



model public policies

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Adopting 21st Century Codes for Historic Buildings

by Marilyn Kaplan

The *International Existing Building Code (IEBC)*[®] is a powerful tool to encourage building rehabilitation and the restoration of historic properties. It provides a choice of three code methods that can address the majority of code challenges faced with historic structures. Although the structure and approach of this rehabilitation code differ from traditional codes written for new construction, it has been written through a consensus process and widely tested. Adoption of this document is highly encouraged for every community looking to capitalize on one of its most important resources—the existing, underutilized building stock.

The following information will help preservationists advocate for its acceptance as another vital tool for encouraging safety upgrades and financial investment in historic properties. While much of this digest focuses on the 2006 edition of the IEBC, it is applicable also to the 2003 IEBC and the other proportional codes that have been developed since 1997. For more general information on codes, see *Building Codes and Historic Buildings* (www.preservationbooks.org).

A UNIFIED CODE SYSTEM

The International Building Code (IBC), with its focus on new construction, was first published in 2000 with subsequent editions in 2003 and 2006. Like the previously published model codes, the IBC was inadequate in addressing existing and historic buildings.

Since the late 1970s, isolated efforts have been undertaken to address building codes as applied to the rehabilitation of existing structures. As part of a larger endeavor to create a single set of national building codes that could be adopted nationwide, the first edition of the IEBC was published in 2003 by the International Code Council, Inc. (ICC)[®]. The ICC was formed in 1997 by four organizations¹ in order to create a single set of codes for architects, engineers, contractors, and manufacturers working across jurisdictions and state boundaries. This unified code system provides the opportunity to improve the consistency of regulatory application and to increase standardization within the design and construction industries.

The ICC publishes 14 model codes collectively referred to as the I-Codes.² (See <http://www.iccsafe.org/government/adoption> for a full list of jurisdictions that have adopted the IBC, IEBC, or other I-codes.) Like all building codes and regulations, these must be adopted by a state or lesser jurisdiction. There is tremendous variation in how states regulate buildings. Some mandate the use of a state-published or adopted code(s) to regulate all public and private construction activities, while others regulate only specific occupancy types (such as hospitals, schools, or other public buildings) and leave local jurisdictions to determine if and how other construction will be regulated. In jurisdictions that adopt a building code, the ICC's *International Building Code*[®] (IBC) has become most common, replacing the *Uniform Building Code*, the *National Building Code*, and the *Standard Building Code*. The I-codes typically are revised on a three-year cycle, with revisions affecting more than one document correlated to the other codes.

The IEBC was among the first of a new breed of codes to comprehensively address existing and historic buildings. Because the first edition of the IEBC was not published until 2003, wide adoption of the IEBC has lagged behind the IBC and other I-codes. Few changes have occurred between the 2003 and 2006 IEBC editions. Most significant are the addition of the Prescriptive Compliance method and some technical provisions related to structural conditions, accessibility, and fire protection.

The IEBC follows the conceptual framework established in HUD's 1997 *Nationally Applicable Recommended Rehabilitation Provisions* and New Jersey's *Uniform Construction Rehabilitation Subcode*, first published in 1998. All are *proportional* codes that expand on the stepped approach to building rehabilitation, referred to as the 25/50 percent rule, which had existed in previous documents.³ The proportional codes provide special consideration to relocated buildings and additions and have four important differences from previous rehabilitation codes:

Thresholds for Required Work. The IEBC replaces the three-step 25/50 percent system with a sliding scale of requirements in five work classifications, categorized as a function of the scope of work intended by the applicant (fig. 1).

Work Areas and Supplemental Requirements. The concept of *work area* is another means to limit the required work so that most rehabilitation projects need not meet new construction standards. At the lower levels of work classification, Repair and Alteration Level 1, requirements generally are limited to the work area defined by the scope of repairs intended by the applicant. For more intensive projects classified as Alteration Level 2 or 3, additional work may be required outside of the work area.

Change of Occupancy. Earlier codes required projects involving a change of occupancy to meet new construction standards. The proportional codes evaluate Changes of Occupancy according to the change of hazard level presented by the old and new occupancies relative to three categories: Means of Egress, Building Heights and Areas, and Exposure of Exterior Walls. The most stringent requirements are imposed on occupancy changes where there is a hazard increase.

Historic Building Provisions. Provisions that serve as exceptions or provide alternate approaches for qualified historic buildings are included. In some situations these require approval by the code official (fig. 2).

These basic concepts are included in the IEBC as well as Chapter 15 of the NFPA 5000 *Building Construction and Safety Code*, the New Jersey *Uniform Construction Rehabilitation Subcode*, and other proportional codes that follow the general format of the IEBC, most notably the statewide codes of New York, Rhode Island, and Maryland.

ADVOCATING FOR LOCAL ADOPTION

Although the IEBC has been adopted in many states and local jurisdictions, statewide use occurs only where code compliance is in effect statewide. The success of the IEBC is partially attributed to the reluctance of a jurisdiction to dedicate resources to the effort required to

DEFINITIONS

As-of-right: Provisions that are code compliant and do not require variances or approval by the code official.

Change of Use: Change in a building's Occupancy Classification when a building used for one use is changed to accommodate another use.

Construction Classification: One of five classifications designated to existing buildings according to the relative level of fire resistance of a building. These include Type I and II (noncombustible structural, wall, roof, and floor elements), Type III (only exterior walls noncombustible), Type IV (exterior walls noncombustible; interior elements of solid or laminated wood without concealed spaces), and Type V (construction of any material permitted by code).

Design Professional: Architect, engineer, or other professional licensed and registered in the state to perform architectural and engineering work on buildings.

Fire Protection System: Alarm, Detection, and Suppression: Equipment installed within a building to detect a fire, to alert occupants and fire fighting personnel, and to suppress a fire.

