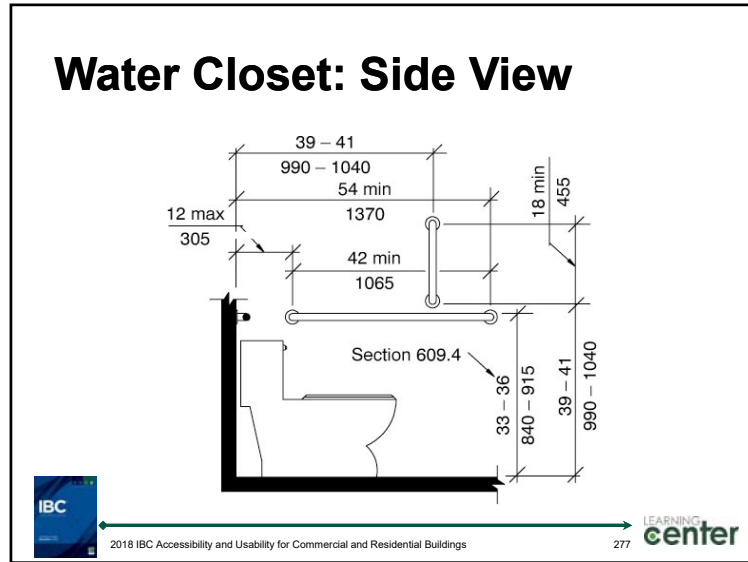
275

## Impact – Single occupant toilet room design

**Existing** **New**

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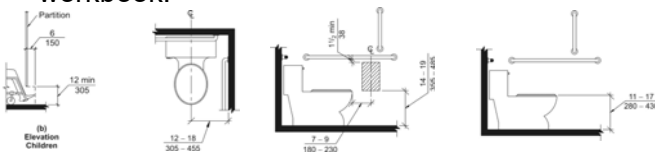
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## Children's Water Closets

- See the Adult/Child comparison chart in the workbook.



Advisory Specifications for Water Closets Serving Children Ages 3 -12			
	Age 3 & 4	Age 5-8	Age 9-12
Water closet centerline	12"	12"-15"	15"-18"
Toilet seat height	11"-12"	12"-15"	15"-17"
Grab bar height	18"-20"	20"-25"	25"-27"
Dispenser height	14"	14"-17"	17"-19"


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## Multi-stall Toilet Rooms

- 60" turning space required in the room.
- A door **cannot** swing over the space where someone sits to use the lavatory or urinal.
- A fixture **cannot** overlap the clear floor space of another fixture.






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## Multi-stall Toilet Rooms

- The stall and door arrangement will not change for the minimum size stall, however, the table does address door location options for larger size stalls.



Door Opening Location	Measured From	Dimension
Front Wall or Partition	From the side wall or partition closest to the water closet	56 inches (1420 mm) minimum
	From the side wall or partition farthest from the water closet	4 inches (100 mm) maximum
Side Wall or Partition Wall-Hung Water Closet	From the rear wall	52 inches (1320 mm) minimum
	From the front wall or partition	4 inches (100 mm) maximum
Side Wall or Partition Floor-Mounted Water Closet	From the rear wall	55 inches (1395 mm) minimum
	From the front wall or partition	4 inches (100 mm) maximum


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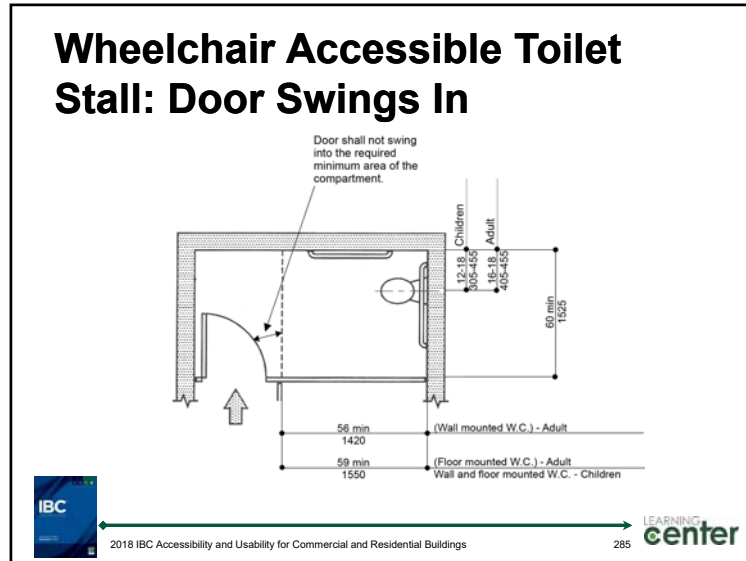
283

## Wheelchair Accessible Toilet Stall: Door Swings Out

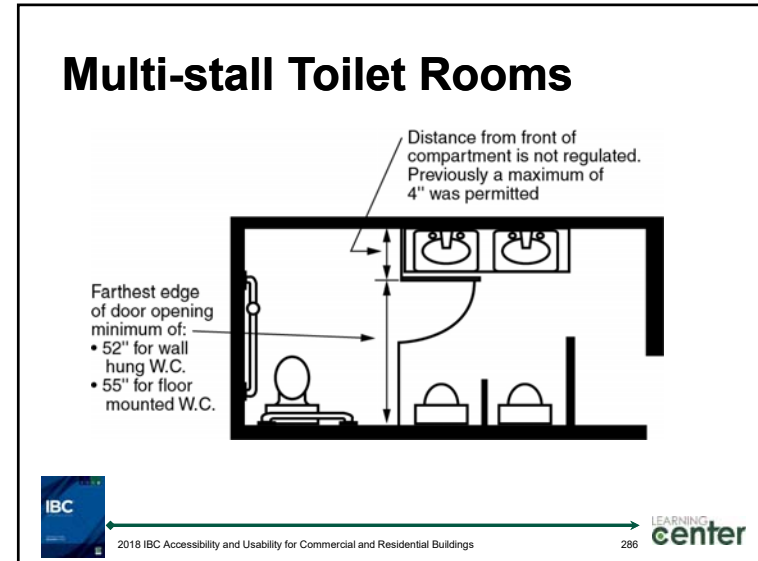



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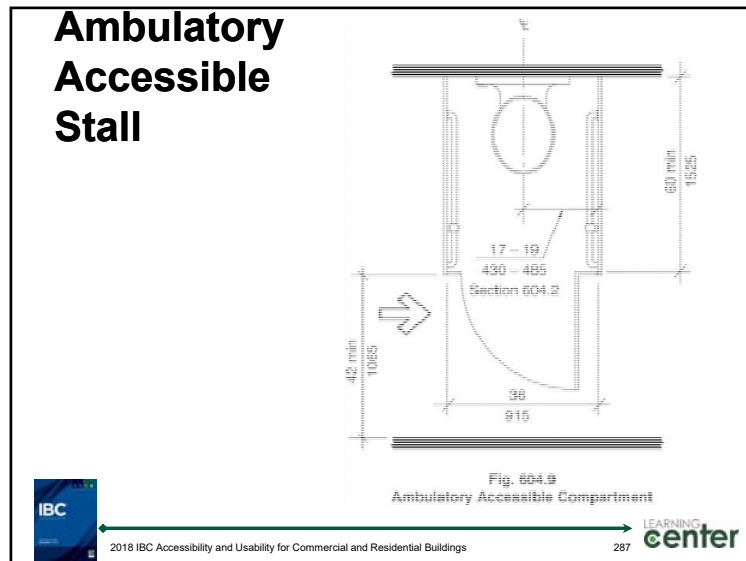
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### Good or Bad?



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### Good or Bad?



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290

### Good or Bad?



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291

### Good or Bad?



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292

## Good or Bad?



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## Urinals

- Rim height
- Clear floor space
- Alcove
- Flush controls



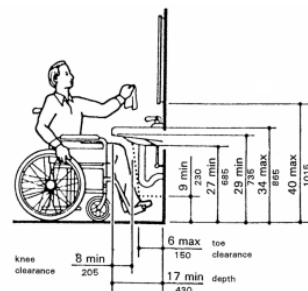
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## Lavatories & Sinks

- Height
- Clearance
- Clear floor space
- Pipe protection
- Controls



NOTE: equipment permitted in shaded area



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## Good or Bad?



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### Good or Bad?



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### Good or Bad?



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### Good or Bad?



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### Good or Bad?




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## Room requirements

- Room requirements include towel dispensers or hand dryers (A117.1 603.6).
- Other elements covered by operable part requirements.

