

A SMALL DEVELOPMENT GUIDE TO THE IEBC

WHO IS KRONBERG WALL?



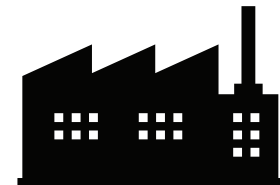
WE ARE CONSCIOUS URBAN PLACEMAKERS



NEIGHBORHOOD ACTIVATORS



URBAN INFILL



ADAPTIVE REUSE

An isometric illustration of a city street scene. The background shows a grid of buildings and streets in a light blue, wireframe style. Several rectangular blocks are highlighted in a solid red color, representing specific areas of interest. The text is overlaid on the center of the image.

We believe walkable areas with existing infrastructure are the easiest targets for quick and cost-effective antidotes to **SPRAWL.**

An isometric illustration of a city street scene. The background shows a grid of buildings and streets in a light blue, wireframe style. Several rectangular blocks are highlighted in a solid red color, indicating specific areas of interest. The text is overlaid on the center of the image.

We believe walkable areas with existing infrastructure are the easiest targets for quick and cost-effective antidotes to **HOUSING SHORTAGES.**

An isometric illustration of a city street scene. The background shows a grid of buildings and streets in a light blue, wireframe style. Several rectangular blocks are highlighted in a solid red color, indicating specific areas of interest. The text is overlaid on the center of the image.

We believe walkable areas with existing infrastructure are the easiest targets for quick and cost-effective antidotes to **LACK OF AFFORDABILITY.**

An isometric illustration of a city street scene. The background shows a grid of buildings and streets in a light blue, wireframe style. Several blocks of buildings are highlighted with solid red colors, indicating specific areas of interest. The text is overlaid on the center of the image.

We believe walkable areas with existing infrastructure are the easiest targets for quick and cost-effective antidotes to **LACK OF DIVERSE NEIGHBORHOODS.**

An isometric illustration of a city street scene. The background shows a grid of buildings and streets in a light blue, wireframe style. Several red rectangular blocks are placed on the street, some with dashed lines connecting them to buildings, suggesting specific locations or targets. The text is overlaid in the center of the image.

We believe walkable areas with existing infrastructure are the easiest targets for quick and cost-effective antidotes to **LACK OF RESILIENCY.**