Hazard Index: For projects involving a Change of Occupancy, the means used to determine whether a change from one use group to another increases the life safety hazard of the building.

Historic Building (IEBC Definition): 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 in 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.

Means of Egress (NFPA Definition): A continuous, unobstructed path of vertical and horizontal egress travel from any occupied portion of a building or structure to a public way. A means of egress consists of three separate and distinct parts: the exit access, the exit, and the exit discharge.

Model Code: A code regulating some aspect of construction written by a non-governmental organization intended for adoption or modification by a state or lesser jurisdiction.

Occupancy Classification: One of 10 classifications designated to existing and proposed building uses that share similar characteristics related to hazard, mobility, and others affecting occupant safety. Examples: Assembly (A), Business (B), Mercantile (M), Residential (R), etc. Most classifications are further subdivided to reflect unique hazards [R-1 (occupants transient in nature, such as hotel or boarding house), R-2 (occupants permanent in nature, more than 2 dwelling units), R-3 (occupants permanent in nature, no more than 2 dwelling units), etc.].

Performance Compliance: The process of developing a building or code solution to meet a stated safety goal. In the IEBC, the performance compliance method expresses a building's level of safety as a function of the total numerical scores of 19 fire safety parameters.

Prescriptive Compliance: The use of specific definitions and dimensions for design and construction to determine code-compliant solutions; such as, 7'0" ceiling height, door with 1-hour fire resistance rating, etc.

Work Area: Area of a building where the applicant intends to undertake rehabilitation work. This concept is applicable beginning with Alteration Level 2 work classification.

Work Classification: One of five classifications of work designated based on type and extent of applicant-proposed work: Repair, Alterations Level 1-3, Change of Occupancy.

write and maintain a unique rehabilitation code. The IEBC is most typically adopted verbatim, although some states have modified text to address issues of local importance or to coordinate with other codes or policies.⁴ Use of the IEBC will grow as the document becomes more widely known and as confidence in it increases based on future editions' technical and administrative improvements.

Advantages of the IEBC

As a tool to encourage building rehabilitation, the IEBC provides many advantages:

Predictability. Technical provisions for historic and existing buildings were historically vague in building codes written for new construction. Because the three code paths included in the IEBC address most rehabilitation issues, the design professional can solve many common historic building issues without involving the code official.

Encourages Reinvestment. Statistical evidence documents the contributions proportional codes have made to urban revitalization.⁵ The reuse of downtown buildings, in particular upper floors, is a critical component of efforts to encourage economic development of the nation's older cities.

Safety. Rehabilitated buildings are safer than vacant and unimproved buildings. Vacant buildings are most susceptible to arson, a leading source of fire start in the U.S. Fires are also most likely to occur in poorly maintained buildings that lack basic safety improvements including upgrades to electrical systems and heating appliances.

Tax Revenue. Rehabilitated buildings increase public revenue by generating increased property and sales taxes. Even the rehabilitation of buildings owned by nonprofit entities can generate sales taxes through expenditures of visitors and employees.

Smart Growth and Sustainability. Community and regional planning trends focus on growth with minimal environmental impact, opportunities to reuse existing infrastructure, and the deceleration of urban and suburban sprawl. All of these goals rely on the technical and economic feasibility of building reuse.

Steps to Adoption

Adoption of the IEBC is a legal procedure coordinated by the jurisdiction. Chapter 1 of the IEBC includes a model administrative structure for adoption of the document, including creating an enforcement agency, establishing duties of the code official, procedures for permits, fee structures, etc. The IEBC also includes a sample ordinance to assist in the adoption process. The IEBC includes references to the other I-Codes, in particular the building, fire, energy conservation, property maintenance, and plumbing codes, and all should be adopted for proper use of the IEBC.

Advocating for the IEBC adoption will require promoting its value as an economic development and historic preservation tool. Advocates may also find some of the following efforts to be constructive:

- Create a core advocate group with various backgrounds and skills and established relationships with elected and jurisdictional officials. This group might include a planner, architect, engineer, preservationist, developer, representative of the construction industry, and property owners.
- Identify allies who support the effort locally. These include preservation or economic development agencies and organizations; local or state building and fire officials; chambers of commerce; representatives of neighborhood associations or business improvement districts; and architects, engineers, builders, or contractors associations.
- Develop written materials stating the importance of the IEBC for community revitalization efforts, intended for elected officials and the press. See Sample Press Statement on page 3.

- Invite persuasive speakers experienced with the IEBC to public meetings to discuss the potential of the IEBC, including examples of relevant projects in other communities.
- Provide training for code officials and local design professionals and contractors once the IEBC is adopted. It is imperative that financial resources be dedicated to training of the code official(s) and local architects, engineers, and contractors.⁶

Anticipating Resistance

Liability. Resistance to change should be anticipated, and a common concern among code and public officials is liability. However, because an applicant can choose among three methods of compliance and use the as-of-right solutions for historic buildings, fewer discretionary actions to approve a solution or a waiver or variance request are required of the code official. In instances where the approval of the code official is required, the IEBC explicitly states the basis for accepting alternate solutions, and directs the applicant to provide research or Historic Reports and, as applicable, test results.

Active vs. Passive Protection. The IEBC relies on active fire protection (fire alarm, detection, and suppression) to a greater extent than the passive protection of earlier codes that was accomplished by heavy masonry or timber construction, compartmentation, etc. This reliance mirrors trends in modern construction practices for new construction.

Life Safety in Single-Exit Buildings. Many buildings located in historic downtowns have relatively small floor plates or are landlocked, situations that limit the financial or technical feasibility of adding a second exit. To create safer and more economically productive downtowns, the rehabilitation of these buildings can be accomplished using active fire protection systems and alternate approaches established in the IEBC.