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## Bathtubs or Shower

- Minimum dimensions for showers
- Clearances/approach
- Seats
- Grab bars
- Controls
- Shower unit
- Enclosures/doors
- Thresholds



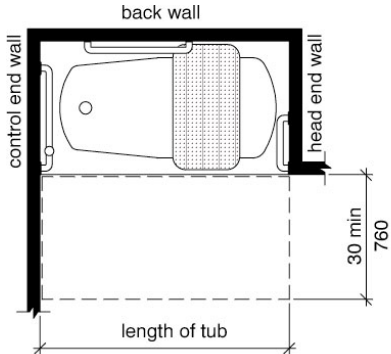

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## Bathtub Without Permanent Seat

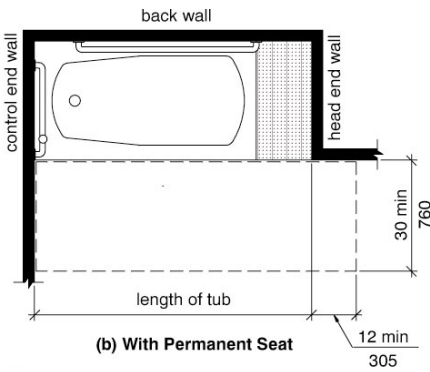
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303


## Bathtub With Permanent Seat



(b) With Permanent Seat

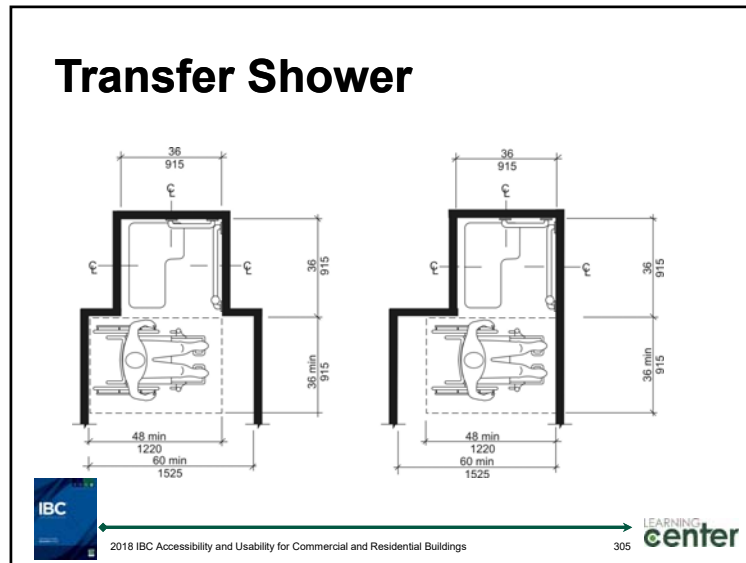


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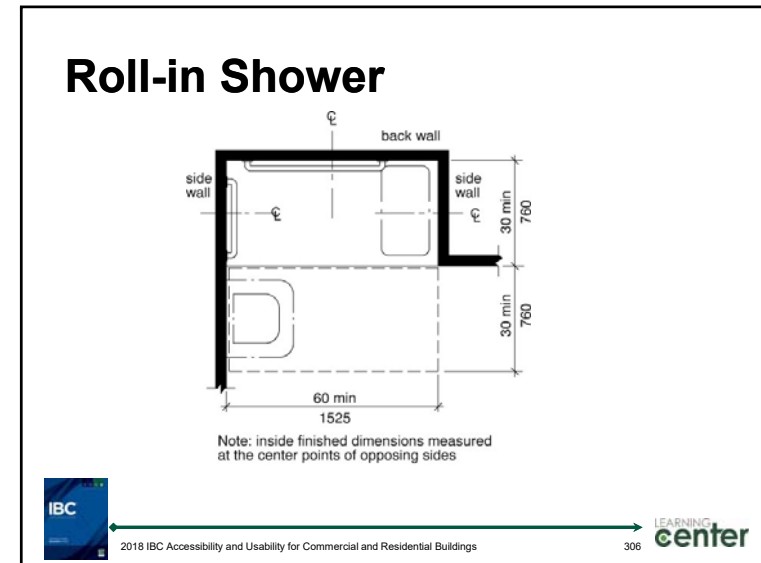


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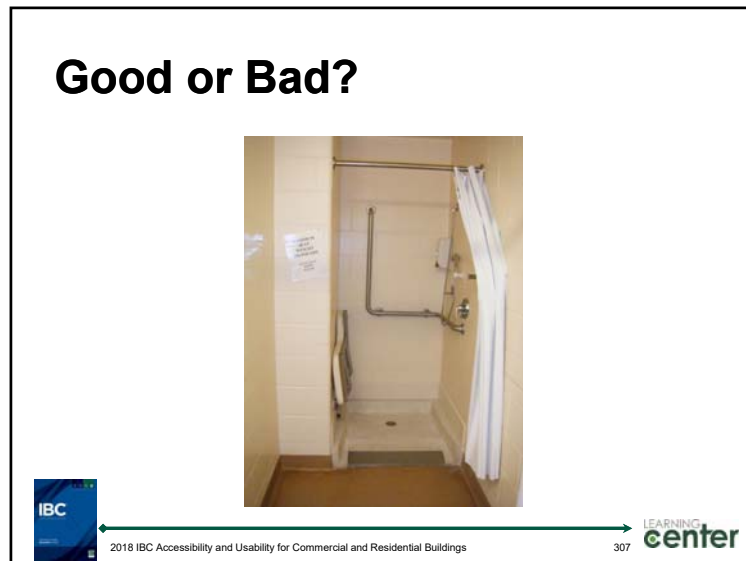
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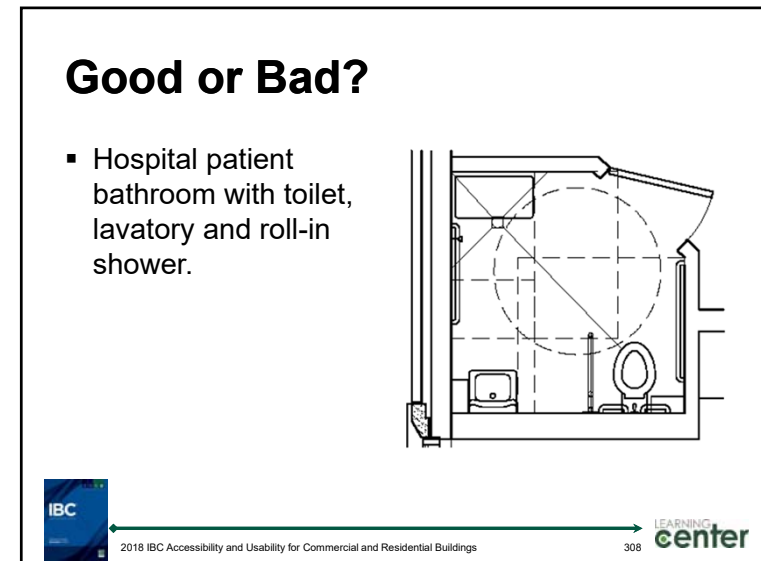
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306



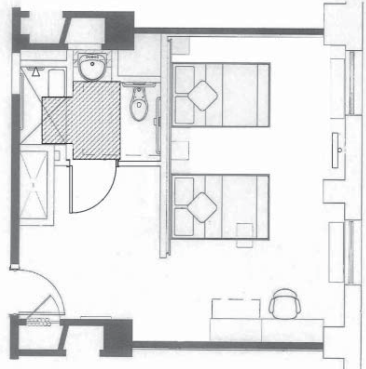
307



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## Good or Bad?

- Accessible hotel room




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## Assisted Toileting and Bathing

- Changes have been made to the provisions for nursing homes and assisted living facilities to allow some units to have toilet and bathing facilities designed for assisted use.
  - These allowances are permitted instead of the independent use facilities generally intended by the ICC A117.1 Accessible unit provisions.
- Both scoping and technical provisions are provided in IBC.
- The assisted use provisions are optional and can be applied when desired by the designer.
  - Units may be modified for toileting, bathing or both



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## Assisted Toileting and Bathing

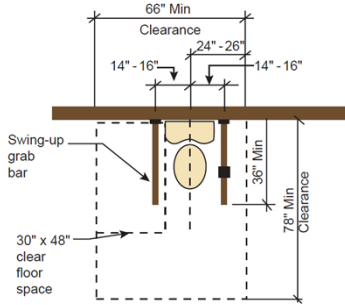
- Assisted water closets and roll-in-type showers may replace like fixtures in up to **50%** of Accessible units in the following occupancies:
  - Group I-1, Conditions 1 and 2 (4% and 10%)
  - Group I-2 rehabilitation facilities (100%)
- Assisted water closets and roll-in-type showers may replace like fixtures in up to **90%** of Accessible units in the following occupancies:
  - Group I-2 nursing homes (50%)
- Already permitted in all Type B units

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## Assisted Toileting


- Primary technical changes include:
  - Increased clearance around water closet of 66" with clearance of 24" to 26" from centerline of fixture
  - Increased clearance depth of 78" to allow for additional approach options
  - Allowance for swing-up grab bars that are typically only permitted in Type B units
  - Toilet paper dispenser to be installed on at least one of the swing-up grab bars



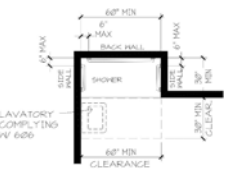
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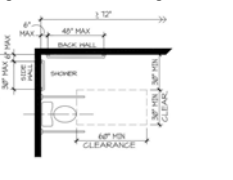
## Assisted Bathing



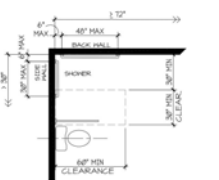
- Primary technical change is elimination of required folding seat
- Allows for use of rolling chair when necessary
- Sidewall and backwall grab bars now differ, with side-wall bar required on 'seat wall' and both grab bars starting in corners





ASSISTED BATHING  
ROLL-IN SHOWER -  
MINIMUM SIZE



ASSISTED BATHING  
ROLL-IN SHOWER -  
USING EXCEPTIONS  
EXAMPLE 1



ASSISTED BATHING  
ROLL-IN SHOWER -  
USING EXCEPTIONS  
EXAMPLE 2

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## Drinking Fountains (Scoping)

- 50% of drinking fountains provided on each floor configured for persons using wheelchairs.
- 50% of drinking fountains provided on each floor configured for standing persons.
- Exception for drinking fountains sized for children






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## Good or Bad?

- One water supply, but two bowls will count as two drinking fountains.
- The dog fountain exceeds code.



