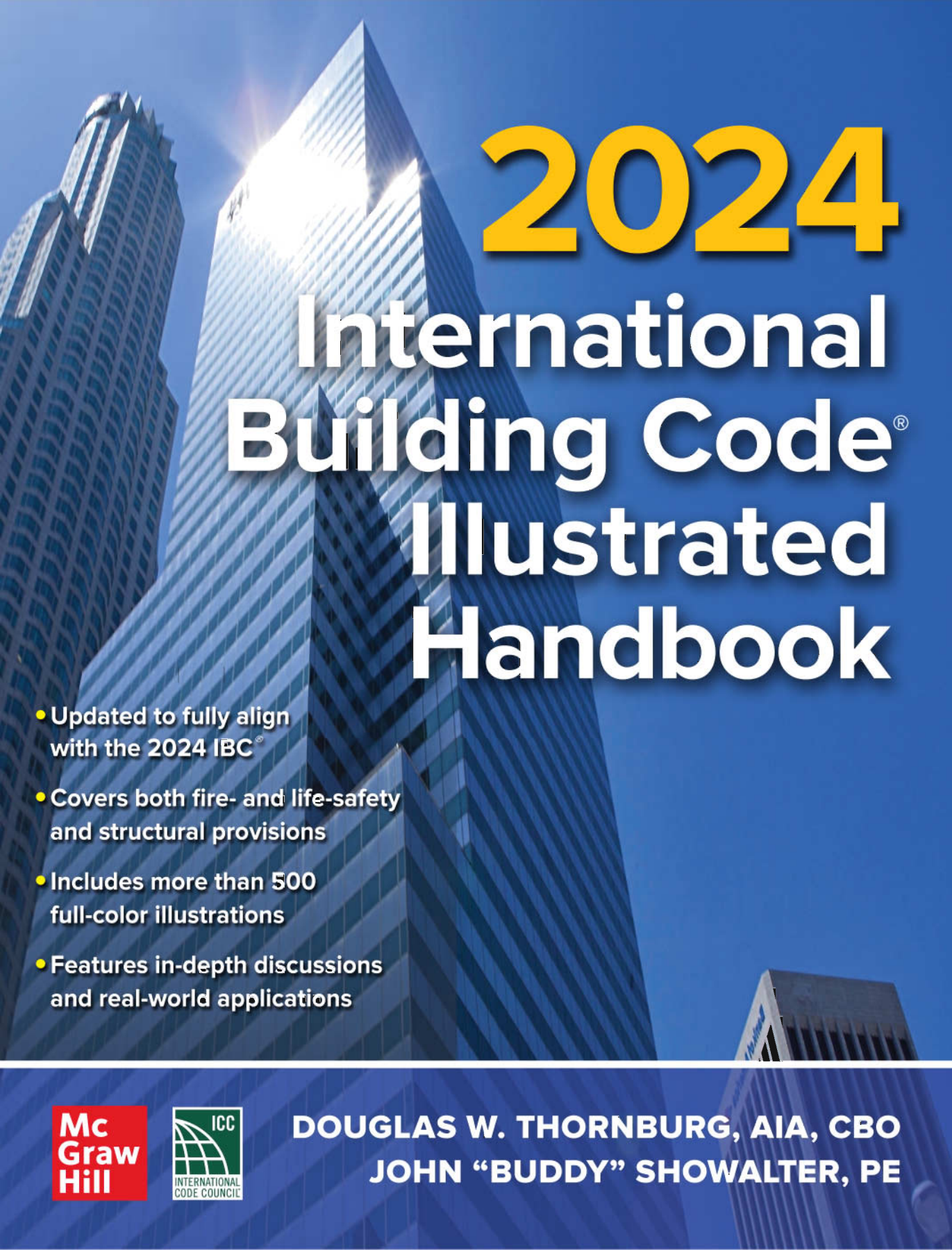




2024

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INTERNATIONAL
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2024 INTERNATIONAL BUILDING CODE® ILLUSTRATED HANDBOOK

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Foreword

How often have you heard these questions when discussing building codes: “What is the intent of this section?” or, “How do I apply this provision?” This publication offers the code user a resource that addresses much of the intent and application principles of the major provisions of the *2024 International Building Code*® (IBC®).

It is impossible for building codes and similar regulatory documents to contain enough information, both prescriptive and explanatory narrative, to remove all doubt as to the intent of the various provisions. If such a document were possible, it would be so voluminous that it would be virtually useless.

Because the IBC must be reasonably brief and concise in its provisions, the user must have knowledge of the intent and background of these provisions to apply them appropriately. The IBC places great reliance on the judgment of the building official and design professional for the specific application of its provisions. Where the designer and official have knowledge of the rationale behind the provisions, the design of the building and enforcement of the code will be based on informed judgment rather than arbitrariness or rote procedure.

The information that this handbook provides, coupled with the design professional’s and building official’s experience and education, will result in better use of the IBC and more uniformity in its application. As lengthy as this document may seem, it still cannot provide all of the answers to questions of code intent; that is why the background, training, and experience of the reader must also be called on to properly apply, interpret, and enforce the code provisions.

The preparation of a document of this nature requires consulting a large number of publications, organizations, and individuals. Even so, the intent of many code provisions is not completely documented. Sometimes the discussion is subjective; therefore, individuals may disagree with the conclusions presented. It is, however, important to note that the explanatory narratives are based on many decades of experience by the authors and the other contributors to the manuscript.



Preface

Internationally, code officials and design professionals recognize the need for a modern, up-to-date building code addressing the design and installation of building systems through requirements emphasizing performance. The *International Building Code*® (IBC®) meets this need by providing model code regulations that safeguard the public health and safety in all communities, large and small. The *2024 IBC Illustrated Handbook* is a valuable resource for those who design, plan, review, inspect, or construct buildings or other structures regulated by the 2024 IBC.

The IBC is one of a family of codes published by the International Code Council® (ICC®) that establishes comprehensive minimum regulations for building systems using prescriptive and performance-related provisions. It is founded on broad-based principles that use new materials and new building designs. Additionally, the IBC is compatible with the entire family of *International Codes*® published by the ICC.

There are three major subdivisions to the IBC:

1. The text of the IBC
2. The referenced standards listed in Chapter 35
3. The appendices

The first 34 chapters of the IBC contain both prescriptive and performance provisions that are to be applied. Chapter 35 contains those referenced standards that, although promulgated and published by separate organizations, are considered part of the IBC as applicable. The provisions of the appendices do not apply unless specifically included in the adoption ordinance of the jurisdiction enforcing the code.

The *2024 IBC Illustrated Handbook* is designed to present commentary only for those portions of the code for which commentary is helpful in furthering the understanding of the provision and its intent. This handbook uses many drawings and figures to help clarify the application and intent of many code provisions.

The handbook examines the intent and application of many provisions for both the non-structural- and structural-related aspects of the IBC. It addresses in detail many requirements that are considered as “fire- and life-safety” provisions of the code. Found in IBC Chapters 3 through 10, these provisions focus on the important considerations of occupancy and type of construction classification, allowable building size, fire and smoke protection features, fire protection systems, interior finishes, and means of egress.