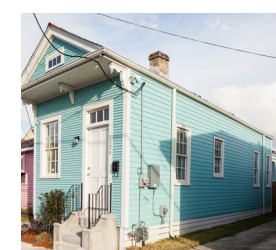
RENEWAL HOMES / NEW ORLEANS

- Affordable
- Sustainable
- Accessible
- Historic

100+
AFFORDABLE DWELLINGS
CREATED

35
YEARS OF AFFORDABLE
HOUSING SECURITY

ALL DWELLINGS ENTERPRISE
GREEN COMMUNITY CERTIFIED



GEORGIA AVE REDEVELOPMENT / SUMMERHILL

8

EXISTING BUILDINGS REUSED

2

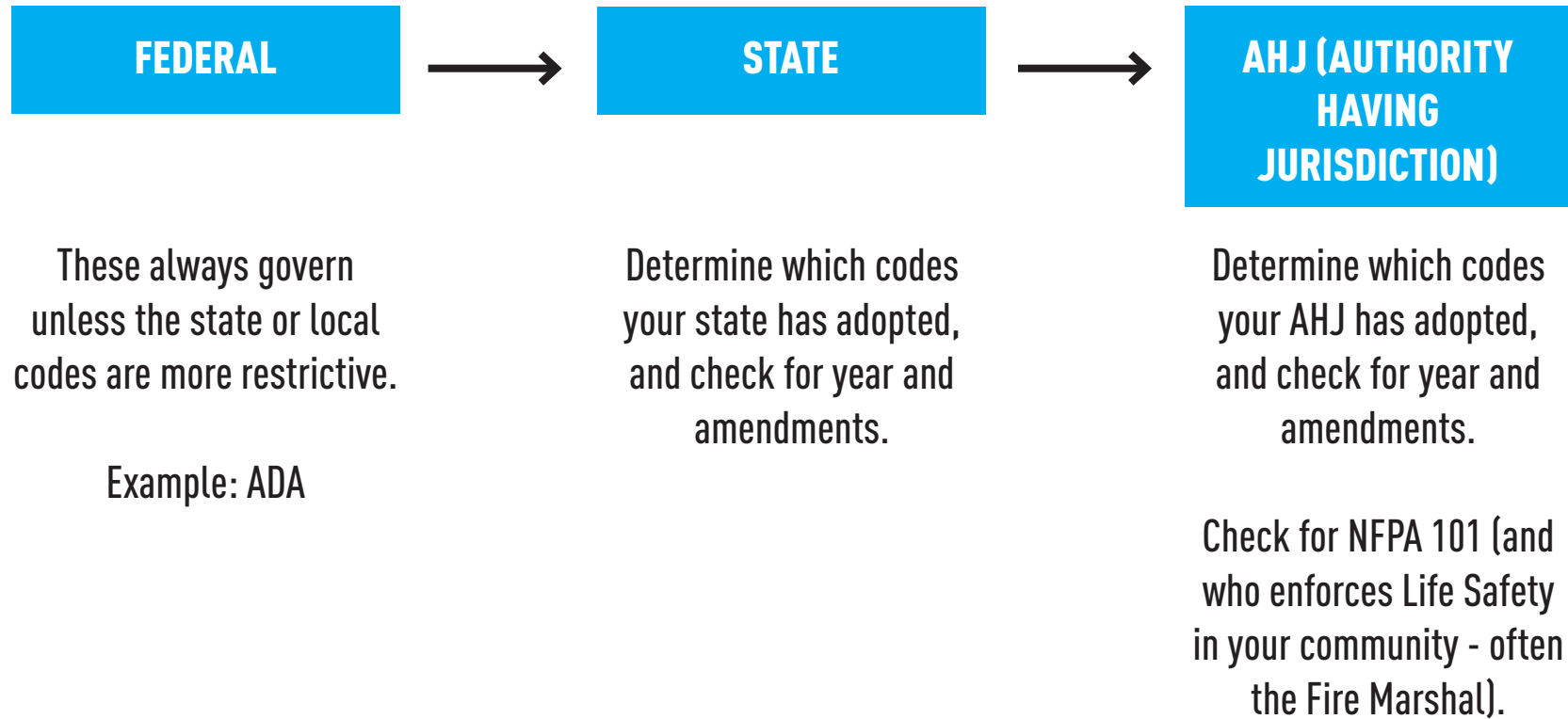
ADDITIONS

1

NEW CONSTRUCTION



WHICH CODES GOVERN?



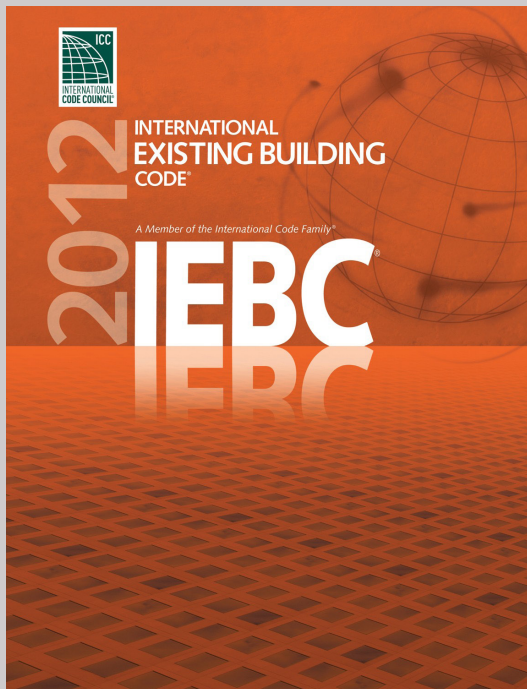
Codes often conflict and overrule each other, it's important to understand which governs and when!

BUILDING CODES VS. LIFE SAFETY

Remember, if both codes apply, the most restrictive requirements always governs.