ONE CODE, THREE APPROACHES

Applicability

The IEBC applies to all existing buildings legally occupied on the date of its adoption that are undergoing a Repair, Alteration, Reconstruction, or Change of Occupancy (fig. 1). Buildings legally occupied on the date of IEBC adoption are permitted to continue without change, although retroactive provisions establishing a minimum level of safety exist in the *International Fire Code* and the *International Property Maintenance Code*.

Although the IEBC is a stand-alone document, it includes references to other I-codes (in particular the building, fire, plumbing, and residential codes) that should also be adopted by the jurisdiction. The IBC establishes the basic code interface of construction and occupancy classifications and height and area limits, as well as requirements for fire exits and alarm, detection, and suppression systems.

Methods of Compliance

Applicants can select the method of code compliance most advantageous to a project from the three approaches included in the IEBC:⁷

- Prescriptive compliance method
- Performance compliance method
- Work area compliance method

Alternative material, design, and methods of construction and equipment can be proposed (S104.11) with any of these methods, provided that substantiating tests and/or research reports are accepted by the code official.

Prescriptive Compliance (Chapter 3). This approach, new to the 2006 edition, requires compliance with the *International Fire Code* plus the provisions of Chapter 3 of the IEBC related to structural systems, mechanical and electrical systems, fire escapes, accessibility, and

Sample Press Statement

(Organization Name) supports the adoption of the 2006 International Existing Building Code for use on all existing and historic buildings in our community. While other codes written for new construction discourage rehabilitation of existing buildings, the International Existing Building Code has encouraged reinvestment in older downtown areas throughout the country. Written by building code and fire officials, the code provides alternate safety solutions for many of the most common situations presented by existing buildings, and will assist local code enforcement efforts in simplifying their review for existing buildings and creating more consistent solutions. Adoption of the International Existing Building Code will permit upper floors of downtowns to be reoccupied, add revenue to our tax bases, and help in our efforts to create a vital community.

relocated and historic buildings. Typical to the IEBC format, requirements are established separately for projects undergoing Repair, Alterations, an Addition, and a Change of Occupancy. Two provisions exist for historic buildings: S306.1 (below) and S306.2, applicable to work on historic buildings in flood hazard areas.

S306.1 Historic buildings. The provisions of this chapter relative to the construction, repair, alteration, addition, restoration and movement of structures, and Change of Occupancy shall not be mandatory for historic buildings where such buildings are judged by the code official to not constitute a distinct life safety hazard.

Performance Compliance Alternatives (Chapter 13). This method gives a numerical rating to each of 19 fire safe parameters (ranging from building height to means of egress lighting) based on a building's specific characteristics and features. If the sum of the scores for these 19 parameters is 100 or greater, the building is considered code compliant. A score of less than 100 can be increased by achieving a higher rating in any of the 19 parameters, as appropriate to the building's physical limitations and historic conditions. Flexibility in achieving solutions is available without negotiation with the code official, and many design professionals will determine the viability of this approach before using the alternate compliance methods.

Work Area Compliance (Chapters 4-11). This approach establishes prescriptive requirements based on the work being classified as, in ascending order of rehabilitation intensity and code stringency, Repair; Alteration Level 1, 2, or 3; or Change of Occupancy (fig. 1). Many of the provisions established in the work classification chapters are modified by the Historic Building provisions of Chapter 11 (fig. 2). Unless otherwise stated, in all work classifications new elements must comply with the requirements of the IBC.

Requirements for projects classified as Repair or Alteration Level 1 are limited to the physical work area defined by the applicant's proposal. For Alteration Level 2 projects where the work area exceeds 50 percent of the floor, additional items outside the work area (including the egress route on the floor on which rehabilitation will occur, or all tenant spaces on a floor) are imposed. At Alteration Level 3, requirements can also extend to floor levels beneath the proposed work area.

For projects involving a Change of Occupancy, requirements are established through a comparison of the relative hazard change between

FIGURE 1
Areas of Focus by Work Classifications

	Structural	Electrical	Accessibility	Vertical Openings	Fire Protection	Means of Egress	Mechanical	Plumbing
Repair (Chapter 5). Patching or restoration or replacement of damaged materials, elements, equipment, or fixtures for the purpose of maintaining such components in good or sound condition with respect to existing loads or performance requirements.	X	X						
Alterations Level 1 (Chapter 6). Removal and replacement or the covering of existing material, elements, equipment of fixtures using new materials, elements, equipment, or fixtures that serve the same period.	X		X					
Alterations Level 2* (Chapter 7). Reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment.	X	X	X	X	X	X	X	X
Alterations Level 3** (Chapter 8). Where Work Area exceeds 50 percent of the aggregate area of the building.	X		X	X	X	X	X	
Change of Occupancy (Chapter 9). Change in the purpose or level of activity in the building	X	X	X	X	X	X	X	X

* Alterations Level 2 work requires compliance with work specified for Alterations Level 1 plus additional provisions of Chapter 7.

** Alterations Level 3 work requires compliance with work specified for Alterations Levels 1 and 2 plus additional provisions of Chapter 8.

the old and proposed new use in three categories: Means of Egress, Heights and Area, and Exposure of Exterior Walls. Each of the code's Occupancy Classifications (Assembly, Mercantile, Business, etc.) is assigned a ranking between 1 and 5 according to the level of hazard that occupancy presents. The code is most stringent when an increase in hazard occurs, and less stringent when there is a decrease in hazard or no change. For example, for the Means of Egress category, the code ranks a business occupancy as level 4 and an assembly occupancy as level 3, a higher hazard. Thus, a conversion from an office (business occupancy) to a theater (assembly occupancy) would require compliance with the provisions established to safeguard against this relative increase in hazard.