The discussion of the structural provisions in this handbook is intended to help code users understand and properly apply the requirements in Chapters 16 through 23 of the 2024 IBC. Although useful to a broad range of individuals, the discussion of the structural provisions was written primarily so that building officials, plans reviewers, architects, and engineers can get a general understanding of the IBC’s structural requirements and gain some insight into their underlying basis and intent. To that end, the numerous figures, tables, and examples are intended to illustrate and help clarify the proper application of many structural provisions of the IBC.

Because the IBC adopts many national standards by reference rather than transcribing the structural provisions of the standards into the code itself, in some cases the discussion in this handbook pertains to the provisions found in a referenced standard such as ASCE 7 rather than

the IBC. The structural provisions addressed focus on the general design requirements related to structural load effects; special inspection and verification, structural testing, and structural observation; foundations and soils; and specific structural materials design requirements for concrete, masonry, steel, and wood.

Questions or comments concerning this handbook are encouraged. Please direct any correspondence to handbook@iccsafe.org.

Participation in ICC Code Development Process. Architects, engineers, designers, builders, and other professionals can freely participate in the ICC Code Development Process by submitting proposed code changes, collaborating with colleagues in developing code language and submitting changes, participating in giving testimony, and becoming ICC members to have voting opportunities in person or online at Committee Action Hearings. The Code Development Process is conducted via the ICC's state-of-the-art, cloud-based cdpACCESS system. Committee Action Hearings and Public Comment Hearings are broadcast live so anyone can follow the testimonies and actions taken. All building design and construction professionals are encouraged to participate in the ICC Code Development Process and have a say in the outcome of future editions of the *International Building Code* or any other of the ICC *International Codes*. Because architects, engineers, and other design and construction professionals apply the code to actual buildings and experience first-hand the effectiveness of code provisions, it is very critical for them to participate in the Code Development Process and improve the code each cycle.

Acknowledgments

The publication of this handbook is based on many decades of experience by the authors and the other contributors. Since its initial publication, the handbook has become a living document subject to changes and refinements as newer code regulations are released. This latest edition reflects extensive modifications based on the requirements found in the *2024 International Building Code*® (IBC®).

The initial handbook, on which the nonstructural portions of this document are based, was published in 1988 and based on the *Uniform Building Code*. It was authored by Vincent R. Bush. In developing the discussions of intent, Mr. Bush drew heavily on his 25 years of experience in building safety regulation. Mr. Bush, a structural engineer, was intimately involved in code development work for many years.

In addition to the expertise of Mr. Bush, major contributions were made by John F. Behrens. Mr. Behrens's qualifications were as impressive as the original author's. He had vast experience as a building official, code consultant, and seminar instructor. Mr. Behrens provided the original manuscript of the means of egress chapter and assisted in the preparation of many other chapters.

Revisions to the handbook occurred regularly over the years, with nonstructural content based on the provisions of the *International Building Code* authored by Doug Thornburg, AIA, CBO. Mr. Thornburg, a certified building official and registered architect, has over 44 years of experience in the building regulatory profession. Previously a building inspector, plans reviewer, building code administrator, seminar instructor, and code consultant, he currently develops and reviews technical publications, reference books, resource materials, and educational programs relating to the *International Codes*®. Mr. Thornburg was the recipient of the International Code Council Educator of the Year Award in 2008, recognizing his outstanding contributions in education and training.

The basis of the discussion on the structural provisions in the *2024 IBC Illustrated Handbook* is the *2000 IBC Handbook—Structural Provisions*, authored by S. K. Ghosh, Ph.D., and Robert Chittenden, SE. Dr. Ghosh initially authored Chapters 16 and 19, and Mr. Chittenden authored Chapters 17, 18, 20, 21, 22, and 23. John Henry, PE, former ICC principal staff engineer, then authored the commentary addressing IBC Chapters 16 through 23 for several editions. Mr. Henry was presented with the ICC's John Nosse Award for Technical Excellence in 2011, recognizing his outstanding contributions and technical expertise. William Bracken, PE, a registered civil and structural engineer with over 30 years of related experience, authored a portion of the commentary in the 2018 edition.

The structural provisions in relation to Chapters 16 through 23 in the 2021 edition were updated by Chris Kimball, SE. Mr. Kimball is a licensed structural engineer, civil engineer, and ICC master code professional. He is also certified by the ICC in many other disciplines, including building official and fire code official. Mr. Kimball earned a master's degree with an emphasis in structural engineering and currently serves as the Vice President of West Coast Code Consultants, Inc. (WC³), a third-party plan review and inspection company. He has performed plan reviews for thousands of complex projects throughout the United States, is an ICC-approved instructor, and has authored several publications, including the *2018 International Existing Building Code Handbook*. Mr. Kimball has provided code training classes to building official, design professional, and contractor organizations throughout the United States.

The structural provisions in relation to Chapters 16 through 23 in this edition have been updated by John “Buddy” Showalter, PE. Mr. Showalter is a licensed civil engineer and is a senior staff engineer with the International Code Council’s (ICC) product development group. He develops technical resources and provides education in support of the structural provisions of the *International Building Code* and *International Residential Code*. He is the project lead in the development of *Mass Timber Buildings and the IBC* and associated education programs, jointly developed by ICC and the American Wood Council (AWC). A graduate of Virginia Tech, Showalter has also been a member of the editorial board for *STRUCTURE* magazine for nearly 20 years. Before joining ICC, Showalter spent 26 years with AWC where he led its technology transfer program with oversight responsibility for publications, website, helpdesk, education, and other technical media. He has over 35 years of experience in the development and support of building codes and standards, authoring or co-authoring more than 70 publications and technical articles for industry-related trade journals.

Great appreciation is due a number of individuals who contributed their vast expertise and experience to the development of this publication. Special recognition goes to Sandra Hyde, PE, Managing Director of ICC Product Development; Jay Woodward, ICC Senior Staff Architect; and Kevin Scott, President of KH Scott and Associates, for their valued review and input.

The information and opinions expressed in this handbook are those of the present and past authors, as well as the many contributors, and do not necessarily represent the official position of the International Code Council. Additionally, the opinions may not represent the viewpoint of any enforcing agency. Opinions expressed in this handbook are only intended to be a resource in the application of the IBC, and the building official is not obligated to accept such opinions. The building official is the final authority in rendering interpretations of the code.

2024
INTERNATIONAL
BUILDING CODE®
ILLUSTRATED
HANDBOOK





CHAPTER

1

SCOPE AND ADMINISTRATION

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In addition to the code's scope, this chapter covers general subjects such as the purpose of the code, the duties and powers of the building official, performance provisions relating to alternative methods and materials of construction, applicability of the provisions, and creation of the code compliance agency. This chapter also contains requirements for the issuance of permits, subsequent inspections, and certificates of occupancy. The provisions in this chapter are of such a general nature as to apply to the entire *International Building Code*® (IBC®).

Section 101 *Scope and General Requirements*

101.2 Scope. The scope of the code as outlined in this section is that the IBC applies to virtually anything that is built or constructed. The definitions of “Building” and “Structure” in Chapter 2 are so inclusive that the code intends that any work of any kind that is accomplished on any building or structure comes within its scope. Thus, the code would apply to a major high-rise office building as well as to a retaining wall creating a significant elevation change on a building site. However, certain types of work are exempt from the permit process as indicated in the discussion of required permits in this chapter.