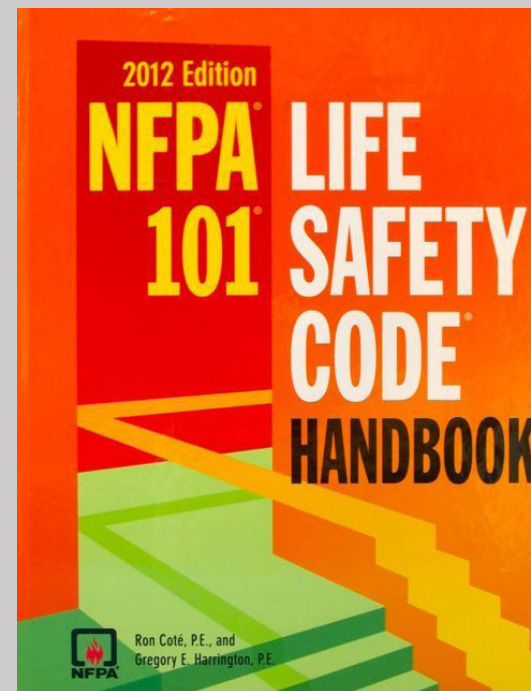
BUILDING CODES: IBC / IRC / IEBC

Building codes control height and area, openings, construction types, etc.



LIFE SAFETY: NFPA 101

Life Safety codes control exiting and means of egress. If NFPA 101 is adopted in your jurisdiction, it usually trumps anything concerning exiting or means of egress found in the building codes.



WHY WE LOVE THE IEBC

WE LOVE EXISTING BUILDINGS

- **Generate high tax values**
- **Efficient use of land**
- **Existing infrastructure**
- **Add character and beauty**

BUT EXISTING BUILDINGS ARE HARD TO REDEVELOP

- 
- Often don't meet new building code requirements
 - Often don't meet ADA requirements
 - Retrofitting to code compliance is costly and often more complicated than new construction

IEBC BASICS

IEBC COMPLIANCE METHODS

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graph TD; A[IEBC COMPLIANCE METHODS] --> B[PRESCRIPTIVE COMPLIANCE<br/>CHAPTER 4]; A --> C[WORK AREA COMPLIANCE<br/>CHAPTERS 5 - 13]; A --> D[PERFORMANCE COMPLIANCE<br/>CHAPTER 14];
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PRESCRIPTIVE COMPLIANCE CHAPTER 4

This is the most restrictive method, which overlaps with Chapter 34 of IBC.

We find it not very useful for our work.

WORK AREA COMPLIANCE CHAPTERS 5 - 13

We primarily work in this area.

We will be focusing on these chapters.

PERFORMANCE COMPLIANCE CHAPTER 14

We never use this method.

We find it causes more brain damage than it is worth.

IEBC CHAPTER 4: PRESCRIPTIVE METHOD

IF USING THIS METHOD, THIS SECTION ON STAIRS IS VERY HELPFUL!
ALSO NOTE THAT THIS EXCEPTION CAN BE FOUND IN IBC SECTION 3404.

IEBC SECTION 403 ALTERATIONS

403.1 GENERAL

Except as provided by Section 401.2 or this section, alterations to any building or structure shall comply with the requirements of the International Building Code for new construction. Alterations shall be such that the existing building or structure is no less conforming to the provisions of the IBC than the existing building or structure was prior to the alteration.

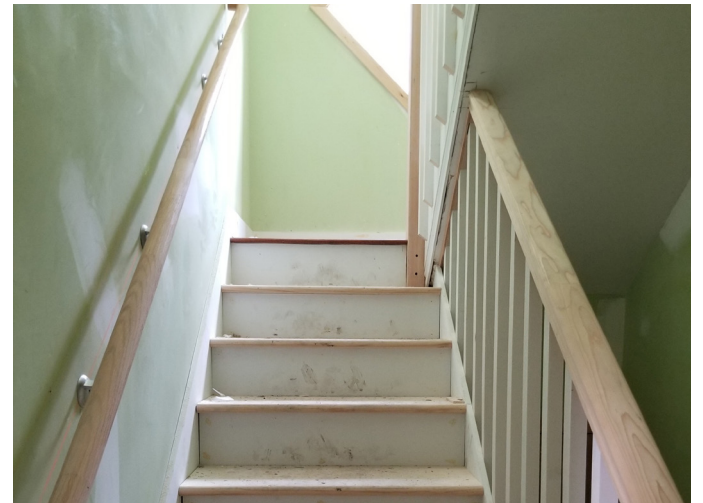
Exceptions:

