Fire Prevention Through the Codes Process

LEARNING OBJECTIVES

Upon completion of this chapter, you should be able to:

•    Describe the origin of the model code system in the United States.

•    List and explain the major model code organizations and describe the evolution of model code organizations in the United States.

•    Describe the code change process used by the model code organizations.

•    Describe the methods of code adoption by states and local governments.

•    Discuss the impact of the agendas of groups participating in the model code process.

Case Study

Changes to the International Code Council’s International Residential Code (IRC) mandating automatic sprinklers in new residential occupancies were approved by the ICC membership in Minneapolis in September 2008. The National Association of Home Builders (NAHB), a trade organization that had successfully lobbied against residential sprinklers, accused the fire service of gaming the vote by bussing in delegates who, without assistance, would not have been able to travel to the conference. The following question and answer is taken from talking points prepared and distributed by the IRC Sprinkler Coalition, a coalition of fire safety organizations led by Chief Ronny Coleman (retired), which was instrumental in the vote.

Q: Some people are claiming that the fire service “packed” the Minneapolis hearing to win the vote. Why is this claim being made?

A: The number of ICC voting governmental representatives who came to the Minneapolis code hearing to vote on the residential sprinkler issue was unprecedented in history. The level of interest in this issue was not surprising given that fire-safety advocates consider the residential sprinkler requirement to be one of the most important code changes in the history of model codes and that the National Association of Home Builders is vehemently opposed to this change.

Participation at the hearing was bolstered by two programs that were offered to provide travel assistance to ICC members, one by the IRC Fire Sprinkler Coalition, and one by the National Association of Home Builders. The IRC Fire Sprinkler Coalition program, conducted on behalf of more than 100 international, national, and local public safety interest groups, offered assistance to governmental representatives who would not otherwise be able to afford to attend. The IRC Fire Sprinkler Coalition’s program was initiated in direct response to a funding program launched by the National Association of Home Builders in 2007 and repeated in 2008 to bolster code official attendance at ICC hearings.

The idea of sponsored travel was initially NAHB’s, not the IRC Fire Sprinkler Coalition’s. Nevertheless, unlike the NAHB program, which advertised funding availability only for sprinkler opponents, the IRC Fire Sprinkler Coalition’s program did not discriminate based on the voting preference of the applicant. Also, unlike the NAHB program, the IRC Fire Sprinkler Coalition program did not distribute any funds directly to travelers, instead opting to pay for airfare and hotel expenses directly to the travel vendors to avoid any potential for personal gain by participants. These and other safeguards were put into place for the Coalition’s program to ensure that the program was both legal and ethical.

In the end, the outcome of the vote was a reflection of the commitment of those who were willing to sacrifice their personal time to travel to Minneapolis, attend a weekend hearing, and participate in the final vote.

1.   Cost is the central argument that developers use against residential sprinklers. Are there other arguments against them?

2.   What are some additional fire safety features that codes require in residential occupancies?

3.   List several sources for statistics on deaths and injuries from residential fires.

4.   Were the actions of the IRC Sprinkler coalition in response to NAHB’s program justified?

Information for this case study came from: The International Residential Code Fire Sprinkler Coalition’s A Discussion Guide on the New International Residential Code Requirement for Residential Fire Sprinklers, http://www.ircfiresprinkler.org/docs/Discussion%20Guide%20on%202009%20IRC%20Residential%20Sprinkler%20Requirements.pdf, accessed July 29, 2014

Introduction

The fire prevention and code enforcement efforts of state and local governments are driven by codes. Codes are merely systematically arranged bodies of laws or rules; they tell us what to do or what not to do. Examples are the United States Code, Code of Virginia, and Code of the County of Fairfax. These are the codified laws of the United States, Commonwealth of Virginia, and Fairfax County, Virginia, respectively. The term codified refers to the fact that the laws are arranged according to a system.

Model codes are technical rules that are developed by organizations and are made available for governments to formally accept and put into effect within the jurisdiction. We refer to this formal acceptance as adoption of the code. Code adoption is discussed in depth later in this chapter. Model codes are available for governments to adopt free of charge. Why would organizations invest thousands of hours of hard work only to offer their products to the public (through their governments) free of charge? Why would a state or local government decide to adopt into law rules developed by an outside special interest group? To truly appreciate the complex codes system in use in our nation, a look at the fire prevention and protection failures of the past is necessary.

