

FIRE PROTECTION HISTORY-PART 141: 1908 (THE IMPORTANCE OF FIRE PREVENTION)

By Richard Schulte

Among the reports made at the twelfth Annual Meeting of the National Fire Protection Association (held in 1908) was a presentation by F. M. Griswold on the NFPA delegation's attendance at the International Association of Fire Engineers convention held in October 1907. The following is an excerpt from Mr. Griswold's presentation on the Fire Engineers convention:

"Gentlemen—Your delegates, to whom was assigned the representation of this Association at the thirty-fifth annual convention of the International Association of Fire Engineers, held at Washington, D. C., October 9-11 inclusive, 1907, beg to report their presence as a body at the opening and during each of the business sessions of the convention; and to record acknowledgment of the cordial reception extended to them by the officers and members of the Association, including the privilege of the floor during each of the business sessions.

[TEXT OMITTED]

*Realizing how essential it is for the members of these two associations to work in harmony in order to reach the goal of accomplishment so earnestly and worthily sought by each, it has for several years been the desire of your Chairman to make more evident the interest of the National Fire Protection Association in the work and progress of the International Association of Fire Engineers by securing for one or more of its members or delegates the honor of active membership in the latter association. **It is with particular gratification that we may now report the accomplishment of that purpose, through the unanimous election at this convention of Delegate H. C. Henley to active membership in the International Association of Fire Engineers.***

The selection of Mr. Henley for this honor is to be commended, as his long and practical experience as an active fireman, added to his well-deserved reputation as a fire prevention engineer, especially qualify him to forward the interests of both organizations and at the same time to further cement the very harmonious and pleasant relations of fellowship now so happily existing.

Your delegates are very much encouraged by the evidences of a lively and growing interest in the matter of fire prevention, as shown by the fire chiefs at each recurring convention. We feel assured of their hearty co-operation in the further cultivation of this line of activity as a part of the duties incumbent upon them, to the end that by the advancement of fire prevention, added to the use of most approved fire extinguishing apparatus, the hardships and dangers of their employment in the public service may be much mitigated, and the wealth of the nation as a whole widely conserved through their more effective work.

Continued and insistent agitation for the adoption and enforcement of approved building laws throughout the country will prove the most efficient method by which the foundation of fire prevention may be broadened and strengthened, and thereby will the fireman's lot be made happier and safer.

Holding in high esteem the honor conferred upon us as your delegation to the convention of the International Association of Fire Engineers, and realizing that the relations thus set up have proven of much value in the advancement of mutual co-operation between the two organizations, we heartily approve of the continuation of the representation from this Association through the selection of delegates who have some knowledge of fire department work, supplemented by such personal attributes as may enable them to further extend and solidify the friendly and harmonious relations now existing.

F. M. GRISWOLD, Chairman.

[TEXT OMITTED]

IS FIRE PREVENTION OF MORE IMPORTANCE THAN FIRE EXTINGUISHMENT.

BY H. C. HENLEY,
Chief Inspector Fire Prevention Bureau, St. Louis, Mo.

*Fire prevention and fire protection should be questions of the greatest importance to the public at large at the present time. The value of property annually destroyed by fire is enormous. The loss has steadily increased year by year, and the loss during the year 1906 is greater than ever known. **The San Francisco conflagration called forcibly to the minds of many the necessity of devising means to prevent, as far as possible, this general destruction, and brought about a change in the attitude of the public towards the prevention of the excessive loss and danger confronting them from conflagration.** Homes, mercantile establishments, factories, and other enterprises, some of which require years of labor to establish and become possibly mainstays of the cities in which they were established, are included in the general destruction.*