1. An existing stairway shall not be required to comply with the requirements of Section 1009 of the IBC where the existing space and construction does not allow a reduction in pitch or slope.
2. Handrails otherwise required to comply with Section 1009.12 of the IBC shall not be required to comply with the requirements of Section 1012.6 of the IBC regarding full extension of the handrails where such extensions would be hazardous due to plan configuration.

***NOTE:** NFPA 101 requires a maximum riser height of 8" and a minimum tread depth of 9"



EXISTING NON-COMPLIANT STAIR



REPAIR OF EXISTING STAIR

IEBC CHAPTERS 5 -13: WORK AREA COMPLIANCE METHOD

REPAIRS / RENOVATIONS - CHAPTER 6 & CHAPTER 7 (LEVEL 1 ALTERATIONS = RENOVATIONS)

SCOPE OF WORK: BASIC MAINTENANCE. BUILDING OWNERS OFTEN DON'T USE AN ARCHITECT FOR THIS.

ALTERATIONS - CHAPTER 8 (LEVEL 2 ALTERATIONS) & CHAPTER 9 (LEVEL 3 ALTERATIONS)

CHANGE OF OCCUPANCY - CHAPTER 10

ADDITIONS - CHAPTER 11

SCOPE OF WORK: SOMETHING IS CHANGING. ARCHITECTS TYPICALLY WORK IN THESE CHAPTERS (AKA US!).

HISTORIC BUILDINGS - CHAPTER 12

WE FIND THE IEBC MOST USEFUL IF YOU CAN USE THIS CHAPTER!

IEBC CHAPTER 10: CHANGE OF OCCUPANCY

Occupancy: intended use for a space or spaces

Occupancy Classification: defined by IBC (Chapter 3)

Change of Occupancy: a change in the purpose or level of activity within a building that involves a change in application of the requirements of the code

*A change of occupancy does not always mean of a change of occupancy classification



EXISTING HISTORIC RECTORY



ALTERATION TO EDUCATIONAL FACILITY

IEBC CHAPTER 10: CHANGE OF OCCUPANCY

Here's what we find most helpful in Chapter 10:

Hazard Categories: In some instances in IEBC, occupancy classifications are categorized by “relative hazard.” If you stay within your relative hazard level, you don't trigger additional code requirements.

This means, in many cases, a change of use is possible without incurring prohibitive costs due to new code requirements!

This is incredibly helpful if little to no renovations are planned (ie you're just a new tenant or owner).

*Note that IBC does not provide guidance as to relative hazard, only IEBC

HAZARD CATEGORIES, means of egress

When a change of occupancy classification is made to a higher hazard category (lower number), the means of egress shall comply with IBC.

IEBC TABLE 1012.4 (or 912.4)

MEANS OF EGRESS HAZARD CATEGORIES

RELATIVE HAZARD	OCCUPANCY CLASSIFICATION
1 (HIGHEST HAZARD)	H
2	I-2, I-3, I-4
3	A, E, I-1, M, R-1, R-2, R-4
4	B, F-1, R-3, S-1
5 (LOWEST HAZARD)	F-2, S-2, U

HAZARD CATEGORIES, heights and areas

When a change of occupancy classification is made to a higher hazard category (lower number), heights and areas of buildings shall comply with IBC.

IEBC TABLE 1012.5 (or 912.5)

HEIGHTS AND AREAS HAZARD CATEGORIES

RELATIVE HAZARD	OCCUPANCY CLASSIFICATION
1 (HIGHEST HAZARD)	H
2	A-1, A-2, A-3, A-4, I, R-1, R-2, R-4
3	E, F-1, S-1, M
4 (LOWEST HAZARD)	B, F-2, S-2, A-5, R-3, U

HAZARD CATEGORIES, exterior walls

When a change of occupancy classification is made to a higher hazard category (lower number), fire ratings of exterior walls and openings in exterior walls shall comply with IBC.