The Development of Model Codes

Chapter 1 discusses some of the significant fires that have plagued our country since colonial times. In the aftermath of major fires, there was often an outcry for action followed by the passage of either a law or laws, which were then overlooked or forgotten once compliance became inconvenient or inexpedient. Perhaps the most striking example was in Chicago, where within 3 years of the great fire that killed 300 and destroyed more than 17,000 buildings, fire safety conditions were identified by insurance inspectors as worse than before the fire!1 If the political process has not always proven to be the best medium for the development of highly technical rules, then what has?

The fire insurance industry failed in its attempts to self-regulate insurance rates and commissions. The idea was to get the entire industry to agree to charge uniform rates and pay their agents standard commissions as a method of ensuring they could maintain adequate reserves to pay catastrophic claims. Greed won out, leaving them in a no-win situation. Inept or unscrupulous companies offered insurance at rock-bottom prices. The thin profit margins left little reserves to pay claims after massive fires; when disaster struck, the cut-rate companies simply declared bankruptcy, leaving their policyholders with unpaid claims. The legitimate companies were then left to feel the wrath of politicians who crafted punitive laws in response to the public outcry against the bankrupt companies.

In self-defense, the insurance industry embarked on another method of ensuring profits—the prevention of fires and the reduction of conflagration potential through the development of codes and standards. The National Board of Fire Underwriters’ (NBFU) first attempts at developing standards had involved setting specifications for “first class” woolen mills and sugar houses, which would qualify for reduced rates by virtue of their class rating, and for a whale oil substitute sold under the name of “kerosene oil.”2 In 1892, D.W.C. Skilton, president of the NBFU, set the tone for the industry’s fire prevention efforts for the better part of the next century Figure 4-1. He observed:

The old theory … that risk should be written as found, and a rate adequate to the hazard be charged is fast becoming obsolete, and today all local and district associations, and all syndicates for writing great industries are aiming to secure improvements in construction and greater care, and all favor the introduction of automatic and other appliances for the prevention and extinguishing of fires, the inducement to the assured being a greatly reduced rate for this lessening of hazard.

Reproduced from: Harry Chase Brearley, Fifty Years of Civilizing Force (New York: Frederick A. Stokes, 1916), page 78.

Figure 4-1 D.W.C. Skilton called for the insurance industry to reduce its risks by improving the fire safety conditions of its protected properties.

Reproduced from: Harry Chase Brearley, Fifty Years of Civilizing Force (New York: Frederick A. Stokes, 1916), page 53.

In the same year, a marked increase in fires at facilities considered to be better risks underscored a new hazard associated with economic success and innovation—electricity. An emergency meeting held in New York resulted in the formation of the NBFU’s Underwriter’s International Electrical Association and development of the National Board Electrical Code, known today as the National Electric Code (NEC; NFPA 70). By 1901, the code was being enforced by 125 municipal governments. The NBFU transferred responsibility of the code to the National Fire Protection Association (NFPA) in 1911. The NEC may well be the most widely used model code in the world.

A model building law for the state of New York was introduced to the state legislature in the early 1890s, but it was defeated by the efforts of representatives of Buffalo, Jamestown, and other small cities. By 1896, the NBFU voted to expand the proposed building code, to be called the National Board’s Model Building Law. In 1905, the first edition of the Board’s National Building Code was distributed free of charge to all cities with a population more than 5,000 and to contractors, architects, fire marshals, and technical schools Figure 4-2.3 The NBFU later developed the National Fire Prevention Code. The NBFU published the National Building Code and National Fire Prevention Code through 1976.

Figure 4-2 The 1905 National Building Code, the first model building code in the United States, and the basis for model building codes in use today.

Courtesy of David Diamantes.

Model Code Organizations of the 20th Century

Although several large cities had their own locally developed building and fire codes, many jurisdictions adopted the NBFU codes. Other organizations emerged in the 20th century that also developed model codes and the standards that accompanied those codes. A standard is a guide or rule to be followed. Codes tell us what to do; standards tell us how. The building codes require hospitals to be equipped with automatic sprinklers and refer to a sprinkler standard for specifics on design, materials, installation, and performance.