Whereas initially the IBC appears to address all construction-related activities, the design and construction of most detached one- and two-family dwellings and townhouses, as well as their accompanying accessory structures, are intended to be regulated under the *International Residential Code*® (IRC®). However, in order for such structures to fall under the authority of the IRC, two limiting factors have been established. First, each such building is limited to a maximum height of three stories above grade plane as established by the definition of “Story above grade plane” in Section 202. In broad terms, where a floor level is located predominantly above the adjoining exterior ground level, it would be considered in the total number of stories above grade plane for evaluation of its regulation by the IRC. It is quite possible that a residential unit with four floor levels will be regulated by the IRC, provided that the bottom floor level is established far enough below the exterior grade that it would not qualify as a story above grade plane, but rather as a basement. Additional occupiable floor levels may also be permitted under the allowances in the IRC for habitable attics and mezzanines. For further discussion on the determination of a story above grade plane as similarly regulated in the IBC, see the commentary on Section 202. Second, each dwelling unit of a two-family dwelling or townhouse must be provided with a separate means of egress. Although the definition of an IBC means of egress would require travel extending to the public way, for the purpose of this requirement, it is acceptable to provide individual and isolated egress only until reaching the exterior of the dwelling at grade level. Once reaching the exterior at grade, building occupants could conceivably share a stairway, sidewalk, or similar pathway to the public way. The IRC does not regulate egress beyond the structure itself; thus, any exit discharge conditions would only be applicable to IBC structures.

Townhouse design and construction is also regulated by the IRC. Section 202 defines a townhouse as a grouping of three or more townhouse units in the same structure. The townhouse units must each extend individually from the ground to the sky, with open space provided on at least two sides of each dwelling unit. The effect of such limitations maintains the concept of “multiple single-family dwellings.”

The requirement for open space on a minimum of two sides of each townhouse unit allows for interpretation regarding the degree of openness. Although not specific in language, the provision

intends that each townhouse be provided with a moderate degree of exterior wall, thus allowing for adequate fire department access to each individual unit. A townhouse condition occurs where the four established criteria are met. The presence of a lot line or property line between attached dwelling units, or the lack of such a line, has no bearing on its designation as a townhouse.

Structures such as garages, carports, and storage sheds are also regulated by the IRC where they are considered accessory to the residential buildings previously mentioned. Such accessory buildings are limited in height under the same limitations applied to dwellings, a maximum of three stories above grade plane. The maximum floor areas of dwellings and accessory structures constructed under the IRC are unlimited; however, it is probable that local zoning ordinances will provide some degree of regulation.

Even though the IRC may use the IBC as a reference for certain design procedures, the intent is to use only the IRC for the design and construction of one- and two-family dwellings, multiple townhouse units (townhouses), and their accessory structures. This does not preclude the use of the IBC by a design professional for the design of the types of residential buildings specified. However, unless specifically directed to the IBC by provisions of the IRC, it is not the intent of the IRC to utilize the IBC for provisions not specifically addressed. For example, the maximum allowable floor area of a residence based on the building's type of construction is not addressed in the IRC. Therefore, there is no limit to the floor area permitted in the dwelling unit. It would not be appropriate to use the IBC to limit the residence's floor area based on construction type.

101.2.1 Appendices. A number of subjects are addressed in Appendices A through P. The topics range from detailed information on the creation of a board of appeals to more general provisions for grading, excavation, and earthwork. Although the code clearly indicates that the appendices are not considered a part of the IBC unless they are specifically adopted by the jurisdiction, this does not mean they are of any less worth than those set forth in the body of the code. Although there are several reasons why a set of code requirements is positioned in the Appendix, the most common are that the provisions are limited to a small geographic location or are of interest to only a small number of jurisdictions.

Jurisdictions have the ability to adopt any or all of the appendices based on their own needs. However, just because an appendix has not been adopted does not lessen its value as a resource. In making decisions of interpretation of the code, as well as in evaluating alternate materials and methods, the provisions of an appendix may serve as a valuable tool in making an appropriate decision. Even in those cases where a specific appendix is not in force, the information it contains may help in administering the IBC.

101.3 Purpose. Various factors are regulated that contribute to the performance of a building in regard to the health, safety, and welfare of the public. The IBC identifies several of these major factors as those addressing structural strength, egress capabilities, sanitation and other environmental issues, fire- and life-safety concerns, energy conservation, fire/explosion hazards, and other dangerous conditions. In addition, the safety of fire fighters and emergency personnel responding to an emergency situation is an important consideration. The primary goal of the IBC is to address any and all hazards that are attributed to the presence and use of a jurisdiction's buildings and structures, and to safeguard the public from such hazards.

The purpose of the code is more inclusive than most people realize. A careful reading will note that in addition to providing for life safety and safeguarding property, the code also intends that its provisions consider the general welfare of the public. This latter item, *general welfare*, is not so often thought of as being part of the purpose of a building code. However, in the case of the IBC, safeguarding the public's general welfare is a part of its intent, which is accomplished, for example, by provisions that ameliorate the conditions found in substandard or dangerous buildings. Moreover, upon the adoption of a modern building code such as the IBC, the general level of building safety and quality is raised. This in turn contributes

to the public welfare by increasing the tax base and livability. Additionally, substandard conditions are reduced, and the subsequent reduction of unsanitary conditions contributes to safeguarding the public welfare. For example, the maintenance provisions of the *International Property Maintenance Code*® (IPMC®) and the continued enforcement of the IBC slow the development of substandard conditions. A rigorous enforcement of the IPMC will actually reduce the conditions that contribute to the deterioration of the existing building stock. Thus, public welfare is enhanced by the increased benefits that inure to the general public of the jurisdiction as a result of the code provisions.

The concept of “minimum” requirements is the established basis for the technical provisions set forth in the IBC. The requirements are intended to identify the appropriate level of regulation to achieve a balanced approach to the design and construction of buildings. On the one hand, it is critical that an appropriate degree of safety be established in order to protect the general public. Conversely, it is also important that the economic impact of the regulations be considered, as well as a building’s efficiency of use. It is this balance of concerns that provides for the necessary degree of public health, safety, and welfare within appropriate economic limits. The establishment of multiple occupancy classifications with varying requirements for each is a basic example of this philosophy.

101.4 Referenced codes. A number of other codes are promulgated by the International Code Council® (ICC®) in order to provide a full set of coordinated construction codes. Seven of those companion codes are identified in this section, as they are specifically referenced in one or more provisions of the IBC. The adoption of the IBC does not automatically include the full adoption of the referenced codes, but rather only those portions specifically referenced by the IBC.

For example, Section 903.3.5 requires that water supplies for automatic sprinkler systems be protected against backflow in accordance with the *International Plumbing Code*® (IPC®). As a result, when the IBC is adopted, so are the backflow provisions of the IPC for those buildings protected with an automatic sprinkler system. The extent of the reference is backflow protection; therefore, that is the only portion of the IPC that is applicable based on this reference. Broader references are also provided, such as many of the references to the *International Fire Code*® (IFC®). Section 307.2 requires that hazardous materials in any quantity conform to the requirements of the IFC. Although the entire IFC may not be adopted by the jurisdiction, the provisions applicable to hazardous materials are in force with the adoption of the IBC.

The *International Existing Building Code*® (IEBC®) is referenced in its entirety for any building undergoing a repair, alteration, addition, relocation, or change of occupancy.