IEBC TABLE 1012.6 (or 912.6)

HEIGHTS AND AREAS HAZARD CATEGORIES

RELATIVE HAZARD	OCCUPANCY CLASSIFICATION
1 (HIGHEST HAZARD)	H
2	F-1, M, S-1
3	A, B, E, I, R
4 (LOWEST HAZARD)	F-2, S-2, U

NPFA 101 HAZARD CATEGORIES

When a change of occupancy classification is made to a higher hazard category (lower number), the building shall comply with the requirements applicable to new construction (rather than existing).

NPFA TABLE 43.7.3

HAZARD CATEGORIES & CLASSIFICATIONS

HAZARD CATEGORY	OCCUPANCY CLASSIFICATION
1 (HIGHEST HAZARD)	Industrial or storage occupancies with high hazard contents
2	Health care, detention and correctional, residential board and care
3	Assembly, education, day care, ambulatory health care, residential, mercantile, business, general and special-purpose industrial, ordinary hazard storage
4 (LOWEST HAZARD)	Industrial or storage occupancies with low hazard contents

HAZARD CATEGORIES EXAMPLE



EXISTING OCCUPANCY:
PLACE OF RELIGIOUS WORSHIP
(A-3)



NEW OCCUPANCY:
BUSINESS
(B)

IEBC Means of Egress: B is lower than A ✓

IEBC Heights and Areas: B is lower than A-3 ✓

IEBC Exterior Walls: B is same as A ✓

NFPA 101: Assembly and Business are the same ✓

No changes of hazard categories!

NFPA 101 & EXISTING BUILDINGS

A change of use to a lower hazard category doesn't get you very far with NFPA without a historic designation.

You only get to use the existing category for your use in NFPA if your hazard category is the same or less, which renders it not very helpful.

KEY TAKEAWAY

Understand your existing and proposed occupancies and what a change in occupancy might mean for you.

Try to stay within your relative hazard category to minimize compliance with codes intended for new construction (for both IEBC & NFPA).

IEBC CHAPTER 12: HISTORIC BUILDINGS

“This section provides some blanket exceptions from the requirements when the building in question has historic value.”

IEBC SECTION 202

GENERAL DEFINITIONS

[B] HISTORIC BUILDING

Any building or structure that is listed in the State or National Register of Historic Places; designated as a historic property under local or state designation law or survey; certified as a contributing resource within a National Register listed or locally designated historic district; or with an opinion or certification that the property is eligible to be listed on the National or State Register of Historic Places either individually or as a contributing building to a historic district by the State Historic Preservation Officer or the Keeper of the National Register of Historic Places.



NFPA 101 & HISTORIC BUILDINGS

REMEMBER THAT NFPA STILL APPLIES!

- Read Chapter 43: Building Rehabilitation, which grants existing buildings more leeway
- Section 43.7 addresses changes of use that do and do not involve a change of occupancy
- Section 43.10 has significant overlap with IEBC Chapter 12 (for historic buildings)
- Plan to review your project with your Fire Marshal. Expect it to be a negotiation.

Get to know your fire marshal! Do your homework. Be patient, reasonable and kind.

IEBC CHAPTER 12: HISTORIC BUILDINGS

Here's what we find most helpful in Chapter 12:

Fire Safety (1203): This section grants code officials some leeway in means of egress components for historic buildings, particularly if you sprinkler.

Change of Occupancy (1205): This section grants some helpful exceptions and bonuses.

IEBC FIRE SAFETY (1203)

1203.7: One-hour fire resistant assemblies

Where 1-hour fire-resistance-rated construction is required by these provisions, it need not be provided, regardless of construction or occupancy, where the existing wall and ceiling finish is wood or metal lath and plaster.

1203.8: Glazing in fire-resistance-rated systems

Historic glazing materials are permitted in interior walls required to have a 1-hour fire-resistance rating where the opening is provided with approved smoke seals and the area affected is provided with an automatic sprinkler system.