*Fires which are not accidental are preventable through proper construction of buildings, earnest effort at prevention and proper means for fire protection. A comparison of the fire loss in the United States and six European countries, recently published by the National Board of Fire Underwriters is of interest. Population of the United States, 85,000,000; annual average fire loss for past five years, \$175,000,000; annual fire loss per person for the period, a fraction over \$2.00. In comparison we have statistics of six European countries showing an annual fire loss per person of but 33 cents. **The number of fires to 1,000 population of forty-three European cities was found to be only .86 as against 4.05 in the cities of the United States.***

*The immunity from fire and loss in European countries is due, not because of better fire protection, but to the enforcement of building laws, an effort at prevention, and investigation into the causes of fires which occur. **Proper ordinances rigidly enforced regulating the construction of buildings, is the first requisite towards the prevention of loss.***

*Most of the building laws now in force are inadequate and obsolete. **Recognizing the necessity for better ordinances, the National Board of Fire Underwriters recently published a building code.** This is recommended, and, it is hoped, may be generally approved, if not in its entirety, yet as a basis for the arrangement of ordinances suitable to meet present conditions.*

*The provisions of the code care for deficiencies which have proved so costly in the past, and provide for a class of construction which will tend not only to prevent the destruction of the building in which fire may originate, but its spread to contiguous buildings. **Amongst the most important provisions of the code are the following: The limitation of the height and area of buildings of various construction; the protection of openings in exterior walls, and communicating openings in division and party walls; protection of vertical openings; necessary thickness and construction of inclosing walls and parapet walls; proper construction of flues and installation of apparatus heated by fire. All of the above provisions are very essential in the prevention of fire.***

Buildings in the larger cities are built to great height and of large area, the height sometimes being due to the scarcity and value of the ground, and, while there is danger in extending these buildings above the height at which the fire department can be effective, yet such may be permitted, if constructed of approved fire-resistive construction; when designed for hotel or office occupancy, if furnished with adequate fire protection. Buildings used for the occupancies mentioned contain the minimum of combustible material.

The mercantile or manufacturing building is quite another proposition, and buildings of this class should be restricted in height and area; otherwise they become conflagration breeders and a serious menace to the vicinity in which they are located, due to the quantity of combustible material they contain. This is especially true of mercantile buildings, where space is valuable, and at times they contain stock piled from floor to ceiling, providing no means for interior protection by the local fire department, and rendering impossible the introduction of streams of water to the center of the floor.

*Where area is reduced by party walls the reduction will not be efficient, unless all communicating openings in the walls are provided with standard automatic fire doors. **It is stated that about thirty-three per cent of the total annual loss by fire is due to fire extending from the building in which it originates to contiguous property, and in instances resulting in conflagration.***

The congested districts of all of the large cities are becoming more congested. These districts are changing, old buildings making way for new structures of larger area, and it is of the greatest importance that the openings in exterior walls of these buildings be protected with standard fire-resistive coverings. That we do not have more conflagrations is a wonder to those familiar with the conditions.

***The vertical openings through floors—namely, elevator shafts, stairways, well holes, dumb waiters, raceways, etc., are probably responsible for the destruction of more buildings than any other deficiency in construction.** The vertical openings provide a means for the rapid spread of fires through floors, where fire occurs, by furnishing an opening through which fires spread, and furnish a passage through which fire is liable to spread and endanger, the lives of those whose duty it is to protect the property. Vertical openings should be inclosed in walls of non-combustible material, and, where this is not possible, be provided with automatic trapdoors.*

Hard-burned brick, laid in cement mortar, forms the best material for construction of exterior division and party walls. Stone disintegrates quickly under heat and offers small resistance. Ornamental fronts and fronts having an excessive area of wall openings are subject to heavy loss. Steel and iron supports are dangerous, unless thoroughly protected by brick, terra-cotta, or concrete.