Section 102 *Applicability*

102.1 General. Where there is a conflict between two or more provisions found in the code as they relate to differences of materials, methods of construction, or other requirements, the most restrictive provision will govern. Typically, the code will identify how the conflicting requirements should be applied. For example, the occupant load along with the appropriate factor from Section 1005.3.1 is used to calculate the total capacity required for egress stairways—often referred to as the *calculated* width. Section 1011.2 also addresses the minimum required width for a stairway based on the absolute width necessary for the use of a stairway under any condition, deemed to be the *component* width. When determining the proper minimum width required by the code, the more restrictive, or wider, stairway width would be used. See Application Example 102-1.

In addition, where a conflict occurs between a specific requirement and a general requirement, the more specific provision shall apply. Again, the IBC provisions typically clarify the appropriate requirement that is to be applied without the need to determine the appropriate general/specific relationship. As an example, Section 1011.5.2 limits the height of stair risers to

GIVEN: An occupant load of 130 assigned to each of two stairways in a nonsprinklered office building.

DETERMINE: The required minimum width of each stairway.

1. Based on Section 1005.3.1, the minimum calculated width would be:
 $0.3 \text{ inches/occupant} \times 130 \text{ occupants} = 39 \text{ inches}$
2. Based on Section 1011.2, the minimum required width would be 44 inches.

SOLUTION: Therefore, the more restrictive condition, 44 inches, would apply.

For SI: 1 inch = 25.4 mm.

CONFLICTING REQUIREMENTS

Application Example 102-1

7 inches (178 mm) as a general requirement for stairways. However, Section 1030.14.2.2 allows for a maximum riser height of 8 inches (203 mm) for stepped aisles serving assembly seating areas. Because the greater riser height is only permitted for a specific stair condition, rather than for all stairways in general, it is intended to apply where those special means of egress provisions established in Section 1030 are applicable.

Occasionally it is difficult, during the comparison of two different code provisions, to determine which is the general requirement and which is the specific requirement. In some cases, both requirements are specific, but one is more specific than the other. It is important that the intent of this section be applied in reviewing the proper application of the code. Where it can be determined that one provision is more specific in its scope than the other provision, the more specific requirement shall apply, regardless of whether it is more or less restrictive in application. The provisions of Chapter 4 provide multiple examples of the general/specific relationship. There are many special detailed requirements in Chapter 4 for various uses and occupancies that are intended to supersede general provisions found elsewhere in the code.

102.4 Referenced codes and standards. Differences between the code and the various standards it references are to be expected. Unlike the companion *International Codes*® where consistency between them can be provided, there is not necessarily a conscious effort to see that the standard and code publications are completely compatible with each other. In fact, such compatibility would be impossible to achieve due to a variety of factors. As a result, it is critical that the code indicates that its provisions are to be applied over those of a referenced standard where such differences exist. For example, the provisions of National Fire Protection Association (NFPA) 13R addressing sprinkler systems in residential occupancies allow for the omission of sprinklers at specified exterior locations, including decks and balconies. However, the provisions of IBC Section 903.3.1.2.1 mandate sprinkler protection for such areas where specific conditions exist. In this case, the provisions of the IBC for sprinkler protection would apply regardless of the allowances contained in NFPA 13R.

There are also times when the standard being referenced includes subject matter that falls within the scope of the IBC or the other *International Codes*. It is intended that the requirements of a referenced standard supplement the IBC provisions in those areas not already addressed by the code. In those areas where parallel or conflicting requirements occur, the IBC provisions are always to be applied. For example, IBC Section 415.9.3 mandates that “the construction and installation of dry cleaning plants shall be in accordance with the requirements of the IBC, the *International Mechanical Code*, the *International Plumbing Code*, and NFPA 32.” Although NFPA 32 addresses construction and installation criteria for dry cleaning plants, only those portions of the standard that are not addressed within the IBC, IMC, and IPC are applicable.

Section 103 *Code Compliance Agency*

This section recognizes the creation of a jurisdictional enforcement agency charged with implementing, administering, and enforcing the IBC. The term *building official*, as used in the IBC, represents the individual appointed by the jurisdiction to head the code compliance agency. Although many jurisdictions utilize the title *Building Official* to recognize the individual in charge of this agency, there are many other titles that are used. These include *Chief Building Inspector*, *Superintendent of Central Inspection*, *Director of Code Enforcement*, and various other designations. Regardless of the title selected for use by the individual jurisdiction, the IBC views all of these as equivalent to the term *building official*.

The building official, in turn, appoints personnel as necessary to carry out the duties and responsibilities of the code compliance agency. Such staff members (deputies), including inspectors, plan examiners, and other employees, are empowered by the building official to carry out those functions set forth by the jurisdiction. Where the IBC references the building official in any capacity, the code reference also includes any deputies who have been granted enforcement authority by the building official. Where an inspector or plan reviewer makes a decision of interpretation, they are assuming the role of building official in arriving at that decision. There is an expectation on behalf of the jurisdiction that such employees possess the knowledge and experience to take on this responsibility. The failure to grant appropriate authority will often result in both ineffective and inefficient results.

For those jurisdictions desiring guidelines within the text of the code for the selection of agency personnel, Appendix A addresses minimum employee qualifications for various positions. Experience and certification criteria for building officials, chief inspectors, inspectors, and plans examiners are set forth in this Appendix chapter.

Section 104 *Duties and Powers of Building Official*

104.2 Determination of compliance. The IBC is designed to regulate in both a prescriptive and performance manner. An extensive number of provisions have been intentionally established to allow for jurisdictional interpretation based on the specifics of the situation. This section establishes the building official's authority to render such interpretations of the IBC. In addition, the building official may adopt policies and procedures that will help clarify the application of the code. Although having no authority to provide variances or waivers to the code requirements, the building official is charged with interpreting and clarifying the provisions found in the IBC, provided that such decisions are in conformance with the intent and purpose of the code.

The authority to interpret the intended application of the IBC is a powerful tool available to the building official. With such authority comes a great degree of responsibility. Such interpretations must be consistent with the intent and purpose of the code. It is therefore necessary that all reasonable efforts be made to determine the code's intent in order to develop an appropriate interpretation. Various sources should be consulted to provide a broad background from which to make a decision. These could include discussions with peers, as well as information found in various educational texts and technical guides. However, it must be stressed that the ultimate responsibility for determining the appropriateness of an interpretation lies with the jurisdictional building official, and all opinions from others, both verbal and written, are just that, opinions. The building official must never relinquish their authority to others in the administration of these very important interpretive powers.

104.2.1 Listed compliance. The IBC allows for the adoption of new technologies in materials and building construction that currently are not covered by the code, thereby providing

additional performance options. The IBC thus encourages state-of-the-art concepts in design, construction, and materials as long as they meet the performance intended by the code. Where a product listing is appropriate, then the fact that the product is listed and installed in accordance with the listing specifications and the manufacturer's instructions becomes the approval of the product.

104.2.2 Technical assistance. Although not specifically addressed, the informal utilization of technical assistance by the building official has historically been a method for determining code compliance. In a more formal sense, this assistance in determining compliance can be provided in the form of a technical report and opinion. The allowance for a technical report gives jurisdictions the benefit of expert opinions provided by knowledgeable persons on the item under consideration. Technical reports are required to be prepared by an individual, firm, or corporation acceptable to the jurisdiction, and must be provided without charge to the jurisdiction.