1203.9 & 1203.10: Stairway railings & guards

Grand stairways shall be accepted without complying with the handrail and guard requirements. Existing handrails and guards at all stairs shall be permitted to remain, provided they are not structurally dangerous.

HISTORIC IS MOST USEFUL IF YOU SPRINKLER

Understand which sprinkler system is required for your building!

NFPA 13R - MULTIFAMILY

13R systems can usually tap into the existing domestic water system without requiring separate infrastructure



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NFPA 13 - MIXED / COMMERCIAL

A full 13 system requires a dedicated water line from the street with new tap and fee and new sprinkler riser.



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IEBC CHANGE OF OCCUPANCY (1205)

1205.2: Building Area

The allowable floor area for historic buildings undergoing a change of occupancy shall be permitted to exceed by 20% the allowable areas specified in Chapter 5 of the IBC.

1205.4: Occupancy Separation

Required occupancy separations of 1 hour may be omitted when the building is provided with an approved automatic sprinkler system throughout.

1205.15: Accessibility Requirements

Where compliance with the requirements for accessible routes, ramps, entrances, or toilet rooms would threaten or destroy the historic significance of the building or facility, as determined by the authority having jurisdiction, alternative requirements shall be permitted.

KEY TAKEAWAY

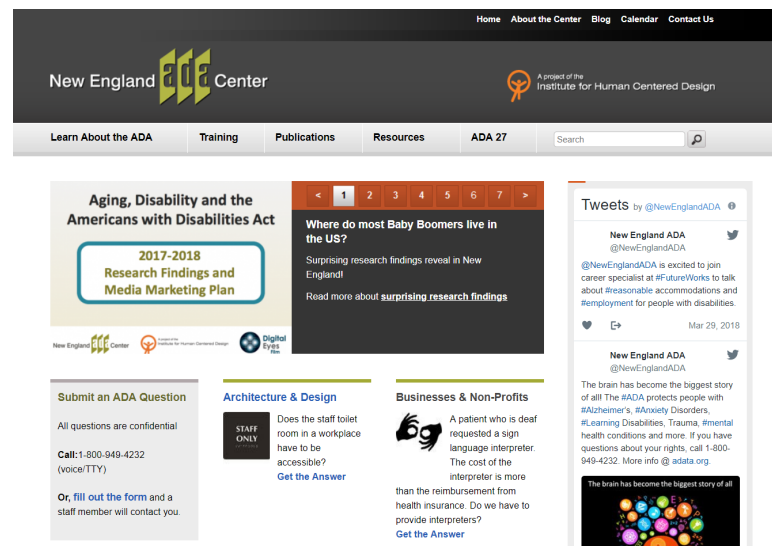
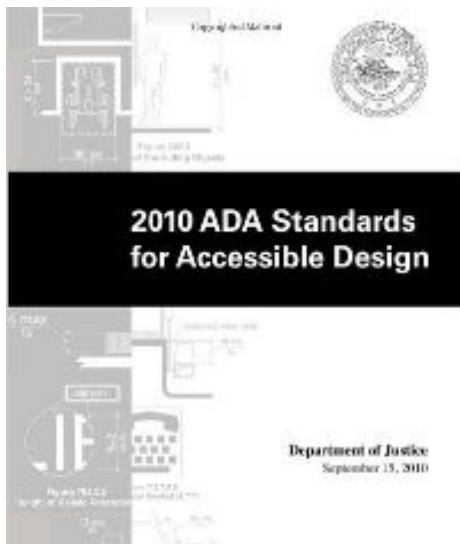
Understand that a historic designation grants your building a lot more leniency when it comes to code compliance.

A historic designation makes IEBC more useful because it correlates more directly with NFPA's historic designation.

IEBC & ACCESSIBILITY

REMEMBER THAT ADA GOVERNS!

- ADA is a federal law, therefore it governs
- Alterations shall not reduce accessibility of a building or portion of a building
- New England has its own ADA Website: <https://www.newenglandada.org/>



IEBC & ACCESSIBILITY FOR ALTERATIONS (1204)

IEBC SECTION 1204 ALTERATIONS

1204.1 ACCESSIBILITY REQUIREMENTS

The provisions of Sections 705, 806 and 906, as applicable, shall apply to facilities designated as historic structures that undergo alterations unless **technically infeasible**. Where compliance with the requirements for accessible routes, entrances, or toilet rooms would threaten or destroy the historic significance of the building or facility, as determined by the code official, the **alternative requirements** of Sections 1204.1.1 - 1294.1.4 for that element shall be permitted.