Chapter 11 Historic Buildings modifies many of the rehabilitation provisions included in Chapters 4-9, and those of Chapter 10 Additions. A Historic Report may be required to utilize this chapter, and in some cases, the code official must approve the use of the historic building provision. Figure 2 lists the specific items addressed in this chapter.

ENHANCEMENTS AND ALTERNATE CODES

The IEBC is a model code and can be modified by a jurisdiction to meet local concerns or regional priorities. Modifications can be incorporated directly into the IEBC format or adopted through separately enacted provisions.

Repairs and Alterations Level 1-3	Change of Occupancy
1. Historic Report	1-12 from Repairs and Alterations, plus
2. Museums	13. Building Area
3. Sprinkler Alternative	14. Occupancy Separation
4. Means of Egress (Dimensions)	15. Roof Covering
5. Transoms	16. Door Swing
6. Interior Finishes	17. Transoms
7. Stairway Enclosure	18. Finishes
8. 1-Hour Fire Rated Assemblies	19. Exit Stair Live Load
9. Glazing in Fire Rated Systems	20. Natural Light
10. Stair Railings and Guards	21. Live Loads
11. Exit Signs	22. Unsafe Conditions
12. Accessibility	

The chart on the following four pages identifies historic building provisions included in other rehabilitation documents that merit consideration when a jurisdiction adopts or prepares to enhance the IEBC. In many cases, these are included in the IEBC for Repairs and Alterations Levels 1-3, or for Changes of Occupancy. The rationale for the distinction between the applicability of a provision to the various work classifications is not transparent, and it is recommended that consideration be given to extending the provisions to all work classifications.

NOTES

¹ These included the model code organizations Building Officials and Code Administrators International, Inc. (BOCA), International Conference of Building Officials (ICBO), the Southern Building Code Congress International (SBCCI), and the National Fire Protection Association (NFPA)[®], which ultimately left the consortium. The model code organizations had published building codes for adoption in three regions of the country, tailored to address issues of regional concern.

² In addition to the IEBC, the ICC publishes the *International Building Code*[®], *ICC Electrical Code*[®], *International Energy Conservation Code*[®], *International Fire Code*[®], *International Fuel Gas Code*[®], *International Mechanical Code*[®], *ICC Performance Code for Buildings and Facilities*[®], *International Plumbing Code*[®], *International Private Sewage Disposal Code*[®], *International Property Maintenance Code*[®], *International Residential Code*[®], *International Wildland-Urban Interface Code*[™], and *International Zoning Code*[®].

³ Existing buildings were typically governed by the 25/50 percent rule that compared proposed rehabilitation expenses to a building's replacement value. Only minimal requirements were imposed on proposed rehabilitation projects valued at less than 25% of the replacement cost; more substantial requirements existed for projects between 25% and 50% of the replacement cost; and changes of occupancy or projects with rehabilitation expenses that exceeded 50% of the replacement cost were required to meet new construction standards. Definitions of replacement and rehabilitation costs were subjective, and the rule discouraged substantial rehabilitation projects through the requirement that projects exceeding 50% of the replacement cost meet standards for new construction.

⁴ Maryland is scheduled to replace its 2001 *Maryland Building Rehabilitation Code* with the IEBC in early 2007, largely due to the cost of maintenance of a unique code.

⁵ Example: New Jersey statistics. See Costs and Benefits section at www.nj.gov/dca/codes/rehab/pioneerart.shtml.

⁶ The State of Maryland designed a premier training and outreach program that included promotional materials, a toll-free hot line, and website with Frequently Asked Questions. See www.dhcd.state.md.us/Website/programs/smartcodes/smartcodes.

⁷ Alternately, an applicant can comply with either the prescriptive provisions or compliance alternatives included in the IBC's Chapter 34 Existing Structures. The compliance alternatives are similar to that included in the IEBC, although the final safety scores are approximately 20% higher in the IBC. In rare instances, the *ICC Performance Code for Buildings and Facilities* is used to develop a unique solution for an existing building. While S104.11 may be invoked when a single alternate material is proposed, the Performance Code is used for proposing a more comprehensive alternate approach and requires a high level of engineering and adherence to an articulated administrative process.