104.2.3 Alternative materials, design, and methods of construction and equipment. This section of the IBC may be one of the most important. It allows for the adoption of new technologies in materials and building construction that currently are not covered by the code. Furthermore, it gives the code even more of a performance character. The IBC thus encourages state-of-the-art concepts in design, construction, and materials as long as they meet the performance intended by the code. When evaluating the alternative methods under consideration, the building official must review for equivalency in quality, strength, effectiveness, fire safety, durability, and general safety. It is expected that all alternatives, once presented to the building official for review and approval, be thoroughly evaluated by the code compliance agency for compliance with this section. If such compliance can be established, the alternatives are deemed to be acceptable. An allowance is made for the use of the ICC Performance Code (ICCPC) provided it does not deal with a structural material or design. This recognition could apply where a single material, element, or system cannot conform to the prescriptive requirements that are otherwise met for the project.

The provisions of this section, similar to those of Sections 104.2 and 104.2.4, reference the *intent* of the code. It is mandated that the building official, when evaluating a proposed alternative to the code, only approve its use where it can be determined that it complies with the intent of the specific code requirements. Thus, it is the responsibility of the building official to utilize those resources necessary to understand the intended result of the code provisions. Only then can the code be properly applied and enforced.

Similar to the approach taken where modifications are requested under the criteria of Section 104.2.4, the request for acceptance under this section should be made in writing to the building official. At a minimum, the submittal should include: (1) the specific code section and requirement, (2) an analysis of the perceived intent of the provision under review, (3) the special reasons as to why strict compliance with the code provision is not possible, (4) the proposed alternative, (5) an explanation of how the alternative meets or exceeds the intended level of compliance, and (6) a request for acceptance of the alternative material, design, or method of construction. Where approval of the request is not granted, it is mandated that the building official state in writing the reasons for denial. Such an action provides for a clear understanding as to why the alternative was not accepted, thereby providing guidance for future submittals.

Evaluation reports, can address and delineate a review of the appropriate testing procedures to support the alternative as code compliant. The use of an evaluation report may be helpful in reducing additional testing or documentation that is necessary to indicate compliance. It is important that the building official evaluate not only the information contained within the report, but also the technical expertise of the individual or firm issuing the report. It must be noted, however, that an evaluation report is simply a resource to the building official to assist in the decision-making process. The report itself does not grant approval, as acceptance is still under the sole authority of the building official.

One of the most commonly utilized evaluation reports is the ICC Evaluation Service (ICC-ES) Evaluation Report. ICC-ES is a nonprofit, limited liability company that does technical evaluations of building products, components, methods, and materials. If it is found that the subject of an evaluation complies with code requirements, then ICC-ES publishes a report to that effect and makes the report available to the public. However, ICC-ES Evaluation Reports, like all other evaluation reports, are only advisory. The authority having jurisdiction is always the final decision maker with respect to acceptance of the product, material, or method in question.

104.2.4 Modifications. The provisions of this section allow the building official to grant modifications to the requirements of the code under certain specified circumstances. The building official may modify requirements if it is determined that strict application of the code is impractical and, furthermore, that the modification is in conformity with the intent and purpose of the code. Without this provision in the IBC, the building official has very little discretionary enforcement authority and, therefore, would have to enforce the specific wording in the code, no matter how unreasonable the application would be.

The code does not intend to allow the building official to issue a variance to the provisions of the code to permit, for example, the use of only a single exit where two are required. This is clearly not in conformity with the intent and purpose of the code, no matter how difficult it may be to meet the requirements. In fact, the code is very specific that any modification cannot reduce health, accessibility, structural, and fire- and life-safety requirements.

Where the building official grants a modification under this section, the details of such an action shall be recorded. This document must then be entered into the files of the code compliance agency. By providing a written record of the action taken and maintaining a copy of that action in the agency files, the building official always has access to the decision-making process and final determination of his or her action should there be a need to review the decision.

Although it is expected that a permanent record be available for future reference when a modification is accepted, there is perhaps an even more important reason for the recording and filing of details of the approving action. The willingness to document and archive the modification action indicates the confidence of the building official in the decision that was made. A reluctance to maintain a record of the action taken typically indicates a lack of commitment to the action taken.

104.4 Right of entry. This section has been compatible with Supreme Court decisions since the 1960s regarding acts of inspection personnel seeking entry into buildings for the purpose of making inspections. Under present case law, an inspection may not be made of a property, whether it be a private residence or a business establishment, without first having secured permission from the owner or person in charge of the premises. If entry is refused by the person having control of the property, the building official must obtain an inspection warrant from a court having jurisdiction in order to secure entry. The important feature of the law regarding right of entry is that entry must be made only by permission of the person having control of the property. Lacking this permission, entry may be gained only through the use of an inspection warrant.

If entry is again refused after an inspection warrant has been obtained, the jurisdiction has recourse through the courts to remedy this situation. One avenue is to obtain a civil injunction in which the court directs the person having control of the property to allow inspection. Alternatively, the jurisdiction can initiate proceedings in criminal court for punishment of the person having control of the property. It cannot be repeated too strongly that criminal court proceedings should never be initiated against an owner or other person having control of the property if an inspection warrant has not been obtained. Because the consequences of not following proper procedures can be so devastating to a jurisdiction if a suit is brought against it, the jurisdiction's legal officer should always be consulted in these matters.

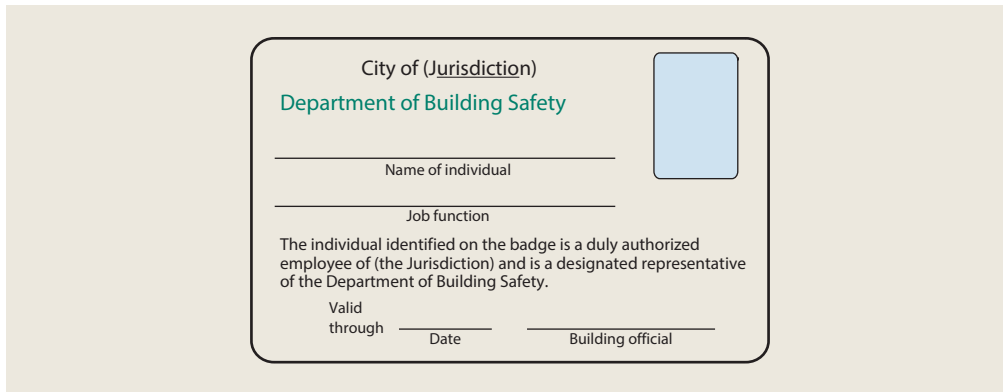


Figure 104-1 **Personnel identification badge.**

104.5 Identification. For the benefit of all individuals involved, inspection personnel of the code compliance agency are mandated to carry proper identification. The display of an identification card or badge, an example of which is shown in Figure 104-1, signifies the function and authority of the individual performing the inspection.

104.8 Liability. It is the intent of the IBC that the building official not become personally liable for any damage that occurs to persons or property as a result of the building official's acts so long as they act in good faith and without malice or fraud. This protection is also extended to any member of the Board of Appeals, as well as any jurisdictional employee charged with enforcement of the IBC. Nevertheless, legal action is occasionally undertaken in an effort to hold civil officers personally liable for their acts. This section requires that the jurisdiction defend the building official or other protected party if a suit is brought against them. Furthermore, the code requires any judgment resulting from a suit to be assumed by the jurisdiction.

Case law regarding tort liability of building officials is constantly in a state of flux, and past doctrines may not now be applicable. Therefore, the legal officer of the jurisdiction should always be consulted when there is any question about liability.