The 20th century ended with a drastically different lineup in the model code development process. The NBFU was out of the code business and had been absorbed as a part of Insurance Services Organization (ISO). The NFPA had grown from a handful of New England insurance engineers into a 75,000-member international organization. The NFPA’s mission statement conveys the organization’s far-reaching scope: “To reduce the worldwide burden of fire and other hazards on the quality of life by developing and advocating scientifically based consensus and standards, research, training and education.”4

The nation’s three largest model code organizations had abandoned their own regionally developed codes and had cooperatively developed a single set of construction and safety codes. Their success at working together would pave the way to consolidation into the International Code Council (ICC), a 50,000-member organization of construction, safety, fire, and other public officials; design professionals; installers; manufacturers; and builders. The events that led to the current model code system and the players in the model code process shed considerable light on what to expect in the future.

Although they have merged and no longer publish separate codes, it is important to know about model code organizations from the past. When the first edition of the International Building Code was published in 2000, it did not instantly take effect. Rather, states, cities, and counties adopted the I-Codes over time. It is challenging to pinpoint a date where the regional model codes were superseded, but we know for certain that every pre-2000 building in the United States was designed under a construction code different from the code in effect today. It is essential to know what code was in effect at the time of design and construction in order to ensure the same level of protection is maintained.

The Regional Model Code Organizations

The system of regional codes that gradually evolved, supplanting the NBFU, began in the 1920s with the development of a building code on the West Coast by the Pacific Building Officials Conference. By 1950, there were three regional code groups. Their success led the NBFU to abandon code development altogether and focus attention on other issues. Three major regional codes evolved in the 20th century, and almost every state adopted at least one of them. The differences were not always subtle, leading in some cases to increased costs for design and construction. By the late 1980s, the national map of adopted codes resembled a puzzle. A look at the model codes used throughout the country in 1998 reveals the continued influence of the regional code system Table 4-1.

Building Officials and Code Administrators International

Building Officials and Code Administrators International (BOCA) was established in 1915 by building commissioners from nine northeastern states and Canada as the Building Officials Conference of America to “discuss the principles underlying ordinances related to building.”5 In 1950, BOCA published its first Basic Building Code. The organization maintained building, mechanical, fire prevention, plumbing, and property maintenance codes through 1999. Before consolidation with the other ICC members, BOCA served the northeast, mid-Atlantic, and midwestern states.

Table 4-1   Model Codes Used Throughout the United States in 1998

Data from: Research by the Council of American Building Officials.

Southern Building Code Congress International

The Southern Building Code Congress International (SBCCI) was established in 1940 and published the first edition of the Standard Building Code in 1945. The SBCCI also published plumbing, mechanical, property maintenance, outdoor sign, and building conservation codes through 1999. The Standard Fire Code was cooperatively developed with the Southeastern and the Southwestern Fire Chiefs Associations under a memorandum of understanding. Final voting on the Standard Fire Code was limited to fire service representatives. Before consolidation with the other ICC members, the SBCCI served the southeastern and south-central states.

International Conference of Building Officials

The International Conference of Building Officials (ICBO) was established in 1921 as the Pacific Building Officials Conference, and it published the first edition of its Uniform Building Code in 1927.6 The ICBO went on to publish numerous related codes, including those for property maintenance, outdoor signs, building security, and building conservation. The ICBO published the Uniform Plumbing Code and Uniform Mechanical Code in cooperation with the International Association of Plumbing and Mechanical Officials (IAPMO) and the Uniform Fire Code in cooperation with the Western Fire Chiefs Association (WFCA). The IAPMO and WFCA retained copyrights for their respective codes, although the codes were published and distributed by ICBO. Before consolidation with the other ICC members, the ICBO served the western states, Alaska, and Hawaii.

The Uniform Building Code (UBC) was incorporated into the Department of Defense Military Handbook 1008, Fire Protection for Facilities Engineering, Design, and Construction, for general building code requirements. The UBC was superseded by the implementation of Unified Facilities Criteria (UFC 1-200-01) on July 31, 2002, which incorporated the International Building Code.

International Code Council

The ICC was established in 1994 as an umbrella organization consisting of representatives of BOCA, ICBO, and SBCCI for the express purpose of developing a single set of model codes for the United States. Calls for a single set of codes had been heard from various groups over the years, but world events in the last decade of the 20th century put the regional code concept under the spotlight and created an atmosphere for cooperation among the regional code organizations.

Tip

The ICC was established in 1994 as an umbrella organization consisting of representatives of BOCA, ICBO, and SBCCI for the express purpose of developing a single set of model codes for the United States.