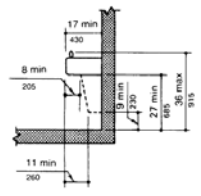




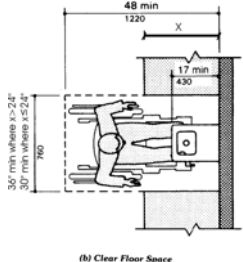

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## Drinking Fountains (Technical)



- Clear floor space/approach
- Protruding objects
- Operable parts
- Spout location
- Water flow



Spout Height and Leg Clearance



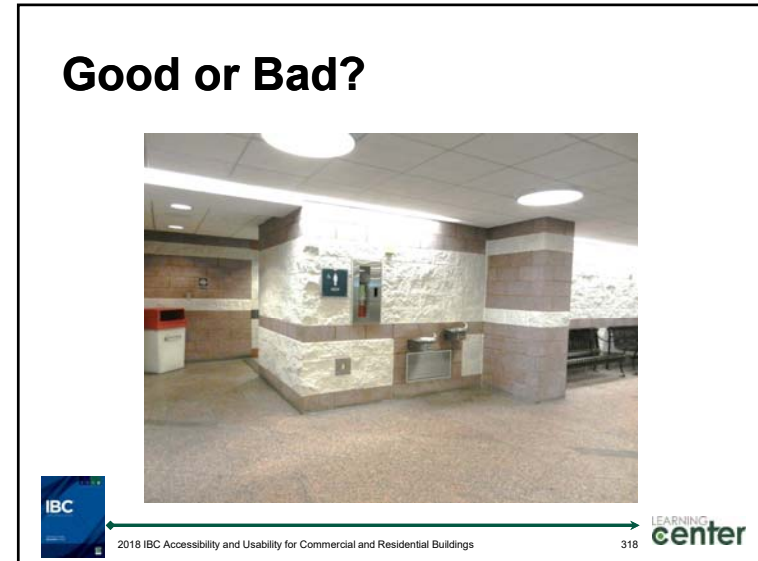
(b) Clear Floor Space

316



317






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319

### 1110.6 Bottle Filling Stations

- Water bottle-filling stations, where provided, are to be accessible.
  - Stations located over drinking fountains for standing persons not required to be accessible, provided such stations are also located over the drinking fountains for persons using wheelchairs.
- Technical requirements found in A117.1 Section 602.4.
  - Clear floor space provided for either a forward or side approach
  - Controls to comply with operable parts requirements

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## Good or Bad?




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## Dressing Rooms (Scoping)

- 5% minimum.
- At least one of each group.

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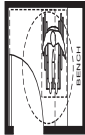


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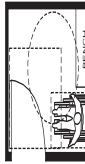
322

## Dressing Rooms (Technical)

- Turning circle.
- Bench.
- Same amenities as in other dressing rooms.




OPTION 1




OPTION 2

- TURNING SPACE CAN USE TOE CLEARANCE UNDER BENCH
- DOOR CAN SWING OVER TURNING SPACE IF A 30 IN. x 48 IN. WHEELCHAIR SPACE AVAILABLE PAST THE DOOR SWING
- BENCH REQUIREMENTS IN SECTION 903





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323

## Good or Bad?


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## Built-in Counters

- Check out aisles.
  - Table 1109.12.2 based on number provided.
- Sales and service counters.
  - At least on of each type.



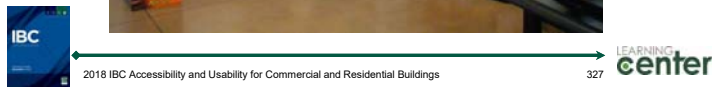
325

## Check-out Counters – Good or Bad?



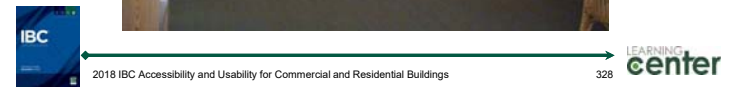
326

## Check-out Counters – Good or Bad?



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## Service Window – Good or Bad?



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### Service Window – Good or Bad?



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329

### Service Window – Good or Bad?



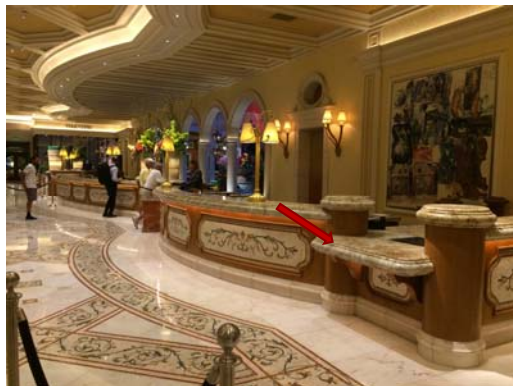
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### Service Window – Good or Bad?



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### Service Window – Good or Bad?



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## Service Window – Good or Bad?



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## Built-in Counters

- Built-in counters and work surfaces
  - 5% or work surfaces.
  - 5% of dining surfaces.
- Food service lines:
  - All cafeteria style lines accessible
  - 50% of self service areas.
- Queue and waiting lines:
  - All that serve accessible elements.

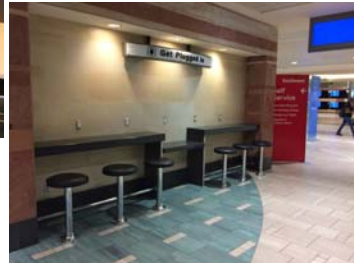


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## Built-in Work Surface – Good or Bad?



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## Food Service – Good or Bad?



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## Food Service Lines – Good or Bad?



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## Sales/Service Counters & Windows



- “Windows” added into technical requirements
- Regulates “public portion” “where counters are provided”
- Employee side is not regulated since it is a work area
- Clarifies small (<36” length) parallel counters are OK if that is entire counter length



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## Sales/Service Counters & Windows



- Applicable to public side (not employee side)
- Side or front approach
- Equal customer counter
- Maximum barrier height to allow for face-to-face contact between employee and customer
- Allowance for security windows



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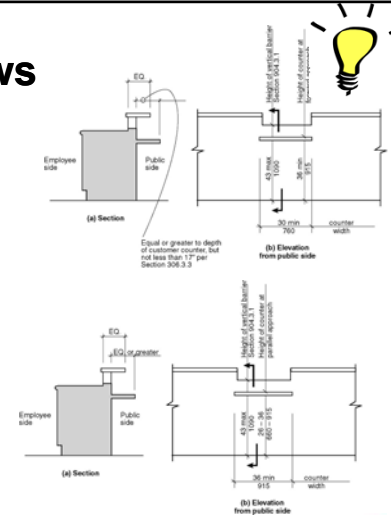


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## Service windows



- Applicable to public side (not employee side)
- Side or front approach
- Equal customer counter
- Maximum barrier height to allow for face-to-face contact between employee and customer
- Allowance for security windows



Significant Changes to the ICC A117.1 - Accessibility Standard - 2017 Edition



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### Queue & Waiting Line - Options

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### Queue lines – Good or Bad?

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### Storage

- At least one of each type in accessible spaces:
  - Cabinets
  - Closets
  - Drawers
  - Mail boxes
- 5% of lockers.
- Display shelves must be on an accessible route, but not within reach ranges.

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### Storage Shelves and Closets

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### Lockers – Good or Bad?



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### Storage – Good or Bad?



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### Mailboxes – Good or Bad?



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### Storage – Good or Bad?

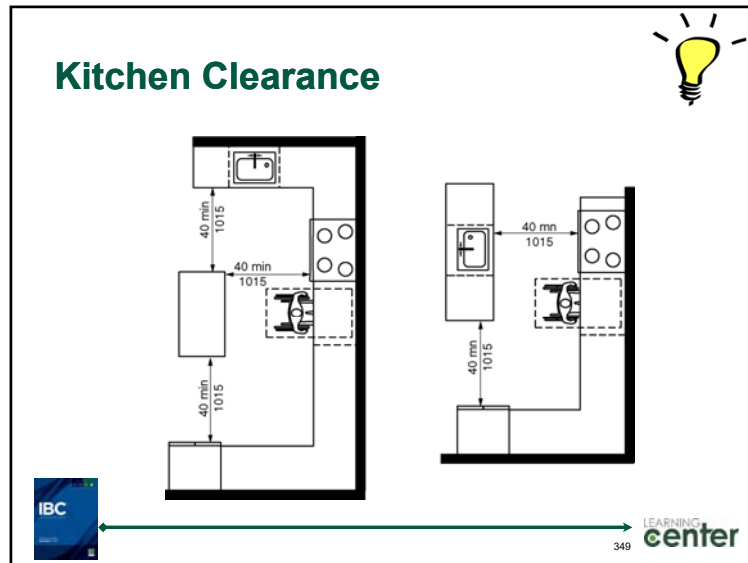


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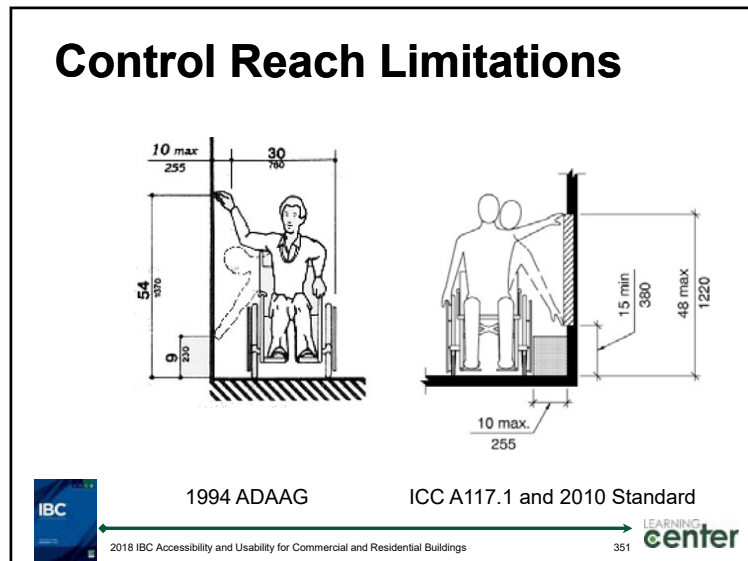
349

### Operable Parts

- All operable parts within accessible spaces and intended for occupant usage.

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### Windows

- Accessible units in Groups I-1, I-2, R-1, R-2 and R-4.
- When required for ventilation or emergency escape.
- At least one in each room.
- Exception:
  - Kitchens
  - Bathrooms

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## Good or Bad?