Section 105 *Permits*

This section covers those requirements related to the activities of the code compliance agency with respect to the issuance of permits. The issuance of permits, plan review, and inspection of construction for which permits have been issued constitute the bulk of the agency's duties. It is for this reason that the code goes into detail regarding the permit-issuance process. Additionally, the code provides detailed requirements for the inspection process in order to help ensure that the construction for which the inspections are made complies with the code in all respects.

105.1 Required. Prior to obtaining a permit, the owner of the property under consideration, or the owner's authorized agent, must apply to the building official for any necessary permits that are required by the jurisdiction. One or more permits may be required to cover the various types of work being accomplished. In addition to building permits that address new construction, alterations, additions, repairs, moving of structures, demolition, or change in occupancy, trade permits are required to erect, install, enlarge, alter, repair, remove, convert, or replace any

electrical, gas, mechanical, or plumbing systems. It is evident that almost any work, other than cosmetic changes, must be done under the authority of a permit.

Typically, a permit is required each time a distinct activity occurs that is regulated under the code. However, certain alterations to previously approved systems can be performed under an annual permit authorized by the building official. Electrical, gas, mechanical, or plumbing installations are eligible for such consideration when one or more qualified trade persons are employed by the person, firm, or corporation who owns or operates the building, structure, or premises where the work is to take place. In addition, the qualified individuals must regularly be present at the building or site.

105.2 Work exempt from permit. It would seem that the IBC should require permits for any type of work that is covered by the scope of the code. However, this section provides limited applications for exempted work. This section not only exempts certain types of building construction from permits, but also addresses electrical, gas, mechanical, and plumbing work that is of such a minor nature that permits are not necessary.

It is further the intent of the IBC that even though work may be exempted from a permit, such work done on a building or structure must still comply with the provisions of the code. As indicated in Section 101.2, the scope of the IBC is virtually all-inclusive. This may seem to be a superfluous requirement where a permit is not required. However, this type of provision is necessary to provide that the owner, as well as any design professional or contractor involved, be responsible for the proper and safe construction of all work being done.

A common example of exempted work is a small, one-story detached accessory structure such as a storage shed. Although the code does not require a permit for an accessory building not exceeding 120 square feet (11 m²) in floor area, all provisions in the code related to a Group U occupancy must still be followed regardless of size.

105.3 Application for permit. In this section, the IBC directs that a permit must be applied for, and describes the information required on the permit application. The permit-issuance process, as envisioned by the IBC, is intended to provide records within the code compliance agency of all construction activities that take place within the jurisdiction and to provide orderly controls of the construction process. Thus, the application for permit is intended to describe in detail the work to be done. In this section, the building official is directed to review the application for permit. This review is not a discretionary procedure, but is mandated by the code.

The code also charges the building official with the issuance of the permit when it has been determined that the information filed with the application shows compliance with the IBC and other laws and ordinances applicable to the building at its location in the jurisdiction. The building official may not withhold the issuance of a permit if these conditions are met. As an example, the building official would be in violation in withholding the issuance of a building permit for a swimming pool because an adjacent cabana was previously constructed without a permit.

105.4 Validity of permit. The code intends that the issuance of a permit should not be construed as permitting a violation of the code or any other law or ordinance applicable to the building. In fact, the IBC authorizes the building official to require corrections if there were errors in the approved plans or permit application at the time the permit was issued. The building official is further authorized to require corrections of the actual construction if it is in violation of the code, although in accordance with the plans. Moreover, the building official is further authorized to invalidate the permit if it is found that the permit was issued in error or in violation of any regulation or provision of the code.

Although it may be poor public relations to invalidate a permit or to require corrections of the plans after they have been approved, it is clearly the intent of the code that the approval of plans or the issuance of a permit may not be done in violation of the code or of other pertinent laws or ordinances. As the old saying goes, “Two wrongs do not make a right.”

105.5 Expiration. The IBC anticipates that once a permit has been issued, construction will soon follow and proceed expeditiously until completion. However, this ideal procedure is not always the case and, therefore, the code makes provisions for those cases where work has not started, or alternatively where the work, after being started, has been suspended for a period of time. In these cases, the IBC allows a period of 180 days to transpire before the permit becomes void. The code then requires that a new permit be obtained. It is assumed by the code that the code compliance agency will have expended some effort in follow-up inspections of the work, etc., and, therefore, the original permit fee may be retained in order to compensate the agency for the work. The allowance for full or partial refunds should be addressed by policy under the authorization granted by Section 109.6. The building official has the authority to grant one or more extensions of time, provided the permit holder can demonstrate a justifiable cause as to why the permit should not be invalidated. The time period for such extensions cannot exceed 180 days; however, additional extensions may be granted if approved by the building official.

There are several reasons why it is important to establish a limitation on the validity of a permit, such as purging the agency files of inactive permits. Additionally, it keeps the project on track with the code edition in effect at the time of permit issuance.

Section 107 *Construction Documents*

Plans, specifications, and other construction documents, along with other applicable data, must be filed with the permit application. Such submittal documents are intended to graphically depict the construction work to be done. The IBC sets forth the necessary information that must be provided to the building official at the time of plans submittal, as well as procedures for deferred submittals.

107.1 General. In this section, the IBC directs that at the time of application for a permit, construction documents and other essential data on the project be submitted. The code requires that plans, engineering calculations, and any other information necessary to describe the work to be done be filed along with the application for a permit. Where geotechnical investigations are required, a written report shall be submitted at the time of permit application. A statement of special inspections that may be required by Section 1704.2.3 is also to be submitted with the application for a permit. Based on the statutes of the jurisdiction, the plans, specifications, and other documents may need to be prepared by a registered design professional. Under special circumstances, the building official may also require that the submittal documents be prepared by a registered design professional even when not mandated by jurisdictional statute. The building official is permitted to waive the requirement for the filing of plans and other data, where not required by statute to be prepared by a registered design professional, provided the building official ensures that the work for which the permit is applied is of such a nature that plans or any other data are not necessary in order to indicate and obtain compliance with the code.

107.3 Examination of documents. In this section, the building official is directed to review the plans, specifications, and other submittal documents filed with the permit. The building official is not at liberty to check only a portion of the plans. On this basis, the structural drawings, as well as the engineering calculations, must be checked in order for the building official to provide a full examination.

107.3.4 Design professional in responsible charge. The building official has the authority to require the designation of a design professional to act in responsible charge of the work being performed. The function of such an individual is to review and coordinate submittal documents prepared by others and, if necessary, coordinate any deferred or phased submittal items. In some cases, the design of portions of the building has been completed and may be dependent on the manufacturer of proposed prefabricated elements, such as for truss drawings. Therefore, the code specifically allows deferring the submittal of portions of plans and specifications.

Section 108 *Temporary Structures, Equipment, and Systems*

This section authorizes the issuance of permits for the erection of temporary buildings and structures such as those erected at construction sites. The regulation of temporary viewing stands and other miscellaneous, temporary structures would also fall under this section. Reference is made to Section 3103 for the special requirements applicable to temporary buildings. For applying the applicable code provisions, “temporary” is considered as being erected for a period of less than 180 days. The *International Fire Code* (IFC) also has a significant number of provisions applicable to such structures. Additionally, the IBC identifies key criteria that must be applied to temporary structures, including conformity with structural strength, fire safety, means of egress, accessibility, light, ventilation, and sanitary requirements. Permits are typically required, as are construction documents. The scope of Section 3103 includes special event structures, tents, umbrella structures, and other membrane structures.