Technically infeasible and alternative requirements are two very important terms to understand!

TECHNICALLY INFEASIBLE

This term provides a basis for exceptions from strict code compliance for existing buildings, for both IEBC & NFPA.

IEBC SECTION 202

[B] TECHNICALLY INFEASIBLE

An alteration of a facility that has little likelihood of being accomplished because the existing structural conditions require the removal or alteration of a load-bearing member that is an essential part of the structural frame, or because other existing physical or site constraints prohibit modification or addition of elements, spaces or features which are in full and strict compliance with the minimum requirements for new construction and which are necessary to provide accessibility.

NFPA 101

3.3.274

A change to a building that has little likelihood of being accomplished because the existing structural conditions require the removal or alteration of a load-bearing member that is an essential part of the structural frame, or because other existing physical or site constraints prohibit modification or addition of elements, spaces, or features that are in full and strict compliance with applicable requirements.

IEBC ALTERNATIVE REQUIREMENTS (1204)

1204.1.1: Site Arrival Points

At least one accessible route from one site arrival point to an accessible entrance shall be provided.

1204.1.2: Multilevel Buildings and Facilities

An accessible route from an accessible entrance to public spaces on the level of the accessible entrance shall be provided.

1204.1.3: Entrances

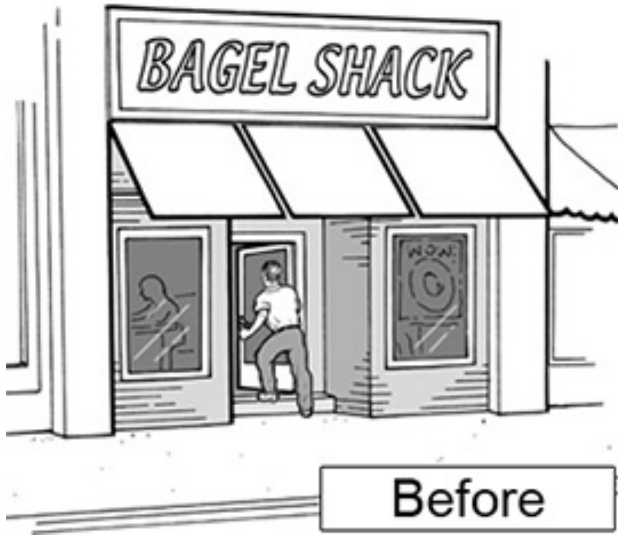
At least one main entrance shall be accessible. Exceptions:

1. If a main entrance cannot be made accessible, an accessible nonpublic entrance that is unlocked while the building is occupied shall be provided; or
2. If a main entrance cannot be made accessible, a locked accessible entrance with a notification system or remote monitoring shall be provided.

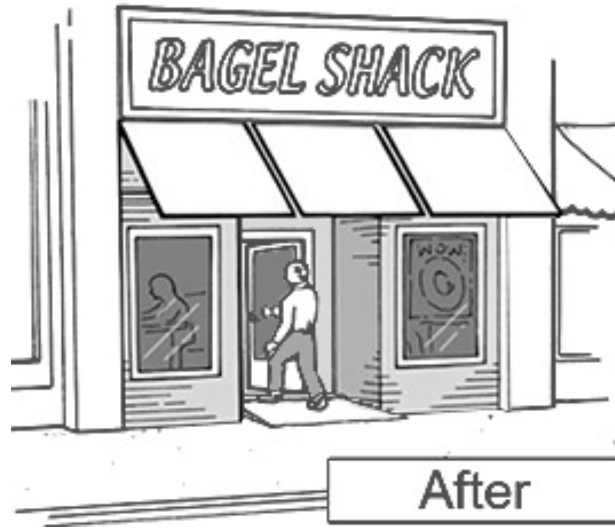
1204.1.4: Toilet and Bathing Facilities

Where toilet rooms are provided, at least one accessible family or assisted-use toilet room complying with Section 1109.2.1 of the International Building Code shall be provided.