By the early 1990s, the European Union had grown to 15 countries, and as part of its effort to form a large common market for goods and services, it had established a Standing Committee on Construction and had harmonized standards for construction and construction materials. The North American Free Trade Agreement (NAFTA), linking Canada, the United States, and Mexico, was eliminating trade barriers on the North American continent. Was our regional code system, with its technical disparities, a threat to American competitiveness? The members of the three model code groups did not wait for an answer to come from Congress or some think tank: They formed the ICC and began work on the I-Codes. The International Plumbing, Mechanical, and Private Sewage Disposal Codes were published in 1996, and the International Building, Fire, and Property Maintenance Codes were published in 2000.

The success in developing a single set of codes naturally led to considering a second step: If the three model code groups could develop one set of codes, perhaps three separate model code groups were unnecessary. On January 21, 2003, as a result of overwhelming support by the membership of all three groups, BOCA, ICBO, and SBCCI were consolidated, merging their memberships, assets, and staffs. The consolidation created an association of more than 50,000 members, whose codes are in use in 45 states and thousands of jurisdictions.7 The ICC publishes 16 model codes Table 4-2.

International Fire Code Council

The International Fire Code Council (IFCC) was established by the ICC to represent the common interests of the fire service and the ICC by providing leadership and direction on matters of fire and life safety and to meet government, industry, and public needs. The IFCC was formed before the development of the International Fire Code (IFC). Fire service influence on the development of the IFC through the IFCC is readily apparent. The IFC is a comprehensive, user-friendly document, clearly designed with inspectors in the field in mind.

The IFCC was composed of 15 members, one each from the eight International Association of Fire Chiefs regions, four representatives from the National Association of State Fire Marshals, and three at-large members. Through the efforts of the IFCC, memorandums of understanding (MOUs) established set-aside positions on code development committees for fire service members. The IFCC was superseded by the Fire Service Membership Council (FSMC) in June 2011. The 18-member Governing Council represents the interests of the fire service in the same manner as the IFCC.

Table 4-2   Model Codes Developed and Maintained by the International Code Council

CODE

TOPIC/AREA

International Building Code

Commercial structures, multifamily residential

International Energy Conservation Code

Energy conservation for mechanical, lighting systems

International Existing Building Code

Improving and upgrading existing structures to conserve history and resources

International Fire Code

Fire prevention and protection

International Fuel Gas Code

Gas-fueled systems and appliances

International Mechanical Code

Mechanical systems

ICC Performance Code

Performance-based design

International Plumbing Code

Plumbing in commercial and multifamily residential

International Private Sewage Disposal Code

Design, installation, and maintenance for private sewage disposal systems

International Property Maintenance Code

Property maintenance

International Residential Code

One- and two-family dwellings

International Zoning Code

Zoning

ICC Electrical Code

Administrative provisions for enforcement of the National Electrical Code

International Wildland–Urban Interface Code

Fire protection requirements for buildings constructed near wildland areas

International Green Construction Code

Measures for construction projects and sites to make buildings more efficient and sustainable

International Swimming Pool and Spa Code

Minimum regulations for public and residential pools, spas, and hot tubs

Data from: International Code Council.

Tip

The FSMC was established by the ICC to represent the common interests of the fire service and the ICC, and gives members direct access to the ICC board.

The National Fire Protection Association

There were very few comprehensive building regulations in effect in the 1800s. One of the significant factors affecting an owner’s decision to consider fire-safe design and construction for a structure or facility was fire insurance. New England was the home of many of the nation’s cotton and woolen mills because of the availability of moving water to power the machinery and equipment. Fire insurance companies that offered reduced premiums for sprinklered buildings or simply required the installation of fire sprinklers often had requirements for installation developed by their engineers.

Nine different standards for sprinkler pipe size and head spacing were being used by insurance companies within 100 miles of Boston in the late 1800s.8 In an effort to develop a standard that was acceptable by all the companies, fire underwriters formed an association to work toward uniformity in 1896. The group adopted the name of National Fire Protection Association.

By 1904, the NFPA’s active membership included 38 stock fire insurance boards and 417 individuals, most of whom were from the insurance industry. The first fire department officer to join the NFPA was Battalion Chief W.T. Beggin of the Fire Department of the City of New York (FDNY), who became a member in 1905, the year the NBFU first published the National Building Code. H.D. Davis, Ohio State Fire Marshal, joined the same year. In 1911, the NFPA assumed maintenance of the National Electrical Code from the NBFU Electrical Committee and has published it ever since. The NFPA was incorporated in 1930.