Section 109 *Fees*

Permits required by the jurisdiction are not valid until the appropriate fees have been paid. The IBC provides for each individual jurisdiction to establish its own schedules for permit fees. The fees collected by the code compliance agency are typically set at a level to adequately cover the cost to the agency for services rendered.

109.3 Permit valuations. The code uses the concept of valuation to establish the permit fee. This concept is based on the proposition that the valuation of a project is related to the amount of work to be expended in the various aspects of administering the permit. Also, there should be some excess in the permit fee to cover agency overhead. Essentially, the valuation is considered as the cost of replacing the building. The valuation also includes any electrical, plumbing, and mechanical work, even though separate permits may be required for the mechanical, plumbing, and electrical trades.

To provide some uniformity in the determination of valuation so that there is a consistent base for the assignment of fees, the IBC directs the building official to determine the value of the building. To assist in obtaining uniformity, “Building Valuation Data (BVD)” can be accessed on ICC’s website. Thus, building officials may utilize a common base in their determination of the value of buildings. However, ICC strongly recommends that all jurisdictions and other interested parties actively evaluate and assess the impact of the BVD table before utilizing it in their current code enforcement activities. As an option, any other appropriate method may also be used by the jurisdiction as the basis for determining the proper valuation of the work.

109.4 Work commencing before permit issuance. When work requiring a permit is started without such a permit, the IBC allows the building official to assess an additional fee above and beyond the required permit fees. This fee is intended to compensate the code compliance agency for any additional time and effort necessary in evaluating the work initiated without a permit. It may often be necessary for the building official to cause an investigation to be made of the work already done. The intent of the investigation is to determine to what extent the work completed complies with the code, and to describe with as much detail as possible the work that has been completed.

109.6 Refunds. This section authorizes the building official to establish a policy for partial or complete refunds of fees paid to the department. Although not specified in the code, there are a variety of reasons why some level of a fee refund would be appropriate. One instance

would be where the permit fee is collected in error. Another reason for authorizing a refund of the fees paid would be that circumstances beyond the control of the applicant caused delays and the eventual expiration of the building permit. Typically, the building official will withhold from the refund any monies expended by the agency for related administrative activities that have taken place. It should be noted that the building official, when approving a fee refund, is authorizing the disbursement of public funds. Therefore, the building official must be sure that there is good cause for the refund to the applicant.

Section 110 *Inspections*

The inspection function is arguably the most critical aspect of code compliance agency operations. An important concept views that, as with the issuance of permits, inspections that presume to give authority to violations of the code are invalid. In general, the IBC charges the permit applicant with the responsibility of ensuring that the work to be inspected remain accessible and exposed until it is approved. Any expense incurred in the process of providing for an accessible and exposed inspection, such as the removal of gypsum board or insulation, is not to be borne by the building official or jurisdiction. Therefore, it is critical that work should not proceed beyond the point where an inspection is required.

110.3 Required inspections. The code mandates a variety of inspections during the progress of construction. Several such inspections are common to almost all types of buildings, including:

- Footing and foundation inspection
- Concrete slab and/or under-floor inspection
- Frame inspection
- Gypsum panel products and/or lath inspection
- Energy efficiency inspection
- Final inspection

These inspections are critical in ensuring the construction is compliant with the provisions of the code as in many cases such verification would be difficult to achieve.

Fire-resistance-rated and/or smoke-resistant elements are often constructed with the inspection of penetration and joint protectives necessary. Where balconies and other elevated surfaces are considered as weather-exposed and the structural framing is protected by an impervious moisture barrier, elements of the moisture barrier system must be inspected. The inspection of wood cover providing fire-resistance ratings in Type IV-A, IV-B, and IV-C buildings is also mandated. Special inspections as addressed in Section 1705 require special expertise to ensure compliance. Another type of inspection is required in flood hazard areas. After the lowest floor elevation or the elevation of dry floodproofing, where applicable, is established, but prior to additional vertical construction, the required elevation certification shall be submitted to the building official.

The code also gives the building official the authority to require and make other inspections where necessary to determine compliance with the code and other laws and regulations enforced by the code compliance agency. There are times where unique concerns of the jurisdiction make it necessary to provide some degree of inspection. Where such review is necessary, the inspections should be handled in a manner consistent with those specifically identified in the IBC.

In each case for the required inspections identified in Section 110.3, the IBC is very specific as to how far the construction must have progressed prior to a request for an inspection. If it

is necessary to make a re-inspection because work has not progressed to the point where it is ready for inspection, the building official may charge an additional fee under the general provisions of Section 109. A re-inspection fee is not specifically mandated, however, and normally would not be assessed unless the person doing the work continually calls for inspections before the work is ready for inspection. Such actions would typically cause increased costs to the jurisdiction not covered by the original building permit.

110.5 Inspection requests. In general, the IBC charges the individual holding the building permit with notifying the code compliance agency when it is time to make an inspection. The permit holder may also authorize one or more agents for this responsibility. The code places a duty upon the permit holder or their authorized agent to have the work to be inspected accessible and exposed, so it can be evaluated as to code compliance.

110.6 Approval required. The code intends that no work shall be done beyond the point where an inspection is required until the work requiring inspection has been approved. Moreover, it is intended that work requiring inspection not be covered until it has been inspected and approved.

Section 111 *Certificate of Occupancy*

The tool that the building official utilizes to control the uses and occupancies of the various buildings and structures within the jurisdiction is the certificate of occupancy. The IBC makes it unlawful to use or occupy a building or structure unless a certificate of occupancy has been issued for that use. Furthermore, the code imposes the duty of issuing a certificate of occupancy upon the building official when they are satisfied that the building, or portion thereof, complies with the code for the intended use and occupancy.

Prior to use or occupancy of the building, the building official shall perform a final inspection as addressed in Section 110.3.12. If no violations of the code and other laws enforced by the code compliance agency are found, the building official is required to issue a certificate of occupancy. Figure 111-1 illustrates the information that must be provided on the certificate of occupancy.

Where a portion of a building is intended to be occupied prior to occupancy of the entire structure, the building official may issue a temporary certificate of occupancy. This situation would occur where partial occupancy is requested prior to completion of all work authorized by the building permit. Prior to issuance of a temporary certificate of occupancy, it is critical that the building official ascertain that those portions to be occupied provide the minimum levels of safety required by the code. In addition, the building official shall establish a definitive length of time for the temporary certificate of occupancy to be valid.

In essence, the certificate of occupancy certifies that the described building, or portion thereof, complies with the requirements of the code for the intended use and occupancy, except as provided for existing buildings undergoing a change of occupancy as regulated by the *International Existing Building Code* (IEBC). However, any certificate of occupancy may be suspended or revoked by the building official under one of three conditions: (1) where the certificate is issued in error, (2) where incorrect information is supplied to the building official, or (3) where it is determined that the building or a portion of the building is in violation of the code or any other ordinance or regulation of the jurisdiction. The most common reason for suspending or revoking a certificate of occupancy is that the building is being used for a purpose other than that intended when approval for occupancy was granted. When a permit is issued, plans reviewed, inspections made, and a certificate of occupancy given, there is an expectation that the building will be used for specific activities. As such, the hazards associated with such

Certificate of Occupancy
(Address of Structure)

This (applicable portion of structure) has been inspected for compliance
with the applicable code requirements of (jurisdiction) and is hereby issued a
Certificate of Occupancy

Permit number _____ Special conditions _____

Applicable edition of code _____

Occupancy classification(s) _____

Type of construction _____

Design occupant load _____ Building Official _____

Sprinkler system required _____

Name and address of owner or owner's authorized agent _____

Figure 111-1 **Certificate of occupancy.**

activities can be addressed. However, where an unanticipated use occurs, there is the potential that the necessary safeguards are not in place to address the related hazards. An unauthorized use can be intentional or unintentional; however, it is no less a concern until the use is discontinued or the necessary remedies are in place.