EXAMPLE



PROBLEM: A STEP PROVIDES A BARRIER TO ENTRY



ALT 1: NON-ADA COMPLIANT RAMP



ALT 2: CURBSIDE SERVICE

Source:

<https://www.ada.gov/regs2010/smallbusiness/smallbusprimer2010.htm>

ADA RESOURCES

- 20% rule (see blog post)
- Checklist for Existing Facilities
- Tax incentives



ADA RELATED TAX INCENTIVES

Two incentives are available to small businesses to help cover the cost of making accessible improvements.

TAX CREDIT:

- Section 44 of Internal Revenue Code
- To help small businesses cover ADA-related "eligible access expenditures"
- For businesses with either revenues less than \$1,000,000 OR 30 or less full-time workers
- Up to a maximum of \$5,000 per year

TAX DEDUCTION:

- Section 190 of Internal Revenue Code
- For businesses of any size for the removal of architectural or transportation barriers
- Up to a maximum of \$15,000 per year

<https://www.ada.gov/archive/taxpack.pdf>



Blog Post:

<http://kronbergwall.com/understanding-ada-a-guide-for-small-developers/>

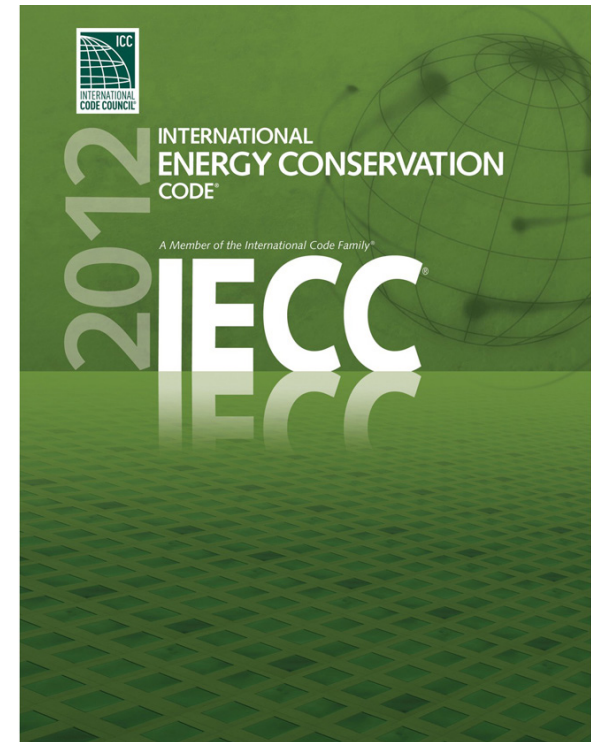


HISTORIC DESIGNATION & ENERGY CODES

IECC CHAPTER 1, SECTION 101 HISTORIC BUILDINGS

101.4.2

Any building or structure that is listed in the State or National Register of Historic Places; designated as a historic property under local or state designation law or survey; certified as a contributing resource with a National Register listed or locally designated historic district; or with an opinion or certification that the property is eligible to be listed on the National or State Registers of Historic Places either individually or as a contributing building to a historic district by the State Historic Preservation Officer or the Keeper of the National Register of Historic Places, **are exempt from this code.**



CONCLUSION

1. IF POSSIBLE, DESIGNATE HISTORIC

2. SIT DOWN WITH YOUR FIRE MARSHAL & BUILDING PLAN REVIEWER EARLY IN THE PROCESS TO TALK ABOUT POSSIBLE ISSUES AND PROPOSED SOLUTIONS

3. IF CHANGING USE, TRY TO STAY WITHIN YOUR HAZARD CATEGORY

4. IF NECESSARY, SPRINKLER YOUR BUILDING

5. TALK TO A STATE ADA REPRESENTATIVE ABOUT POSSIBLE ISSUES AND PROPOSED SOLUTIONS (A HISTORIC DESIGNATION HELPS)

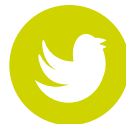


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