Believing that construction is of primary importance, I have called attention to the above provisions as being essential towards minimizing the fire loss, so far as pertaining to the construction of buildings. Lumber, due to its scarcity, has increased very greatly in value, and the difference between the cost of buildings of combustible construction and the cost of fire-resistive buildings has been lessened to the extent that it is a better investment in every way to select a fire-resistive type of construction, the cost of the various constructions being about as follows: Ordinary joist construction, about 11[-]½ cents per cu. ft.; slow-combustion construction, about 14 cents per cu ft.; reinforced concrete construction with exterior walls of brick, about 18 cents per cu ft.; fire-resistive construction, steel-skeleton type, about 20 cents per cu ft. It is estimated that \$500,000,000 is expended annually in the erection of new buildings in the United States, and that the majority of these buildings are of combustible construction, the most of which are erected deficient in the particulars cited. If these conclusions are true, there is not much encouragement towards a material decrease in loss by fire.

Inspection is the cure for many evils, especially when made during the time buildings are in course of construction, for the dangers resulting from unsafe framing about flues, improperly constructed chimneys, unsafely arranged hearths, steam and gas pipes and wiring may then be discovered and corrected; when, if left until the building is completed, these dangers may not be discovered in time to prevent the occurrence of fire. There is room for much educational work in the matter of inspection.

The general apathy and negligence of the public towards the fire hazard is responsible for the majority of the fires which occur. Amongst the common causes of fire are the following: Ashes stored in combustible vessels; combustible material placed too near heating and lighting apparatus; defective wiring; defective apparatus used for heating and power; open flue-holes; the handling of gasoline; and accumulations of combustible rubbish. Co-operation upon the part of the local fire department, underwriters and city officials will be sufficient to eliminate the above causes and result in smaller losses by fire.

The public depends upon the fire department for protection, and favorably receives suggestions from this source upon the safety of their premises. Fire companies should be familiar with important buildings within the district covered by the company. It is of great advantage to the firemen to know the condition of the building, the manner of supporting the floors, the location of the stairs and elevator shafts, skylights, ladders to roof, fire doors and shutters, sides of building which are accessible; manner of obtaining entrance into basement, location of inflammable oils and explosives, the manner of arrangement of private fire apparatus, consisting of water barrels and buckets, chemical fire extinguishers, etc., before fire occurs. The company equipped with this knowledge can work intelligently from the start, its work will be effective, and it may mean the prevention of loss of life; and it will certainly reduce the loss by fire.

The fire department of any city must be considered one of the most important branches of the municipal government. It protects the lives of the public and should receive the best support and its needs promptly cared for.

There is practically no difference between fire prevention and fire protection. Both refer to the reduction of fire loss. This may be accomplished—(1) By the removal of the cause. (2) By providing ready means for prompt extinguishment. (3) By omitting vertical openings, thereby confining fire for a short time in floor in which it originates, giving the department an opportunity of holding fire in check (4) By providing exterior openings in buildings with standard coverings, thus preventing the spread of fire and resultant conflagrations.

A small loss ratio in any city is an indication of good management, not only in the matter of fire extinguishment, but in co-operation between the fire department and all other authorities towards fire prevention.”

The list of building fire protection features that H. C. Henley discusses in the paper above should be familiar to those who work in the fire protection field today. Even in 1907, fire protection professionals knew what to do to control building fires. The problem back then was the application of these concepts to buildings being designed and constructed, followed by the maintenance of the fire protection features provided.

Today, our design and construction professionals are much more sophisticated when it comes to fire safety in modern buildings, however, the problem of the maintenance of building fire protection features is still with us. Periodic fire prevention inspections are still necessary in order to insure that the level of fire safety initially provided for a building is maintained over the years.

While the movement toward developing effective fire prevention inspection programs was started well over a century ago, many fire departments in the United States still emphasize fire suppression activity over fire prevention activity. Even today, many in the fire service fail to understand that fire prevention activity is simply another means of performing fire suppression activities. Fire prevention is simply a more efficient (and safer) means of accomplishing fire suppression.

* * * * *

Copyright © 2013
Richard C. Schulte

Source: "*Proceedings of the Twelfth Annual [NFPA] Meeting*", Chicago, Illinois, 1908.