A key distinction in the application of the IBC concerns the terms “use” and “occupancy.” Most buildings have multiple uses, but often contain only a single occupancy. For example, an office building may have business areas, small storage areas, and small assembly areas, as well as support areas such as restrooms and mechanical equipment rooms. Although multiple uses occur in the building, it only contains a single occupancy, Group B. It is anticipated that all of the hazards that are anticipated as part of the building’s function can be effectively addressed through classification as a single occupancy group.

The definition’s reference to a change in purpose or level of activity is not intended to address minor changes in use that are typical when new ownership or tenancy occurs. Rather, the need for a new certificate of occupancy only occurs where change results in an increase in hazard level. As an example, where a Group B business office building undergoes a change of use to a Group B ambulatory care facility, additional fire- and life-safety safeguards are necessary in order to address the increased hazard due to the possible presence of health-care recipients who will be temporarily incapable of self-preservation. Although both types of facilities are classified as Group B occupancies, there is a distinct difference in their uses, and, as such, a new certificate of occupancy must be issued to address the change. Conversely, the provisions are not intended to require a new certificate of occupancy where the change in purpose or activity creates little, if any, change in hazard level. For example, a change from a Group M grocery store to a Group M electronics store would not require issuance of a new certificate of occupancy. In an evaluation of whether a change of occupancy occurs, the relationship of the new use to that of the previous use must undergo an evaluation conducted in accordance with the definition of “change of occupancy” in Chapter 2.

Section 112 *Service Utilities*

The building official is authorized to control the connection release for any service utility where the connection occurs to a building or system regulated by the IBC. Such authority also includes the temporary connection of the service utility. Perhaps even more important, the building official is also granted authority for the disconnection of service utilities where it has been determined that an immediate hazard to life or property exists. As in all administrative functions, it is important that due process be followed.

Section 113 *Means of Appeals*

The IBC intends that the board of appeals have the authority to hear and decide appeals of orders and decisions of the building official relative to the application and interpretations of the code. However, the code specifically denies the authority of the board relative to waivers of code requirements. Based on the qualification level set forth by the code for board membership, it can be assumed that the board is intended as fundamentally a technical body. Any broader authority may place the board outside of its area of expertise, such as addressing internal administrative issues of the agency. It should be noted that the board's role is to hear and decide on appeals of decisions made by the building official. Until the building official makes their determination, the issue is not subject to board review.

The importance of a board of appeals should not be taken lightly. Its role is equivalent to that of the building official when it comes to technical questions placed before it, thus the need for highly qualified board members. The board is not merely advisory in its actions, but rather is granted the authority to overturn the decisions of the building official where the determination is within the scope as described by the code. An example would be an appeal requesting the use of an alternative method of construction previously denied by the building official. The alternative method would be permitted if found by the board to be equivalent to or better than that set forth in the code. Where the board of appeals is desired to take on a more expansive role, such as code adoption review or contractor licensing oversight, those duties should be specifically granted by the jurisdiction. More detailed information on the qualifications and duties of a board of appeals is found in IBC Appendix B.

Section 114 *Violations*

The provisions of this section establish that violations of the code are considered unlawful and such violations shall be abated. Where necessary, a notice of violation may be served by the building official to the individual responsible for the work that is in violation of the code. Further action may be taken where there is a lack of compliance with the notice. The jurisdiction shall establish penalties based on the various specified violations.

Section 115 *Stop Work Order*

The stop work order is a tool authorized by the IBC to enable the building official to demand that work on a building or structure be temporarily suspended. Intended to be utilized only under rare circumstances, this order may be issued where the work being performed is dangerous, unsafe, or significantly contrary to the provisions of the code. A stop work order is often a building official's final method in obtaining compliance on issues of extreme importance. All other reasonable avenues should be considered prior to the issuance of such an order.

The stop work order shall be a written document indicating the reason or reasons for the work to be suspended. It shall also identify those conditions where compliance is necessary before the cited work is allowed to resume. All work addressed by the order shall immediately cease upon issuance. It is important that the stop work order be presented to the owner of the subject property, the agent of the owner, or the individual doing the work. Only after all issues have been satisfied may work continue. Because of the potential consequences involved with *shutting down* a construction project, it is critical that the appropriate procedures be followed. Although a stop work order can be issued at any time during the construction process, the most common application of the provision is where work has commenced before or without the issuance of a building permit. The order is given to notify those affected parties that all work be stopped until a valid permit is obtained. An example of a stop work order is shown in Figure 115-1.

STOP WORK

**DEPARTMENT OF BUILDING SAFETY
NOTICE**

This building has been inspected and

- ☐ Footing/foundation
- ☐ Concrete slab/underfloor
- ☐ Framing
- ☐ Lath/gypsum board
- ☐ Energy efficiency
- ☐ Rough electrical
- ☐ Rough gas
- ☐ Rough plumbing
- ☐ Rough mechanical
- ☐ Final inspection

IS NOT ACCEPTABLE

Please call _____
before any further work is done.

Date Inspector

Do not remove this notice.

DETACH and bring this portion of card with you.

LOCATION; _____

Date _____

Building Official

Phone

Figure 115-1 **Stop work order.**

Section 116 *Unsafe Structures and Equipment*

The provisions of this section are intended to define what constitutes an unsafe building and unsafe use of a building. Unsafe buildings and structures are considered public nuisances and require repair or abatement. The abatement procedures are indicated in this section, including the creation of a report on the nature of the unsafe condition. Written notice shall be provided and the method of service of such notice is specified in Section 116.4. Where restoration or repair of the building is desired, the provisions of the IEBC for existing buildings are appropriate.

KEY POINTS

- The IBC provides minimum standards to safeguard the health, safety, and welfare of the public.
- Rendering interpretations of specific code provisions is the responsibility of the building official, to be based on the purpose and intent of the code.
- Modifications to specific IBC provisions may be acceptable where strict application of the code is impractical.
- Alternative designs, materials, and methods of construction to those detailed in the code are to be evaluated by the building official based on an equivalency to the prescribed regulations.
- Tests may be mandated by the building official in order to verify compliance with the code.
- The issuance of permits, plan review, and inspection of construction for which permits have been issued constitutes the bulk of the duties of the typical code compliance agency.
- The code intends that the issuance of a permit should not be construed as allowing a violation of the code or any other local ordinance applicable to the building.
- Submittal documents must be appropriately submitted to the building official for review, and approved prior to receiving a building permit.
- The building official has the authority to require the designation of a registered design professional to review and coordinate submittal documents prepared by others.
- A certificate of occupancy, granted by the building official, indicates that the structure is lawfully permitted to be occupied.
- The board of appeals provides a mechanism for individuals to challenge the interpretation of the building official on technical issues in the IBC.