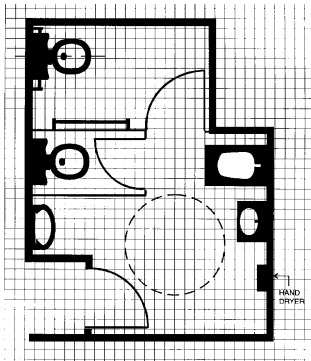
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## Module 5 Problem

- Assuming elevations of fixtures and other elements are correct; does the toilet room shown in this plan meet the requirements for accessibility?






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## Module 5 Answer

**Meets requirements:**


- The number of accessible fixtures is correct (IBC Sections 1109.2 and 1109.2.2).
- 5 foot (1524 mm) turning circle is required in accessible rooms (ICC A117.1 Section 603.2.1).
- Stall dimensions are adequate (IBC Section 1109.2.2, ICC A117.1 Section 604.9.2).
- The stall door and the door to the room provide 32-inch (813 mm) width (IBC Section 1010.1.1, ICC A117.1 Section 604.9.3).



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## Module 5 Answer

**Meets requirements:**

- The center line of the water closet is located 16 to 18 inches (406 to 457 mm) from the wall (ICC A117.1 Section 604.2).
- Grab bars meet length and grab bars unit dimension requirements (ICC A117.1 Sections 604.5.1 and 604.5.2).
- Urinals meet clearance requirements (ICC A117.1 Section 605.3).
- The hand blow dryer is accessible (IBC Section 1109.13, ICC A117.1 Section 309).







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**ACTIVITY**



## Module 5 Answer

**Does not meet requirements**


- Accessible lavatory does not meet clear floor space requirement (ICC A117.1 Section 606.2).
- Grab bars are incorrectly placed (ICC A117.1 Sections 604.5.1 and 604.5.2).
- The new vertical grab bar was not provided (ICC A117.1 Section 604.5.1).
- The urinal does not meet the alcove provisions for access (ICC A117.1 Section 305.7); however, a single urinal is not required to be accessible.



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**ACTIVITY**



## Module 5 Answer

**Additional concerns:**

- The following requirements are not covered in this unit but should also be considered (refer to the information provided on accessibility for doors): The toilet room itself is not accessible because it does not meet the requirements for accessible door clearance. It is wide enough, but a disabled person may not be able to get to the door handle to open the door from the push side if the door has both a closure and latch (ICC A117.1 Table 404.2.3.1). An alternative would be to provide an automatic door opener.



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## Module 6

# Special Occupancies Requirements

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## Special Occupancies Requirements



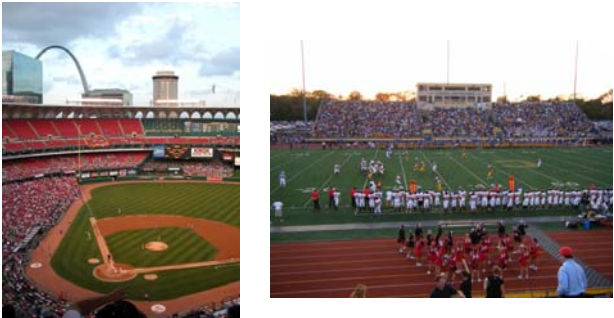
- Assembly seating.
- Dining areas.
- Self-service storage facilities.
- Judicial facilities.
- Recreational facilities.



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## Assembly Seating - Fixed



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## Assembly Seating - Fixed





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## Number of Spaces

- Fixed seats provided.
  - Table 1108.2.2.1.
- Luxury boxes, club boxes or suites.
  - Each box based on Table 1108.2.2.1.
- Other box seats.
  - 20% of total box seats based on Table 1108.2.2.1.
- Lawn seating.






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## Dispersion

- Number of wheelchairs spaces (IBC Table 1108.2.2.1)
- Number of wheelchair space locations (ICC A117.1 Table 802.10)

*“Wheelchair space locations” include the companion seat and can include multiple wheelchair spaces.*



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## Dispersion - IBC

- Access to services.
- Integration.
- Different levels.
- Exceptions:
  - Balconies in religious facilities with <25% of the total seats.
  - Balconies in assembly with both <300 seats and <25% of the total seats.



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## Dispersion – A117.1

- Line of Sight – standing or seated spectators
- Horizontal (side-to-side)
- Vertical (front-to back)
- Type (seating type or services)



366

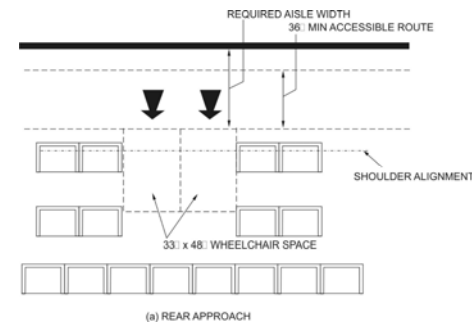
## Wheelchair Space

- Adjacent companion seat.
- Size dependent on approach and if 1 or 2 wheelchair spaces.
- 1:48 maximum slope.
- Provided on accessible route.



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## Wheelchair Space – Size and Access



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## Wheelchair Space – Size and Access

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## Wheelchair Space

- The wheelchair space must have shoulder alignment with the companion seat to allow interaction.

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## Accessible Route Requirements

- 1:12 maximum slope.
- Guards at drop-offs – height can be reduced for line-of-sight.
- Platform lifts for entry and exit.
- Common path of travel for means of egress.

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## Line of Sight

- Looking **over** the heads of **seated** spectators

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## Line of Sight

- Looking **between** the heads of **seated** spectators

Fig. 802.9.1.2  
Lines of Sight between the Heads of Seated Spectators

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## Line of Sight

- Looking **over** the heads of **standing** spectators

12" maximum  
Line of sight angles equivalent  
Line of sight over the head of spectator two rows in front  
P (Minimum height or wheelchair space)  
Y (Riser height)  
X (row spacing)

Calculation:  
 $P = (2X + 34)(Y - 2.25)/X + (20.2 - Y)$

Fig. 802.9.2  
Wheelchair Space Elevation

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## Allowances

- Companion seats can be moveable provided they are equivalent to fixed seats
- Dispersion in bleachers can be to just the front row.
- Lawn seating requires an accessible route to the edge of the seating area.

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## Motion Picture Theaters

- Where tiered seating (stadium style) is provided, the wheelchairs spaces must be integrated, but they can be in the cross aisle as the first tier.
- The wheelchair spaces need to be in the rear 60% of the theater seating rows.
- Remember that two accessible means of egress are required from the theater.

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## Designated Aisle Seats

- 5% of all aisle seats.
- Best design practice:
  - Located along accessible route.
  - Folding or retractable armrests when adjacent seating has armrests.



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## Assistive Listening System

- Where audible communications are integral to the use of the space; and
- An audio amplification system is provided.
- Number based on IBC Table 1108.2.5.1.
- Some devices hearing-aid compatible.
- Signage.



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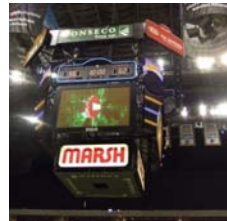


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## Text Messaging

- Stadiums, arenas and grandstands.
- With audible public announcements.
- Equivalent text messages must be provided.



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## Performance Areas

- Access to all performing areas.
  - Where a stairway is provided between the stage and the audience, the accessible route shall be in the same area.
- Access to all supporting spaces.



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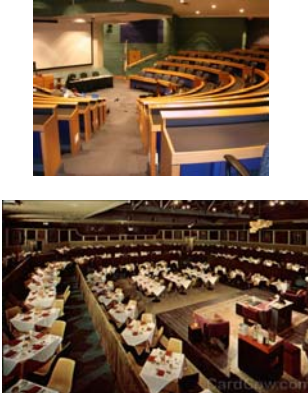


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## Companion Seat Alignment

- Alignment is not required for seating at tiered dining or work surfaces
- Examples:
  - Dinner theaters
  - Lecture halls
- Dispersion should be based on general assembly seating (802.10)



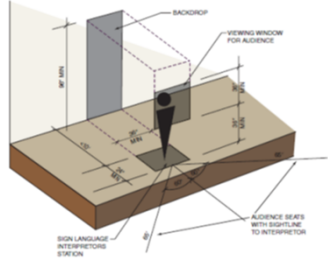


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## Sign Language Interpreter Stations (not scoped)

- Provides design parameters for station, including:
  - Size
  - Viewing angle and distance
  - Lighting
  - Backdrop



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## Dining areas






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## Dining Areas

- All dining areas accessible throughout.
- Exceptions:
  - Mezzanines with <25% of the total seating.
  - Sports facilities with tiered dining, at least 25% of the seating area must be accessible.
- 5% of the seating and standing spaces must be accessible.
- Distributed throughout the facility.




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### Good or Bad?



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### Good or Bad?



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### Tiered seating with tables – Good or Bad?



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### Self-service storage



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## Self-service Storage

- ≤200 units, 5% accessible.
- >200 units, 10 units plus 2% accessible.
- Dispersed by type.
- Not required to be dispersed by location.



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## Judicial Facilities



- Access to all services under general accessibility provisions.
- Special criteria for courtrooms, holding cells and lawyer/client consultation areas



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## Courtrooms

- Gallery seating is considered same as general assembly seating.
- Jury box
- Witness stand
- Lawyer/client tables



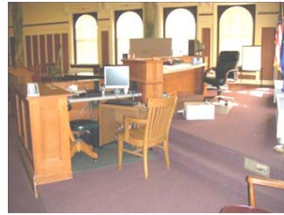
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## Courtrooms

- Employee areas, such as judge, bailiff and clerk, are not required to have vertical access provided it is planned for.
- Raised areas must have a turning space and knee and toe clearances under the work surface.



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## Holding Cells

- At least one central holding cell for each type provided.
- At least one court-floor holding cell for each type provided.
- Visiting areas must have accessible spaces on both sides.



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## Recreational Facilities

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## Site Access

An accessible route is required to all recreational facilities on a site.