The NFPA publishes almost 300 codes, standards, and recommended practices developed by more than 205 technical committees. Many of the documents originated as NBFU pamphlets and carried the subtitle “as recommended by the National Fire Protection Association.” The NFPA’s recommended practices are one of the great untapped resources for municipal fire officials. They are not designed to be enforceable documents, but they are a guide to good practice for the given industries. Alerting business owners to the existence of these documents may do more for the prevention of fires than simply enforcing the code.

Tip

The NFPA publishes almost 300 codes, standards, guides, and recommended practices developed by more than 205 technical committees. While codes and standards are only enforceable after adoption, fire officials would do well to steer business owners who have questions about processes or procedures to the NFPA’s recommended practices.

The NFPA’s NEC is perhaps the most widely used code in the United States. It was the electric code referenced by all three of the model codes groups, and it has been incorporated by reference into the International Building Code. NFPA 101, Life Safety Code, addresses occupant safety in buildings with regard to the establishment and maintenance of exit facilities. It is neither a building nor a fire code, but rather addresses some features of each. It has requirements for sprinklers, fire alarm systems, and rated construction as elements of or protection for the means of egress. It mandates employee training and drills in certain occupancies. Compliance with the Life Safety Code is required for healthcare facilities as a condition of federal health insurance.

The Triangle Shirtwaist fire led to the development of the Life Safety Code. In 1911, a fire erupted at the Triangle Waist Company, a garment factory located in the Asch Building in Manhattan, New York Figure 4-3. Few codes for construction or worker safety existed at the time, and the New York City Building Code required exit doors to swing into stair landings in the direction of egress “if practicable.”9 The words practical and practicable have different meanings. Practical is a general term meaning useful or capable of being put to good use; practicable is more narrowly defined as capable of being put into practice. Because the Asch Building’s stairs had no landings, they were not “practicable” and the doors swung against the flow of egress. The fire resulted in 147 fatalities, most of them young women, many from immigrant families. Due to lack of egress, many had jumped from the upper floors of the 10-story loft building to the sidewalk below.

Figure 4-3 The Triangle Shirtwaist fire prompted the creation of the Life Safety Code.

© AP Images

In 1913, Frances Perkins, who had witnessed the Triangle disaster, spoke at the NFPA’s annual meeting and called for the NFPA to take up the cause of life safety from fires. (Later appointed Secretary of Labor by President Franklin Roosevelt, she was the first woman appointed to a presidential cabinet.) By 1916, the NFPA had established a committee on the safety for life from fire and published a pamphlet on the use of outside stairs for fire exits. In 1922, the Building Exits Code was published, later to be renamed the Life Safety Code. Until then, the NFPA had limited its efforts to engineering aimed at property protection. As an arm of the fire insurance industry, the protection of property was its stated mission.

In 2002, the NFPA published NFPA 5000, Building Construction and Safety Code. The code was developed as an alternative to the ICC’s I-Codes after a series of disputes with the ICC’s legacy organizations. The NFPA partnered with the American Association of Plumbing and Mechanical Officials; the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE); and the WFCA to offer a set of companion codes. NFPA 5000, the Uniform Plumbing Code, the Uniform Mechanical Code, and the Uniform Fire Code are among those distributed by the NFPA as the Comprehensive Consensus Codes (C3). These efforts were opposed by the American Institute of Architects (AIA), Building Owners and Managers Association (BOMA), National Association of Home Builders (NAHB), and others, fearing conflicting code provisions in different states and cities. NFPA 5000 was initially adopted by the State of California, even though no other state or major city had adopted it. In 2003, California adopted the International Building Code.

Code Changes

With the consolidation of the three regional model code groups into the ICC, there are only two major groups involved in the code change process: the ICC and the C3 group, comprising the NFPA, ASHRAE, IAPMO, and WFCA. Both groups use a consensus process to develop and maintain their documents, but both disagree on what the term consensus really means. In general usage, it means “an opinion held by all or most,” or “general agreement.”10 The term has been batted around and used both as a marketing tool and a means to stifle competition.

The International Code Council Code Change Process

The ICC code change process occurs on a 36-month cycle. Any interested person may submit a code change by simply downloading the code change form or requesting a form from the ICC. The process involves eight steps Figure 4-4. Committees at hearings are made up of a cross-section of members, including code officials, design professionals, installers, and manufacturers. What sets the ICC apart from the NFPA process, in which all members may vote, is that only code officials representing member jurisdictions are authorized to vote in the ICC process. The number of voting delegates is based on the population of the jurisdiction Table 4-3.