FIGURE 3 Recommended Historic Building Enhancements

KEY TO SOURCES

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| <p>1 New York State (Building Code of New York State, Appendix K, or New York State Existing Building Code, (proposed 2007))</p> <p>2 National Fire Protection Association (NFPA 914 Code for the Protection of Historic Structures)</p> <p>3 California (California Historical Building Code: Title 24, Part 8; or proposed Californian Historical Building Code)</p> | <p>4 New Jersey (New Jersey Uniform Construction Rehabilitation Subcode)</p> <p>5 Wisconsin (Wisconsin, ILHR, Chapter Comm 70)</p> <p>6 Rhode Island (Rhode Island Rehabilitation Code)</p> <p>7 Author</p> <p>8 IEBC</p> |
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	ITEM/SOURCE	RECOMMENDED LANGUAGE
GENERAL		
1	Alternatives / Historic Report (1)	<p>A historic building undergoing repair, alteration, or Change of Occupancy shall be investigated and evaluated. If it is intended that the building meet the requirements of this chapter, a written Historic Report shall be prepared and filed with the code official by a registered design professional when such a report is necessary in the opinion of the code official.</p> <p>1. Such report shall be in accordance with Chapter 1 and shall identify:</p> <ol style="list-style-type: none"> a. Where compliance with provisions of other chapters would damage the contributing historic character or contributing historic features. b. Each required safety feature that is in compliance with the provisions of this chapter. c. For those features proposed for retention but not in compliance with the provisions of this chapter, how the intent of these provisions is complied with in providing an equivalent level of safety. d. If an automatic suppression system is to be installed, the type and extent of the proposed system. <i>Exception:</i> For purposes of compliance with this section, NFPA 914 Code for Fire Protection of Historic Structures & NFPA 101 Alternative Approaches to Life Safety may be used for life safety features, provided these are documented in a report consistent with that described above. <p>2. For buildings in high seismic zones, the report shall include a structural evaluation describing, at minimum, a complete load path and other earthquake resistant features.</p> <p>3. If the proposed project as documented in the report is not acceptable, the local code official will provide written comments and request review comments from the local or state historic preservation officer.</p>
2	Tolerances, Alternatives, Equivalencies, and Modifications (2), (3)	<p>1. The code official shall accept solutions established through the application of Tolerance Values, Alternatives, Equivalencies, or Modifications that achieve an overall safety level equal to or exceeding that specified in this code provided these are documented in the Historic Report.</p> <p>2. Tolerance values are those within 5% variation of the prescriptive criteria that will have a <i>de minimis</i> impact on overall building safety and as required to achieve historic preservation objectives established in the Historic Report.</p>
3	Alternative Technologies (3)	Alarms, smoke and heat detection systems, annunciators, smoke control and modeling, exiting modeling and analysis, and other technologies may be accepted by the jurisdiction when it can be shown or proven to provide equivalence to the requirements of regular code.
4	Liability (3)	Prevailing law regarding immunity of local officials is unaffected by the use and enforcement of this code.
5	Review and Appeals (3)	In order to provide for interpretation of the provisions of this code and to hear appeals, the Historic Building Safety Board shall act as an appeal and review body to state and local agencies and any affected party.
ACCESSIBILITY		
6	Accessibility (1)	The accessibility provisions related to alterations and changes of occupancy shall apply unless technically infeasible. Where compliance with the requirements for accessible routes, ramps, entrances, or toilet facilities would threaten or destroy the historic significance of the building or facility, as determined by the code official or the state historic preservation officer, the alternative requirements provided shall be permitted.
BUILDING HEIGHT AND AREA		
7	Building Height (3)	The maximum height and number of stories of a historic building shall not be limited because of construction type, provided such height or number of stories does not exceed that of its historical design.
8	Building Height – High Rise Buildings (3)	<p>Non-residential and non-hazardous occupancy buildings over 75 feet in height may be permitted with only the stories over 75 feet provided with an automatic sprinkler system if:</p> <ol style="list-style-type: none"> 1. The building construction type and the exits conform to the prevailing code, 2. A complete building fire alarm and annunciation system is installed, and 3. An area separation is provided between floors where an automatic sprinkler system does not exist.
9	Building Floor Area (3), (7)	<p>1. Regardless of the use or character of occupancy, the area of a one-story historical building shall not exceed 15,000 square feet (1393.5 m²) unless such increase is otherwise permitted in the prevailing code.</p> <p>2. Multi-story buildings (including basements and cellars): The allowable floor area for historic buildings shall be permitted to exceed the allowable areas specified in the prevailing code by 20 percent.</p> <p><i>Exception:</i> Historic buildings provided with an approved automatic sprinkler system may be unlimited in floor area without fire-resistive area separation walls.</p>
10	Height and Area for Change to Higher Hazard Category (1)	<p>When a Change of Occupancy classification is made to a higher hazard category as shown in Table 912.5, heights and areas of buildings and structure shall comply with the requirement of Chapter 5 of the building code for the new occupancy classification.</p> <p><i>Exception:</i> In other than Groups H, F-1, and S-1 in lieu of fire walls, use of fire barriers having a fire-resistance rating of not less than 2 hours constructed in accordance with Section 706 of the prevailing code shall be permitted to meet area limitations in buildings protected throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the fire code.</p>
DOORS, HARDWARE, WINDOWS		
11	Door Dimensions (5)	Exit doors with two leaves less than 32 inches in width may remain provided that the total door width measures at least 36 inches and both leaves are easily operable.
12	Door Hardware (1), (4)	Existing or replica hardware is permitted, provided that no life safety hazard is created and the hardware meets the intent of ICC/ANSI A117.1 for operation without causing pinching, grasping, or twisting. Existing or replica hardware may be modified or fixed in place to meet the intent.