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## Supporting Services

- Viewer seating
- Concession stands
- Locker rooms
- Ticket windows
- Toilet rooms



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## Scoping

Group R-2, R-3 and R-4 occupancies

- Serving Accessible units – all recreational facilities accessible
- Serving Type A or Type B units – 25% of the recreational facilities per building accessible.

Other occupancies

- All recreational facilities accessible



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## Areas of Sports Activity

- Defined term – “That portion of a room or space where the play or practice of a sport occurs.”



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## Scoping & Technical

An accessible route to all *areas of sports activity*.

Special requirements/allowances for:

- Amusement rides
- Recreational boating and fishing piers
- Exercise machines and equipment
- Miniature golf facilities
- Playgrounds
- Swimming pools, wading pools, hot tubs and spas
- Shooting facilities

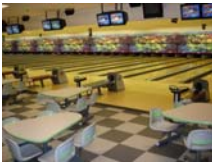



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## Scoping

Exceptions:

- 95% of bowling lanes
- Raised boxing or wrestling rings
- Raised areas for refereeing, judging or scoring
- Animal containment areas not in public use areas

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## Scoping

Special requirements:

- Team or player seating
- Court sports






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## Amusement Rides

- Access required for rides with a fixed course within a defined area.
- Accessible route to the ride.
- A transfer space next to a ride or a wheelchair space on the ride.










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## Amusement Rides

Exceptions:

- Mobile rides
- Controlled by rider
- Primarily for children an assisted by adults
- No ride seats

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404

## Recreational Boating and Fishing

- Access to docks
- Access to a percentage of the slips
- Allowances for changes in water level
- Coordination with barriers and guards



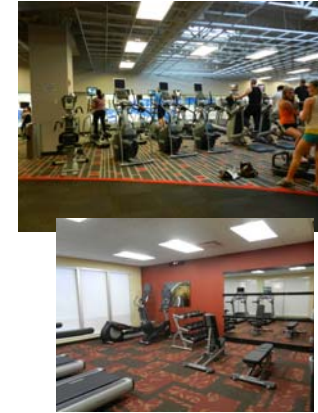
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## Exercise Equipment

- Space for transfer or to use at least one of each type of machine
- Not intended to change machines – no requirements for transfer or operable parts



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## Miniature Golf

- Access to at least 50% of holes
- Route on or adjacent to the holes
- One break permitted in the sequence if you play the last hole.



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## Play areas

- Percentage of ground level components
- Percentage of raised components on a route via ramp or transfer steps
- Access to soft contained play structures




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## Pools

- Access to pools based on types and size
- Options for type of entry
- Exceptions:
  - Diving boards
  - Slides
  - Catchment pools
  - Entry into the water for pools serving Group R-2 and R-3 with Type A and Type B dwelling units
- 5% of hot tubs



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## Shooting Facilities

- A turning space at one station in each type of shooting facility




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## Golf

- In A117.1 but not specifically scoped.
- Access to driving range, practice greens, bag drop off
- Access to tees and greens on the golf course using a golf cart



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## Good or Bad?

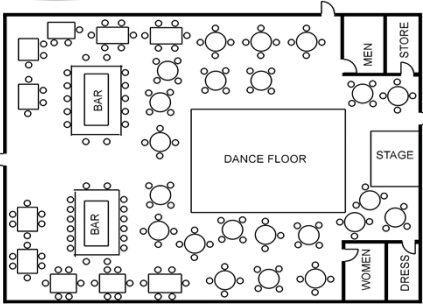


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**ACTIVITY**

## Module 6 Problem



PLAN - NIGHT CLUB

- The following is a plan of a nightclub. Assume the rectangular tables and bar have built-in seating and the round tables are loose seating.
- What are some of the places you would look for accommodations for accessibility?

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**ACTIVITY**

## Module 6 Answer

- Scoping items include:
  - An accessible route throughout the area with dining surfaces (IBC Section 1108.2.9).
  - Count the seats: Five percent these seats shall have wheelchair spaces and dining surface must be at the correct height. These spaces must be dispersed throughout-which may not always be by type.

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**ACTIVITY**

## Module 6 Answer

- Scoping items include:
  - Access to the dance floor (IBC Section 1104.3).
  - Access to the stage and dressing room (IBC Section 1108.2.8).
  - Access bathrooms including a family-use/assisted use bathroom if a total of six or more water closets are required (IBC Sections 1109.2, 1109.2.1 and 1109.2.2).
  - Accessible entrances (IBC Section 1105.1).
  - Accessible exits (IBC Section 1009.1).

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## Module 7

# Dwelling Units and Sleeping Units

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## Dwelling and Sleeping Units

- Institutional:
  - Groups I-1, I-2 and I-3.
- Residential:
  - Groups R-1, R-2, R-3 and R-4.
- Townhouses and congregate residences from IRC:
  - Referenced back to IBC as Group R-3.



417

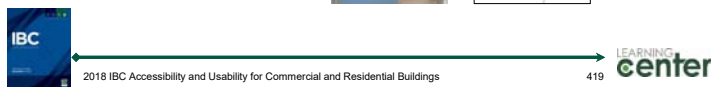
## "SAFE HARBOR"



418

## "Safe Harbor" means...

- that requirements in the document have been reviewed by HUD and meet or exceed the building construction requirements in the FHA.
- 2021 IBC and 2017 ICC A117.1 will be review by HUD.



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Related to Housing Accessibility



## Key Terms

420

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## Key Terms



- Dwelling unit:
  - Independent living facilities including provisions for living, sleeping, eating, cooking and sanitation.
- Sleeping unit:
  - Rooms where people sleep which may include living and eating and either cooking or sanitation.


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## Key Terms

- Dwelling or sleeping units, multistory.
  - Living space on more than one level.
- Intended to be occupied as a residence.
  - Dwelling units; or
  - Sleeping units; and
  - Occupant's place of abode.


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## Shared Spaces





- All public spaces
- All spaces for shared use by residents
- Recreational facilities
- Parking:
  - 2% of parking provided
  - If covered parking provided, at least one accessible space in covered parking



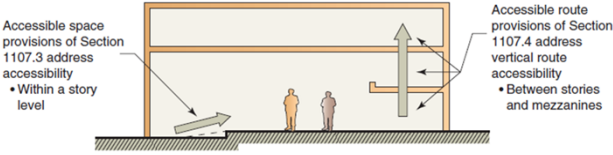



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## Accessible routes

- Connect to accessible elements on a site
- Connect to shared spaces for the units
- Dormitories are required to have elevators, even where no Accessible units are provided on upper floors (coordination with DOJ requirement)
- Connect levels, mezzanines and stories





Accessible space provisions of Section 1107.3 address accessibility

- Within a story level




Accessible route provisions of Section 1107.4 address vertical route accessibility

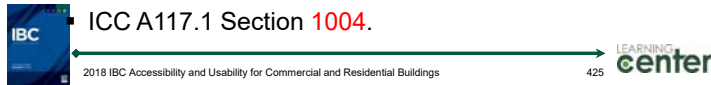
- Between stories and mezzanines


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## Level of Accessibility

-  Accessible units:
  - Constructed wheelchair accessible.
  - ICC A117.1 Section 1002.
-  Type A units:
  - Constructed wheelchair adaptable.
  - ICC A117.1 Section 1003.
-  Type B units:
  - Matches Fair Housing Accessibility Guidelines.
  - Geared towards mobility impaired persons



425

## Existing Buildings

-   Accessible units and Type A units required based on number being altered.
-   Accessible and Type A units required shall not exceed new construction requirements.
-  Type B units are required when the alteration is to more than 50% of the building area (i.e., Level 3 alteration).
-  When Type B units are added, there are no extra requirements to improve the accessible route.



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## Type C/Visitable units

- New to 2009 ICC A117.1, Section 1005
- No scoping in the IBC or IRC
- Intended for adoption by jurisdictions through visitability ordinances for single family homes



427

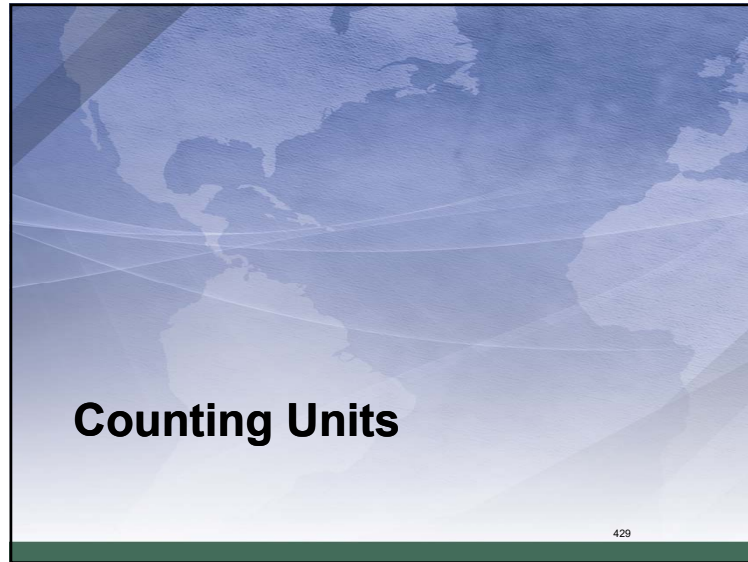
## Type C/Visitable units

Main features –

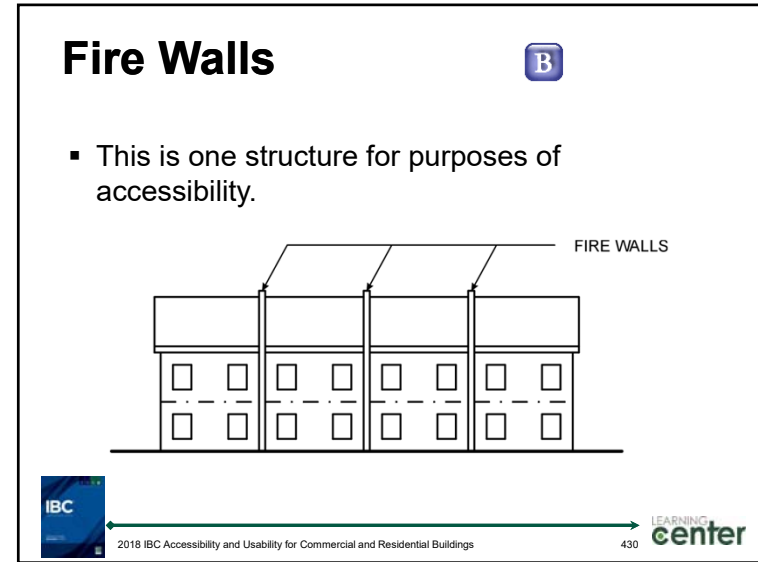
- One zero step entrance – which can be the front door, the back door or through the garage
- A circulation path through the accessible level
- Allowance for sloped sidewalks that move up with grade
- A toilet room with minimal clearances
- Minimal clearances in kitchens on the accessible level
- Electrical outlets and switches within reach range