Tip

What sets the ICC apart from the NFPA process, in which all members may vote, is that only code officials representing member jurisdictions are authorized to vote. Voting members must be registered as voting delegates prior to code hearings.

Figure 4-4 The ICC code development process.

Modified from: International Code Council.

The number of voting delegates is applicable for each agency that enforces one or more codes within the jurisdiction. If a city of 100,000 has a building department that enforces the International Building Code and a fire department that enforces the International Fire Code, both organizations may send eight voting delegates to the code hearings, for a total of 16 delegates. It is important to note that to be a voting delegate, the employee must be directly involved in the administration, formulation, or enforcement of the code.

Table 4-3   Number of ICC Voting Delegates by Population Size

NUMBER OF CITIZENS SERVED

NUMBER OF VOTING DELEGATES

Up to 50,000

4

50,000–150,000

8

Over 150,000

12

This system gives the fire service a significant voice in the code development process. This is the opportunity that many in the fire service have worked toward for years—and warrants significant effort in the future. The old adage, “Be careful what you pray for; you might get it,” rings true with the establishment of the ICC. The fire service is truly an equal partner in the code development process.

Tip

Lack of fire service influence in the process can no longer be an excuse for building code provisions that the fire service finds unacceptable. Design professionals and developers will rightly ask, “Where were you guys?”

The NFPA Code Change Process

In the NFPA process, every member is assigned to one or more membership categories Figure 4-5. NFPA committees are structured so that not more than one-third of any committee represents a single interest group. The NFPA’s code change process requires 14 weeks and relies on meetings of the 205 individual technical committees. The ICC code change process works well for the 16 codes they maintain, but it would be impossible to use the same system for the over 300 codes, standards, guides, and recommended practices the NFPA maintains. In the NFPA process, the heavy lifting is done within the technical committees. Some are handled by single committees, like NFPA 1031, Standard for Professional Qualifications for Fire Inspector and Plan Examiner. NFPA 101, on the other hand, requires 14 subcommittees due to the complexity and size of the code.

Hearings for all 300 of the NFPA’s codes, standards, guides, and recommended practices simply cannot be held at one location. The technical committees vote and report on proposed changes at their individual meetings throughout the year. Meeting schedules are posted online. Their work is published first in Reports on Proposals (ROPs) and then in Reports on Comments (ROCs) after the NFPA receives comments on the committee’s actions. NFPA members vote on the changes at annual technical meetings.

Figure 4-5 The NFPA uses a system of nine member categories to ensure that no group has undue influence within the code and standards development process.

The fact that a code provision has the approval of the majority of the membership, through a development process with rules that guard against undue influence by any one special interest group, sounds like a recipe for success. Unfortunately, some groups do have significantly more influence in the code process, although not through unethical or immoral means. Influence in the process is measured directly by participation, and participation requires money and time. Membership costs, travel expenses to attend hearings, and time away from the job all require using the often limited resources that fire chiefs have to provide fire protection for the jurisdiction.

For the most part, the fire service has not been well represented in the code change process. Firefighters who have participated have performed admirably with few resources and against great odds. Industry recognizes the importance of participation on technical committees and considers the time and resources as the cost of doing business. But it is difficult for most fire chiefs to allocate resources to a national process involving cross-country air travel, rental cars, and hotels when budgets are strained and demands for service are increasing.

Fire Service Commitment

With the voting procedures adopted by the ICC comes the opportunity for full fire service participation in the entire code development process. With that opportunity comes the obligation not only to the public, but also to present and future firefighters, who will fight fires in buildings and structures designed and built to the codes. The fire service must exercise influence through groups such as the International Association of Fire Chiefs, the International Association of Fire Fighters (IAFF), and regional organizations. Code development impacts firefighter safety. Buildings are built to a minimum code. A prominent point in the public discussion of the major fire incidents of the past century has been an indictment of the building regulations or lack thereof that often played a role in the catastrophe, and design professionals have rightly called attention to the lack of fire department involvement when the code was being developed.

In the preface to the first edition of Building Construction for the Fire Service, Francis Brannigan gave a charge to the potential fire officer:

For better or worse, these are the buildings that have been built, know them, do the best you can, safeguard your men, but be aware that many of these buildings were built to burn or collapse.