ITEM/SOURCE		RECOMMENDED LANGUAGE
DOORS, HARDWARE, WINDOWS (cont.)		
13	Doors – Paneled and Wood (1), (4), (7), (8)	<ol style="list-style-type: none"> Historic paneled doors located in corridors required to have a one-hour fire rating may remain provided that: <ol style="list-style-type: none"> The doors are tight fitting, The building is equipped with an automatic sprinkler system, and A quick response sprinkler head is located at each side of the door. If the automatic sprinkler system is not otherwise required, a NFPA 13R or NFPA 13D system is permitted. Alternative methods of establishing an approximate fire rating of twenty (20) minutes for the above doors may be approved by the code official in accordance with certifications provided by nationally recognized testing facilities.
14	Door Swing (4), (7), (8)	<p>The front or main exit doors need not swing in the direction of the path of exit travel, provided that other approved means of egress having sufficient capacity to serve the total occupant load are provided.</p> <p><i>Exception:</i> Approval by the code official is required when the total occupant load is greater than 50 persons.</p>
15	Escape Windows And Doors (3), (7)	<p>Basements in dwelling units and every sleeping room below the fourth floor shall have at least one operable window or door approved for emergency escape which opens directly into a public street, public way, yard, or exit court. Escape or rescue windows or doors shall have a minimum clear area of 3.3 square feet (0.31 m²), a minimum width or height of 18 inches (457 mm), and be operable from the inside to provide a full, clear opening without the use of special tools.</p> <p><i>Exception:</i> Approval by code official required for buildings undergoing a Change of Occupancy in all hazard categories.</p>
EXITS		
16	Number of Exits (Single-Exit Buildings) (1)	<p>Every story utilized for human occupancy on which there is a work area that includes exits or corridors shared by more than one tenant within the work area shall be provided with the minimum number of exits based on the occupancy and the occupant load in accordance with the building code. In addition, the exits shall comply with Sections 605.3.1.1 and 605.3.1.2.</p> <ol style="list-style-type: none"> In Group A, B, E, F, M, U and S occupancies, a single exit is permitted in the story at the level of exit discharge when the occupant load of the story does not exceed 50 and the exit access travel distance does not exceed 75 feet (22,860 mm). Group B, F-2, and S-2 occupancies not more than two stories in height that are not greater than 3,000 sf per floor (279 m²), when the exit access travel distance does not exceed 75 feet (22,860 mm): The minimum fire-resistance rating of the exit enclosure and of the opening protection shall be 1 hour. Open parking structures where vehicles are mechanically parked. In buildings containing Group B, S2, or M, the required building features in Table 605.3.1(1) shall be provided based upon the highest story occupied by the specific use group. In buildings containing Group R2 Apartment or Boarding Houses or R3, the required building features in Table 605.3.1.1 (2) shall be provided based upon the highest story occupied by the specific use group. In Group R-2, H-4, H-5, and I occupancies and in rooming houses and child care centers, a single exit is permitted in a one-story building with a maximum occupant load of 10 and the exit access travel distance does not exceed 75 feet (22,860 mm). In buildings of Group R-2 occupancy that are equipped throughout with an automatic fire sprinkler system, a single exit shall be permitted from a basement or story below grade if every dwelling unit on that floor is equipped with an approved window providing a clear opening of at least 4 square feet (.37m²) in area, a minimum dimension of 18 inches (457 mm) in height with bottom of opening no higher than 4 feet 6 inches (1,372 mm) in a basement. In buildings of Group R-3 occupancy equipped throughout with an automatic fire sprinkler system, only one exit shall be required from basements or stories below grade.
17	Exit Signs (7), (8)	<p>Where the exit sign or egress path marking location would damage the historic character of the building, alternative exit signs or egress path markings are permitted with approval of the code official. Custom designed exit signs meeting the intent of the prevailing code shall be permitted.</p>
18	Escape Ladder – Residential Occupancies (3), (7)	<p>Exit ladder devices that are permanently installed, fixed, folding, retractable, or hinged ladders manufactured as a means of emergency egress may be used in areas serving an occupant load of less than 6 persons on the second or third stories. Unless approved specifically for a longer length, the use shall be limited to 25 feet (7,620 mm) in length.</p> <p><i>Exception:</i> Approval by code official required for buildings undergoing a Change of Occupancy in all hazard categories.</p>
19	Means of Egress – Dimensions (2), (8)	<p>Existing door and window openings and corridor and stairway widths less than those specified elsewhere in this code may be approved, provided that there is sufficient width and height for a person to pass through the opening or traverse the means of egress.</p> <p><i>Exception:</i> Approval by code official required for buildings undergoing a Change of Occupancy in all hazard categories.</p>
20	Fire Escapes and Exit Ladders (3), (7)	<p>Exits shall conform or be made to conform to the provisions of the regular code.</p> <p><i>Exceptions:</i></p> <ol style="list-style-type: none"> New fire escapes and fire escape ladders which comply with Section 8-502.2 shall be acceptable as one of the required means of egress. Existing previously approved fire escapes and fire escape ladders shall be acceptable as one of the required means of egress provided they extend to the ground and are easily negotiated, adequately signed, and in good working order. Access shall be by an opening having a minimum dimension of 29 inches (737mm) when open. No sill shall be more than 30 inches (762mm) above the adjacent floor, landing, or approved step. Approval by code official required for buildings undergoing a Change of Occupancy in all hazard categories.
21	Fire Escapes – New (3)	<p>New fire escapes and new fire escape ladders shall comply with the following:</p> <ol style="list-style-type: none"> Access from a corridor shall not be through an intervening room. All openings within 10 feet (3,048 mm) shall be protected by ¾ -hour fire assemblies. When located within a recess or vestibule, adjacent enclosure walls shall be of not less than 1-hour fire-resistive construction. Egress from the building shall be by a clear opening having a minimum dimension of not less than 29 inches (737 mm). Such openings shall be operable from the inside without the use of a key or special knowledge or effort. The sill of an opening giving access shall not be more than 30 inches (737mm) above the floor, step, or landing of the building or balcony. Fire escape stairways and balconies shall support the dead load plus a live load of not less than 100 pounds per square foot and shall be provided with a top and intermediate handrail on each side. The pitch of the stairway shall not exceed 72 degrees with a minimum width of 18 inches (457 mm). Treads shall not be less than 4 inches (102 mm) in width and the rise between treads shall not exceed 10 inches (254 mm). All stair and balcony railings shall support a horizontal force of not less than 50 pounds per lineal foot (729.5 N/ m²) of railing. Balconies shall not be less than 44 inches (1,118 mm) in width with no floor opening other than the stairway opening greater than 5/8 inch in width. Stairway openings in such balconies shall not be less than 22 inches by 44 inches (559 by 1,118 mm). The balustrade of each balcony shall not be less than 36 inches (914mm) high with not more than 9 inches (287 mm) between balusters. Fire escapes shall extend to the roof or provide an approved gooseneck ladder between the top floor landing and the roof when serving buildings four or more stories in height having roofs with less than 4 units' vertical in 12 units' horizontal (33.3%) slope. Fire escape ladders shall be designed and connected to the building to withstand a horizontal force of 100 pounds (445 N) placed anywhere on the rung. All ladders shall be at least 15 inches (381 mm) wide, located within 12 inches (305mm) of the building.