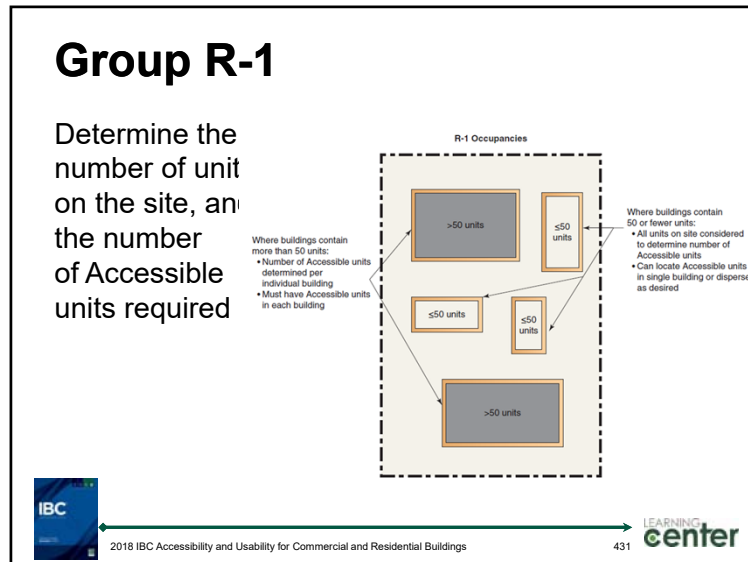
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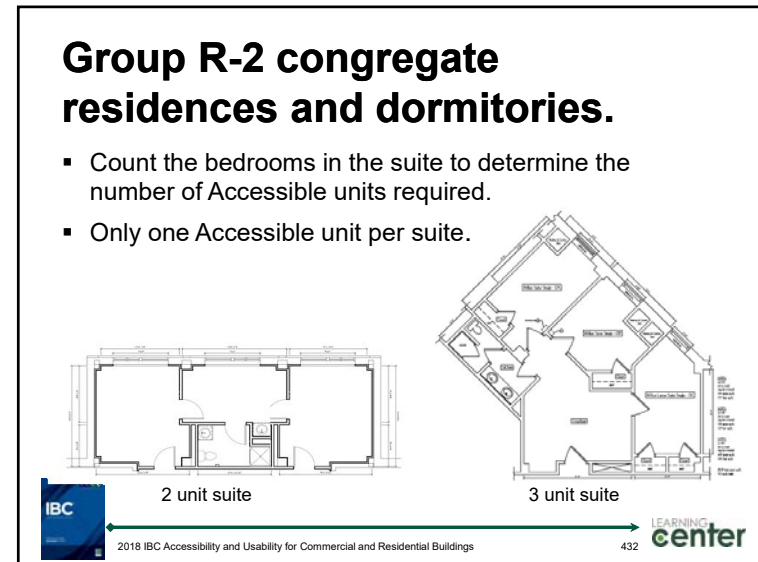
429



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## Group I Occupancy

		24 Hour Care Facilities		
Age of Residents	Capability of Residents	Number of Residents		
		1-5	6-16	Over 16
2½ years or less	Not capable of self preservation	R-3 or IRC	I-2	I-2
Over 2½ years	Capable of self preservation	R-3 or IRC	<b>R-4</b>	I-1
Over 2½ years	Not capable of self preservation	R-3 or IRC	I-2	I-2

For Group R-4, the number 16 is based on the limitations for an NFPA13D sprinkler system and the last national census. Of those that identified themselves as a single family home, 98% had 16 or fewer residents.

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## Group I-1

- Condition 1 - 4% Accessible units.
- Condition 2 - 10% Accessible units
- B Remainder Type B units if intended to be occupied as a residence.
  - Number of units with visible alarms per Table 907.5.2.3.2.

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## Group I-2– Hospitals

- 10% Accessible unit:
  - General purpose hospital
  - Psychiatric facilities
  - Detoxification facilities
- B Remainder Type B units if intended to be occupied as a residence.

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## Group I-2 – Nursing Homes

 50% Accessible unit.

**B** Remainder Type B units if intended to be occupied as a residence.




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## Group I-2 – Rehabilitation Facilities

 100% Accessible unit.





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## Group I-3

 3% Accessible units.

 At least one of each special holding or housing cells.

 10% of cells in medical care facilities.

- Exception for common areas serving only non-accessible cells. (IBC 1103.2.13).



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## Residential

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## Group R-1

-  Number of Accessible unit based on Table 1107.6.1.1.
  - New way to add up units on the site.
-  Remainder Type B units if intended to be occupied as a residence.
  - Number of units with visible alarms per Table 907.5.2.3.2.









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## Group R-2

### Live/work units

-  All dwellings are Type B units
  - The work areas must be accessible.











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## Group R-2

### Boarding Houses Dormitories Fraternity and Sorority Houses

-  Number of Accessible unit based on Table 1107.6.1.1.
-  Remainder Type B units.











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## Group R-2 -

### Apartments and Condominiums Convents and Monasteries

-  2% Type A units.
  - add up units on the site
  - >20 units in the facility.
-  Remainder Type B units






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## Group R-3

**B** All Type B units.



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## Group R-4

**♿** Condition 1 –  
One Accessible unit.

**♿** Condition 2 –  
Two Accessible units

**B** Remainder Type B units



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## Dwelling and Sleeping Unit Exceptions

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## Exceptions – Accessible Units

**♿**

- No exceptions.

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## Exceptions – Type A and B Units A B

- No exception for elevator buildings.

In Buildings with One or More Elevators:  
(Elevator Buildings) All Units are Covered

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## Exceptions – Type A and B Units A B

- Type A -  $\leq 20$  units in the site
- Type B - structures with less than 4 units.
- Non-elevator buildings.
- Multi-story units.
- Steep and hilly sites.
- Sites subject to flood regulations.

In Buildings with One or More Elevators:  
(Elevator Buildings) All Units are Covered

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## Lowest Level (IBC 1107.1) B

not all ground floor entrances must be accessible, but more than one may be necessary under some circumstances

all ground floor units are covered and must be served by an accessible entrance on an accessible route

Buildings with a Single Ground Floor

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## Lowest Level (IBC 1107.1) B

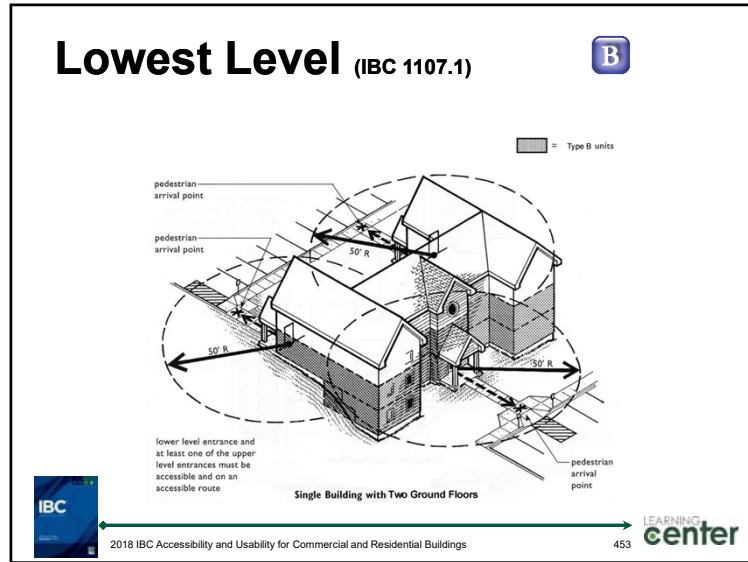
Existing Grade Calculation

Finished Grade Calculation

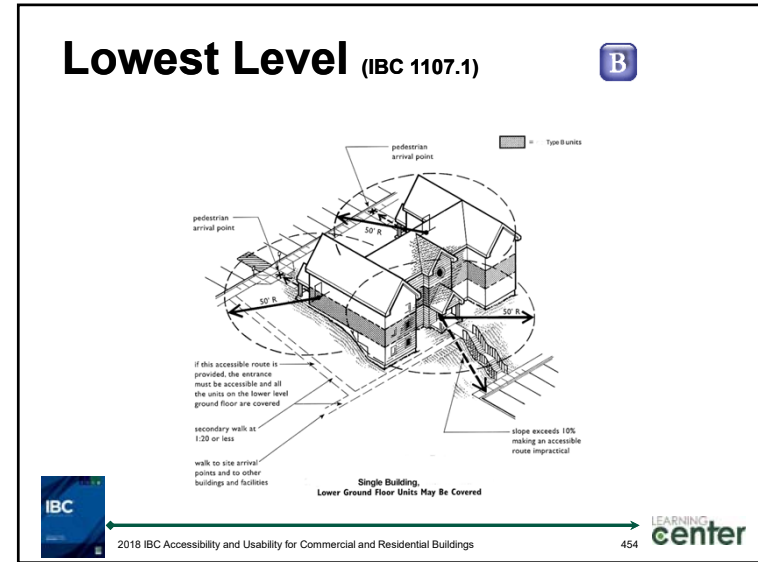
both calculations do not exceed 10%; therefore, the developer must provide an accessible route to the entrance and all units on the ground floor served by the entrance are covered