Reproduced from: Francis L. Brannigan, Building Construction for the Fire Service (Boston: National Fire Protection Association, 1971), preface.

Brannigan’s text has been required reading and has had significant influence on the modern fire service. What was left unsaid by most fire service texts was that we did not have to simply accept the fact that buildings were not adequately designed and constructed to resist the effects of fire. In the past, we had the excuse that we were outnumbered and outgunned. That excuse is gone. The fire service must dedicate itself to becoming a major player in the model code development process.

Tip

The fire service must dedicate itself to becoming a major player in the model code development process by becoming active members of the ICC and the NFPA.

Code Adoption

The act of state or local governments accepting a model code and giving it the effect of law is called adoption. Two basic methods are used based on the laws in effect within the jurisdiction. Adoption by reference is simply the passage of legislation that states that a specific edition of a certain code will be enforced within the jurisdiction. The document is mentioned by reference only, and copies of the codes must be purchased from the model code groups. In some localities, adoption by reference is not legally possible. Adoption by transcription is a legal requirement, and the code is republished, usually with a numbering system for each section or article that complies with the requirements of the jurisdiction.

Model code groups permit adoption by reference for free—they make their money by selling books. Adoption by transcription is a different matter. A license to republish can be negotiated, or the model code organizations can be contracted to publish a special edition that meets the requirements of the adopting jurisdiction, and they get to sell the codebooks.

State and Local Adoption

Whether a code is adopted as a state minimum code that can be locally amended, adopted as a state mini-maxi code with no option of local amendment, or as simply a locally adopted code, there are legal requirements to ensure that adequate public notice is given and citizens and special interest groups are given an opportunity to be heard regarding the proposed codes. Mini-maxi codes are favored by most business interests and by developers because they create uniformity within the state, and all lobbying efforts can be directed at the state capital, not within each political subdivision. The fire service generally opposed mini-maxi codes because local control is reduced. One positive aspect of mini-maxi codes is that they promote training and political action on a statewide level, forcing fire service organizations to work together.

Tip

Mini-maxi codes are favored by most business interests and by developers because they create uniformity within the state. Often dismissed as removing local control, they do promote training and education on a statewide level.

What Codes Cannot Do

The cycle of catastrophe followed by a public outcry of demanding the passing of new laws is not new and will likely not end anytime soon. Sometimes a legitimate need for new regulations is recognized, and new code provisions are adopted. In 1985, a fire at the Valley Parade Soccer Stadium in Bradford, England, claimed 56 lives and injured 200. Investigators identified the large volume of combustible materials beneath the grandstands as a significant factor in the fire spread. The fire, caused by discarded smoking materials that ignited trash and rubbish beneath the bleacher seats, engulfed a 290-foot-long grandstand in less than five minutes and was televised live with the soccer match.11

Tip

The cycle of catastrophe followed by a public outcry demanding the passing of new laws is not new and will likely not end anytime soon. Unfortunately, it often takes a tragedy in order for meaningful change to occur.

The Bradford stadium fire identified a potential problem not clearly covered by fire code provisions. A provision regulating waste and combustible materials storage under grandstand seats was added to national model codes and exists today in both the Uniform Fire Code and International Fire Code.

In the aftermath of the 2003 nightclub fire at The Station in West Warwick, Rhode Island, many called for new codes to ensure that such a catastrophe could never occur again. The lack of sprinklers was rightly identified as a significant factor in the fire that claimed 100 lives, but existing code provisions in place in the state of Rhode Island could have prevented the incident if they had been followed. The Rhode Island Fire Code, based on NFPA 1, included provisions that addressed indoor pyrotechnic displays and foam plastic as an interior finish. Codes and laws can only be effective in preventing tragedies from happening if they are obeyed.

In the wake of the 2007 Sofa Super Store fire that took the lives of nine firefighters in Charleston, South Carolina, the National Institute of Occupational Safety (NIOSH) issued more than 30 recommendations. None addressed a critical issue that was identified by Chief Mike Chiramonte (retired) as part of an investigative team assembled by the City: “If we have an example of any building anywhere that shows that fire prevention can directly save firefighters lives, then this one does.”12 The City of Charleston had amended its fire code, deleting language that mandated inspections of mercantile occupancies and discontinued its fire inspection program. The building had not been inspected since 1998. An illegally constructed loading dock that should have been identified during a fire inspection was identified as the key element in the rapid fire spread.