ITEM/SOURCE		RECOMMENDED LANGUAGE
	Fire Escapes — New (cont.) (3)	Ladder rungs shall be ¾ inch (19.1 mm) in diameter and shall be located 12 inches (305 mm) on center. Openings for roof access ladders through cornices and similar projections shall have minimum dimensions of 30 inches by 33 inches (762 by 838 mm). The length of fire escapes and exit ladder devices shall be limited to that approved by the building official based on products listed by a recognized testing laboratory. 7. The lowest balcony shall not be more than 18 feet (5,486mm) from the ground. Fire escapes shall extend to the ground or be provided with counterbalanced stairs reaching to the ground. 8. Fire escapes shall not take the place of stairways required by the codes under which the building was constructed. 9. Fire escapes shall be kept clear and unobstructed at all times and maintained in good working order.
FIRE PROTECTION SYSTEMS		
22	Sprinkler Alternative (3), (7), (8)	1. Every historic building that does not conform to the construction requirements specified in this code for the occupancy or use and that constitutes a distinct fire hazard shall be provided with an automatic sprinkler system. However, the automatic sprinkler system shall not be used to substitute for, or act as an alternative to, the required number of exits from any facility. 2. For non-hazardous occupancies, an automatic sprinkler system is defined by the following standards: a. for floors fourth and below, NFPA 13R. b. for floors above the fourth, NFPA 13. c. for all floors of buildings taller than 75 feet, NFPA 13. d. When the building is freestanding, 2 floors, and 1,500 sf per floor or less, NFPA 13D. <i>Exception:</i> When the fire automatic suppression system is used to reach compliance in three or more occasions, the installed system shall meet the next higher NFPA standard and approval by the code official is required.
23	Sprinklers—A2 Occupancies (Nightclubs, Restaurants, Bars, Taverns w/> 50 persons) (5)	An automatic sprinkler system shall be provided when the existing building or structure or a portion of existing building or structure is changed to an A-2 occupancy.
INTERIOR DIMENSIONS, FINISHES AND MATERIALS		
24	Interior Finishes (7), (8)	Existing and replicated historic finishes of walls and ceilings shall be accepted where documented in the Historic Report.
25	Ceiling Height (4)	Existing ceiling heights shall be permitted to remain. <i>Exception:</i> Buildings of Group R-1 or R-2.
26	Dead-End Corridor (6)	In other than Group A occupancies, existing dead-end corridors less than 35 feet may remain. Newly constructed dead-end corridors shall comply with the prevailing code or NFPA 101, Life Safety Code, for new buildings. <i>Exceptions:</i> 1. Where existing dead-end corridors of greater length are permitted by NFPA 101, Life Safety Code. 2. The maximum length of an existing dead-end corridor shall be 50 feet in buildings equipped throughout with an automatic sprinkler system installed in accordance with the prevailing code.
27	Interior Finishes: Walls and Floor/ceiling assembly (1)	In buildings less than 3,500 sf/floor and less than four stories in height, an existing historic wall or floor/ceiling assembly documented in the Historic Report may remain provided that all vertical and horizontal penetrations are protected and the entire building is equipped with an automatic fire alarm and smoke or heat detection system or automatic sprinkler system in accordance with the prevailing code. <i>Exception:</i> Group A-2 and H occupancies and areas where open flames are used or commercial cooking occurs as defined by the fire code.
28	Transoms (1), (7)	In buildings with automatic sprinkler systems of Group R-1, R-2, or R-3 occupancy, existing transoms in corridors and other fire-resistance-rated walls may be maintained if fixed in the closed position. A sprinkler shall be installed on each side of the transom. <i>Exception:</i> In buildings without automatic sprinkler systems, existing transoms fixed in the closed position with fixed wired glass or other approved glazing installed on one side of the transom shall be accepted.
FIRE RESISTANCE		
29	Fire Resistance: Exterior Walls (4), (3), (7)	For buildings of Type I, II, or III construction greater than 50' from adjacent buildings, or located within 50' of buildings with the same construction classification, exterior walls shall not be required to be modified to meet the requirements for fire resistive wall construction. For all other conditions, the fire resistance requirement for existing exterior walls and existing opening protection is satisfied when an automatic sprinkler system designed for exposure protection is installed. The automatic sprinklers may be installed on the exterior under the roof line with at least one sprinkler head located over each opening requiring protection. Additional sprinkler heads shall also be distributed along combustible walls under the roof line that do not meet the fire-resistive requirement due to their relationship to property lines as required by regular code. Such sprinkler systems may be connected to an adequate domestic water supply on the street-main side of the building shut-off valve. A shut-off valve may be installed for the sprinkler system provided it is locked in an open position. <i>Exceptions:</i> 1. Requirements for fire-resistive wall construction to be met if the building or any immediately adjacent building is classified as a high hazard occupancy. 2. Approval by code official required for buildings undergoing a Change of Occupancy in all hazard categories.
30	Fire Resistance: Occupancy Separations (3)	1. Required occupancy separations of more than one hour may be reduced to one-hour fire-resistive construction with all openings protected by not less than ¾ hour fire-resistive assemblies of the self-closing or automatic-closing type when the building is provided with an automatic suppression system throughout the entire building in accordance with prevailing code. Doors equipped with automatic closing devices shall be of a type that will function upon activation of a device which responds to products of combustion rather than heat. 2. Required occupancy separations of one hour may be omitted when the building is provided with an approved automatic sprinkler system throughout.
31	Fire Resistance: 1-Hour Assemblies (6), (3), (8)	1. Required 1-hour fire-resistance construction need not be provided, regardless of construction or occupancy, where the wall and ceiling finish is wood or metal lath and plaster in good condition. 2. For other wall and ceiling finishes, 1-hour fire-resistive construction is not required when any of the following conditions are met: a. The building has an automatic sprinkler system; b. A SFM-approved, laboratory listed intumescent paint is applied on the room side of the corridor; or c. Walls or ceiling are filled with mineral fiber or glass fiber insulation.
32	Fire Resistance: Vertical Shafts (3), (7)	Vertical shafts need not be enclosed when such shafts are blocked at every floor level by the installation of not less than 2 full inches (51 mm) of solid wood or equivalent construction installed as to prevent the initial passage of smoke and flame. <i>Exception:</i> When approved by the code official, vertical shafts need not be enclosed when the building is protected with an automatic sprinkler system.