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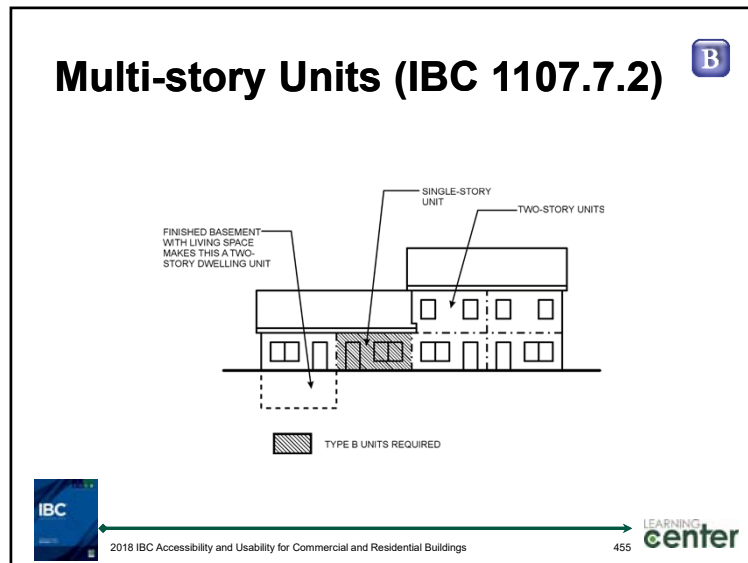
452



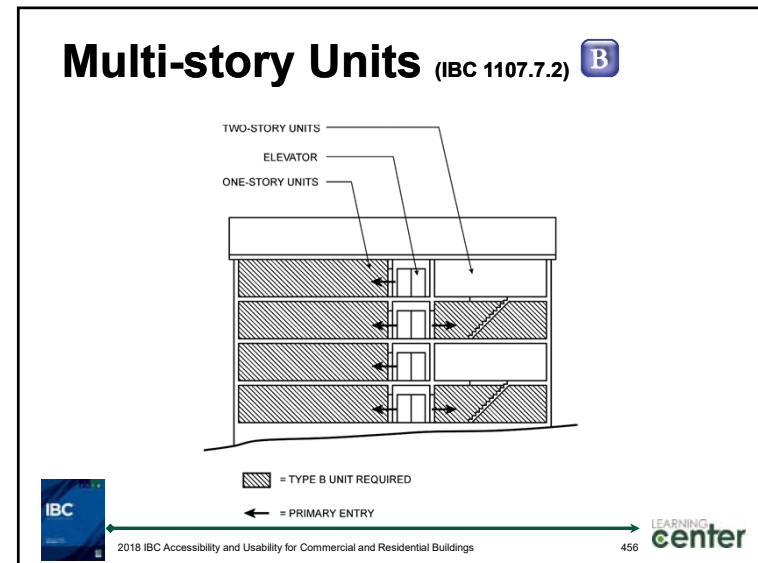
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## At Least One Story (IBC 1107.1.1) B

TYPE B UNITS REQUIRED

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## At Least One Story (IBC 1107.1.2) B

**Elevator to First Floor of Dwelling Units Above Grade or Entrance Level Does Not Make an Elevator Building**

= Type B units

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## Steep or Hilly Site (IBC 1107.7.4) B

**Site Analysis Test:**

Building #	Total Ground Floor Units	Type B Units
Building #1	10 ground floor units	4 units
Building #2	10 ground floor units	4 units
Building #3	6 ground floor units	6 units
<b>Total</b>	<b>26</b>	<b>20</b>

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## Flood Plain (IBC 1107.7.5) A B

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## Technical Criteria

- Accessible units:
  - ICC/A117.1 Section 1002.
- Type A units:
  - ICC/A117.1 Section 1003.
- Type B units:
  - ICC/A117.1 Section 1004.
  - Consistent with FHAG requirements.





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## Technical Criteria

- 100\*.1 Type of unit;
- 100\*.2 Primary entrance;
- 100\*.3 Accessible route;
- 100\*.4 Walking surfaces;
- 100\*.5 Doors and doorways;
- 100\*.6 Ramps;
- 100\*.7 Elevators;
- 100\*.8 Platform lifts;
- 100\*.9 Operable parts;
- 100\*.10 Laundry equipment;
- 100\*.11 Bathing rooms;
- 100\*.12 Kitchens;
- 100\*.13 Windows; and
- 100\*.14 Storage facilities.





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 **Module 7 Problem**


**What are the three types of accessible dwelling and sleeping units required in the IBC?**

**Of the three types, order them from the most accessible to the least.**

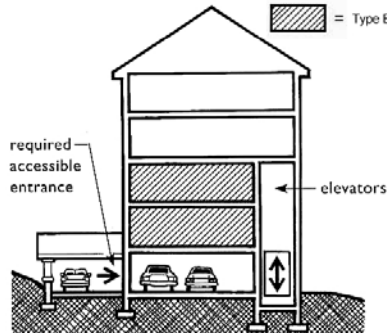


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 **Module 7 Problem**

**Does the following building comply with the exception in IBC Section 1107.7?**



The diagram shows a cross-section of a building. A legend indicates that a hatched box represents a Type B unit. The building has a ground-level entrance labeled 'required accessible entrance' with a ramp. An elevator shaft is labeled 'elevators'. A hatched box representing a Type B unit is located on the second floor.



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**ACTIVITY**

## Module 7 Problems

Does the following building comply with the exception in IBC Section 1107.7?

elevator must have stops at all floors containing single-story units and at the primary entry floor of two-story dwelling units

▨ = Type B units

single-story dwelling unit

second story of two-story dwellings

first story of two-story dwellings

single-story dwelling units

IBC

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**ACTIVITY**

## Module 7 Answers

What are the three types of accessible dwelling and sleeping units required in the IBC?

- Accessible, Type A and Type B units (IBC Section 1107)

Of the three types, order them from the most accessible to the least.

- Accessible, Type A and Type B units (IBC Section 1107.2)

IBC

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**ACTIVITY**

## Module 7 Answers

Does the following building comply with the exception in IBC Section 1107.7?

- No. If the elevator had served only one level above the garage, this building could have complied with IBC Sections 1107.7.1.1 and 1107.7.3. However, since the elevator serves two levels, an accessible route is required to all four levels above the garage.

Does the following building comply with the exception in IBC Section 1107.7?

- Yes. Level three is exempt if level two contains a living space, kitchen and bathroom with a water closet and lavatory (IBC Section 1107.7.2)

IBC

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## Module 8

# Existing Structures

IBC

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## Existing Buildings

- Maintenance.
- Alteration.
- Change of occupancy.
- Addition.
- Historic buildings.



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## Which book to use?

- Chapter 34 was deleted from the 2015 IBC
- The 2018 IEBC has three methods–
  - Prescriptive Compliance Method – Chapter 5
  - Work Area Method – Chapters 6 through 12
  - Performance compliance method – Chapter 13
- Accessibility provisions for all three methods in Section 305



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## Extent of Application

Alterations are not required to exceed the accessibility that would be required for a new building.



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## Alterations to Existing Buildings – Part 1

When altering an existing building, everything that is altered must meet new construction requirements for accessibility.



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## Maintenance

A facility that is constructed accessible must be maintained accessible.



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## General Exceptions

- Accessible means of egress.
- Technically infeasible.
- When historical significance is adversely affected.
- Type B units when the alteration is to less than 50% of the area of the building (Level 1 or 2)



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## Technically Infeasible

- Removal or *alteration* of a load-bearing member that is an essential part of the structural frame
- Existing physical or site constraints



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## Alterations to Existing Buildings – Part 2

- If the area being altered contains a primary function area, the route to that area and any toilet rooms or drinking fountains that serve that area must be evaluated for accessibility.
- If they are not accessible, additional improvements are required.



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## Primary Function Area

- A major activity for which the facility is intended.
- Excluding areas such as:
  - Mechanical room or boiler room
  - Supply storage
  - Employee lounge or locker room
  - Janitors closet
  - Entrances
  - Corridors
  - Restrooms



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## Accessible Route Exceptions

- The cost of the accessible route exceeds 20% of the cost of the alteration.
- The alteration is limited to items that will not alter the physical configuration or use of the space.
- The alteration is to improve accessibility.
- The route is to Type B units only.



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## Accessible Route to Primary Function Area

- Parking.
- Exterior accessible route.
- Entrance.
- Interior accessible route.
- Toilet rooms.
- Drinking fountains.
- Signage.



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## Extent of application for additional accessible route criteria

- The route improvements (including improving the bathrooms and drinking fountains) are limited to those that serve the area being altered.
- For example, if an alteration is only to the first floor, and the route is compliant, a designer is not required to fix non-compliant items on the upper floors.



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## Complete Change of Occupancy

- When a complete change of occupancy occurs and no alterations are planned, at least an accessible route to the primary function areas is required.
- When a complete change of occupancy occurs that includes alterations, bathrooms and drinking fountains that serve the altered area must also be evaluated.
- Partial changes of occupancy are handled the same as alterations.



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## Additions

- Additions must comply with new construction.
- If the addition relies on the toilet rooms or route through the existing building for access into the space, then the same accessible route provisions for alterations would apply.



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## HISTORIC BUILDING.

Any building or structure that is one or more of the following:

1. Listed, or certified as eligible for listing, by the State Historic Preservation Officer or the Keeper of the National Register of Historic Places, in the National Register of Historic Places.
2. Designated as historic under an applicable state or local law.
3. Certified as a contributing resource within a National Register, state designated or locally designated historic district.



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## IEBC Appendix B

Section B101: Qualified historical buildings and facilities.

- Explains what a qualified historic building is
- Requires consultations with interested persons
- Where compliance with accessibility would threaten the historical significance, alternatives are available.



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EF1

Should this just say Chapter 34?

Erica Fredrick, 2/11/2015

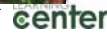
## Historic Building

- When compliance would be detrimental to the historical significance of a registered building.
- Minimum requirements
  - Site arrival points.
  - Access to main level.
  - Alternative entrance.
  - Unisex toilet room.



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## Special Allowances for Existing Buildings

- Entrances.
- Elevators.
- Platform lifts.
- Stair and Escalators.
- Ramps.
- Dwelling and sleeping units – Accessible, Type A and Type B.



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## Special Allowances for Existing Buildings

- Jury boxes and witness stands.
- Toilet rooms.
- Dressing, fitting and locker rooms.
- Fuel dispensers.
- Thresholds.
- Amusement rides.



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## Ex: Platform Lifts

- Permitted anywhere in existing buildings.
- ASME A18.1 limits vertical platform lifts to a 14 foot rise maximum.



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### Ex: Dwelling and sleeping units

- A** Accessible units and Type A units required based on number being altered.
- A** Accessible and Type A units required shall not exceed new construction requirements.
- B** Type B units are required when the alteration is to more than 50% of the building area (i.e., Level 3 alteration).
- B** When Type B units are altered or added within an existing building, there are no extra requirements to improve the accessible route.

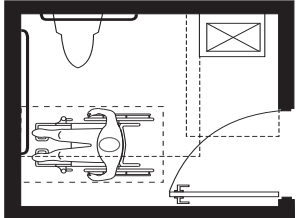



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### Ex: Toilet Rooms

- When it is technically infeasible to alter the existing toilet rooms to comply
  - Comply as much as feasible in the existing bathroom
  - Provide an accessible single occupant toilet room in the same area



Note: In single occupant toilet rooms, the door swing can overlap fixture clearances if wheelchair space is available beyond the arc of the door swing.

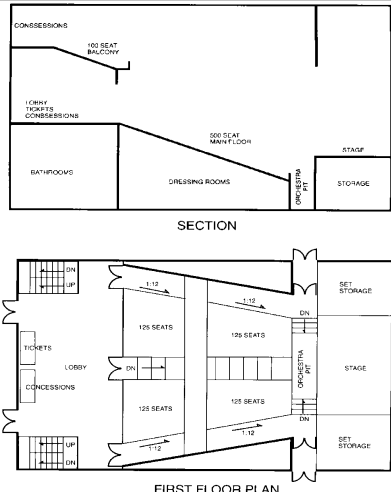





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### ACTIVITY Module 8 Problem

Suppose someone came to you with these sketches of an existing small-town theater, wanting to know how to make the facility more accessible.

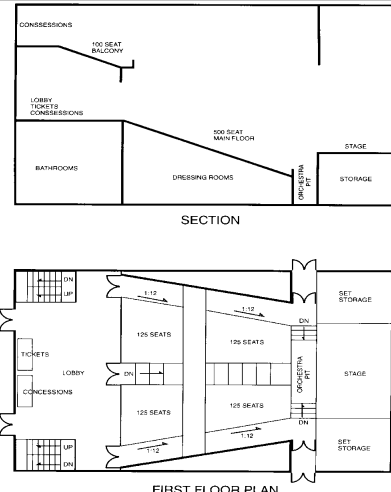


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### ACTIVITY Module 8 Problem

What would you suggest in the way of:

- Scoping Requirements
- General Recommendations
- Technical Requirements?

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**ACTIVITY**

## Module 8 Problem : Topics for Discussion

- Are the ticket and concession counters accessible?
- Is the location for the pick-up of assistive listening devices accessible?
- If a permanent assistive listening system is installed, would there be assistive listening devices available to the wheelchair spaces?
- Is a unisex accessible bathroom on the first floor acceptable?
- If yes, where should the bathroom be located?

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**ACTIVITY**

## Module 8 Problem : Topics for Discussion

- Is dispersal of the wheelchair space locations technically infeasible?
- Where should the wheelchair space locations be located?
- Are the wheelchair spaces on an accessible route?
- Does this wheelchair space dispersal constitute a variety of alternatives as available to the general public (i.e., equal access)?
- Where is the companion seating?

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**ACTIVITY**

## Module 8 Problem : Topics for Discussion

- From which direction is the approach to the wheelchair space: front, rear or side access?
- Is the size of the wheelchair space adequate for this approach?
- Often the public service side of theater is considered for accessibility requirements. Should the stage, orchestra pit and dressing room also be accessible?
- Can a platform lift be utilized in this area?
- Are the catwalks required to be accessible?

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**ACTIVITY**

## Final Reflection Problem

- Suppose someone came to you with this sketch for a proposed department store inside an existing 150-year-old factory building, and asked how to make the facility more accessible.
- What would you suggest?

DEPARTMENT STORE LAYOUT

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**ACTIVITY**

## Final Reflection Problem

- If parking is provided, what are the requirements?
- What are customer service facilities, and are they accessible?
- Does the elevated cafeteria meet accessibility entrance and route requirements?
- What percentage of booths and tables must be accessible?

DEPARTMENT STORE LAYOUT

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**ACTIVITY**

## Final Reflection Problem

- Per the 2015 International Plumbing Code (IPC) the store is required to have four water closet fixtures and three lavatories for each sex, and one drinking fountain. Since more than six total water closets are required, at least one unisex toilet room is also required. How many fixtures are required to be accessible?
- With an occupant load of 4,000, would the store meet accessible entry and egress requirements?
- Where would visible alarms be required in this store?

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**FINAL REFLECTION**

## Final Reflection

This slide will help the learner to reflect on the day and what they will take back to the job and apply.

- **What?** What happened and what was observed in the training?
- **So what?** What did you learn? What difference did this training make?
- **Now what?** How will you do things differently back on the job as a result of this training?

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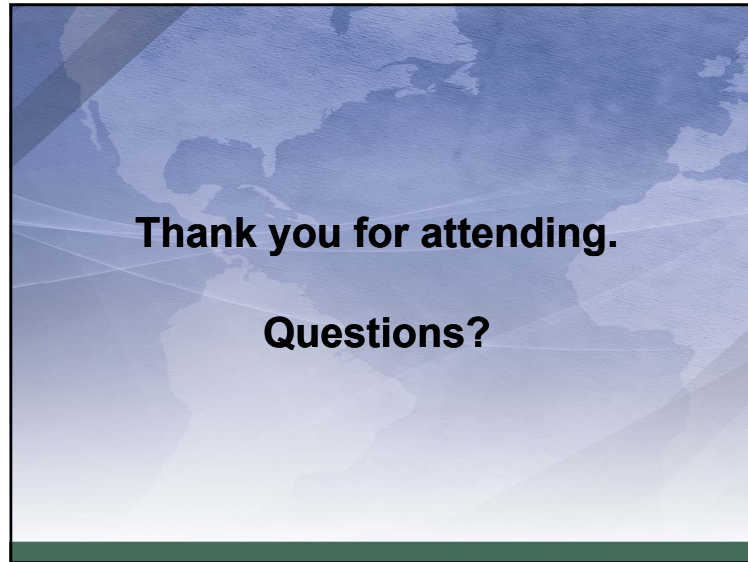
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## Technical Assistance

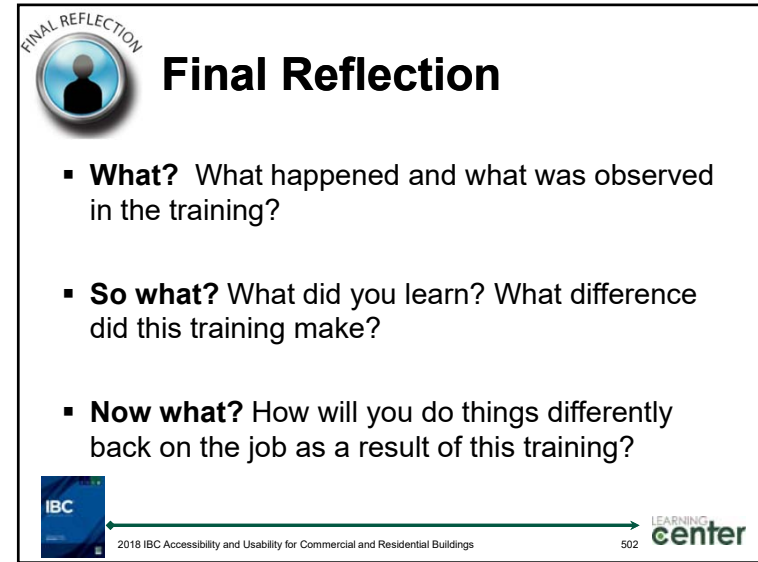
- ICC and A117.1 – ICC, (888)422-7233; [www.iccsafe.org](http://www.iccsafe.org).
- ADA – Access Board, 800-872-2253(v), 800-993-2822(TTY), [www.access-board.gov](http://www.access-board.gov) or email at [ta@access-board.gov](mailto:ta@access-board.gov)
- ADA – ADA Technical Assistance Centers (800)949-4232; [www.adata.org](http://www.adata.org)
- Fair Housing – Fair Housing Accessibility First, (888)341-7781; [www.fairhousingfirst.org](http://www.fairhousingfirst.org).

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A slide titled "Final Reflection" with a circular icon of a person's silhouette. The text "FINAL REFLECTION" is in a small arc above the icon. The title "Final Reflection" is in a large, bold, black font. Below the title is a bulleted list of three questions. At the bottom, there is a small IBC logo on the left and a "LEARNING center" logo on the right, with a double-headed arrow between them. The text "2018 IBC Accessibility and Usability for Commercial and Residential Buildings" is centered below the arrow, and the number "502" is in the bottom right corner.

- **What?** What happened and what was observed in the training?
- **So what?** What did you learn? What difference did this training make?
- **Now what?** How will you do things differently back on the job as a result of this training?

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