	ITEM/SOURCE	RECOMMENDED LANGUAGE
33	Glazing in Fire-Resistance Rated Systems (8)	Historic glazing materials in interior walls required to have a 1-hour fire-resistance rating may be permitted when provided with approved smoke seals and when the area affected is provided with an automatic sprinkler system.
MUSEUMS		
34	Museums and Special Occupancies (1), (4), (8)	Special occupancy purposes such as museums, libraries, exhibits, and similar uses less than 3,500 square feet (325.5 m2) per floor and under four stories in height shall be regulated as a Group B occupancy. Adequate means of egress shall be provided and shall, as applicable, include: <ol style="list-style-type: none"> 1. A means of maintaining doors in an open position to permit egress, 2. A limit on building occupancy to an occupant load permitted by the means of egress capacity, 3. A limit on occupancy of certain areas or floors, or 4. Supervision by a person knowledgeable in the emergency exiting procedures. For buildings with a single means of egress, occupancy shall be limited to the first and second floors, and the travel distance shall not exceed 75 feet.
LIGHT AND VENTILATION		
35	Light and Ventilation: Interior Rooms (3)	Existing provisions for light and ventilation which do not, in the opinion of the code official, constitute a safety hazard may remain providing that other residential and escape requirements are met.
36	Light and Ventilation (3)	Existing provisions for light and ventilation which do not, in the opinion of the code official, constitute a safety hazard may remain providing that other residential and escape requirements are met.
RESIDENTIAL OCCUPANCIES		
37	Residential Occupancies – High Rise (5)	When a qualified historic building greater than 60 feet in height is changed to include a Group R occupancy, the building or portion of the building shall comply with all of the following: <ol style="list-style-type: none"> 1. An automatic sprinkler system complying with the prevailing code shall be provided in all work areas; 2. A standpipe system complying with the prevailing code shall serve all work areas; 3. When an elevator serves a work area, at least one elevator shall be provided with Phase I and II emergency controls complying with the prevailing code. <i>Exception:</i> Approval by code official required for buildings undergoing a Change of Occupancy in all hazard categories.
ROOFS		
38	Roof Covering (1)	The existing type of roof covering shall be permitted to be replaced with the same materials. <i>Exception:</i> Replacement may be made using historic materials documented in the Historic Report.
STAIRS		
39	Stair Dimensions (1), (4), (7)	Riser, tread, and width dimensions of historic stairs may remain unless determined by the code officer to constitute a distinct hazard. When stairs are replaced without changes to floor plan or structural framing, the historic riser height, tread, and width dimensions are permitted to remain.
40	Stair Enclosure (1), (8)	In buildings of three stories or less, exit enclosure construction shall limit the spread of smoke by the use of tight-fitting doors and solid elements. Such elements are not required to have a fire-resistance rating. <i>Exception:</i> An enclosure for one existing stair in a building may be omitted where such stair: <ol style="list-style-type: none"> 1. Is documented as a historic stair, 2. Serves only one adjacent floor, and 3. Is limited to one level.
41	Stair – Exits (General) (7)	Existing stairs meeting the requirements of this chapter are permitted to be considered part of the means of egress unless determined by the code officer to constitute a distinct hazard.
42	Stairs – Exit Stairs, Stairways and Railings (7)	Existing stair geometries are permitted to remain as an exit stair if all other characteristics are acceptable and at least 50% of the overall exit capacity is provided through fully compliant stairs. <i>Exception:</i> Museums and Special Occupancies with less than 3,500 sf/floor, where any stair, regardless of its riser, tread, width dimensions, and railing height or spacing is permitted to serve as an exit stair provided that other code-mandated requirements are met.
43	Stairs – Handrails and Guardrails (7), (8)	Existing handrails and guards at all stairs may remain provided they are not structurally dangerous. The spacing between existing intermediate railings or openings in existing ornamental patterns shall be accepted. Missing elements or members may be replaced to match historic features.
44	Stair Winders (6), (7)	Existing winders that are in good structural repair are permitted to remain in occupancies with an occupant load less than 50 persons if there is a second means of egress or if the building is protected throughout with a fire alarm and detection system or automatic sprinkler system.
STRUCTURAL		
45	Structural Changes and Repairs (5), (7)	Structural changes and repairs may be made with historic materials that achieve the same performance level as the original construction. <i>Exception:</i> Approval by code official required for buildings undergoing a Change of Occupancy in all hazard categories.
46	Structural: Seismic (1)	Where compliance with the provisions of this code would damage historic character or contributing historic features identified in the Historic Report, alternative methods accepted to the code official may be used.
47	Structural: Live Load (1), (8)	Historic buildings shall comply with the applicable structural provisions for the work as classified in the prevailing code. <i>Exceptions:</i> <ol style="list-style-type: none"> 1. The code official may accept existing floors and approve operational controls that limit the live load on any such floor. 2. Analysis and test methods for evaluation of existing materials shall be permitted to use the methods specified in the code under which the building was constructed, the current Building Code, or other standards as approved by the authority having jurisdiction.
UNSAFE BUILDINGS		
48	Unsafe Buildings of Imminent Threat (1), (3), (8)	When a historic building or a component or portion of same is determined to be of imminent threat and in need of repair, strengthening, or replacement, no work shall be required except as necessary to correct identified unsafe conditions. When the building is declared an imminent threat to life and safety, the code official shall consult with the local or state historic preservation officer before any demolition is undertaken.