

SCHULTE & ASSOCIATES

Building Code Consultants
880D Forest Avenue
Evanston, IL 60202
fpeschulte@aol.com
847/866-7479

SAVING LIVES (AND REDUCING PUBLIC FIRE PROTECTION COSTS): PRINCE GEORGE'S COUNTY

By Richard Schulte

According to statistics collected by the National Fire Protection Association (NFPA), a total of 3,010 fire fatalities occurred in the United States in 2009. Of those fatalities, 2,695 fatalities resulted from fires in building structures and 96 percent of the structure fire fatalities occurred in residential occupancies.

The NFPA statistics also indicate that 105 fire fatalities occurred in commercial (non-residential) buildings in 2009. To put this statistic in perspective, 47 fatalities caused by lightning occurred in the United States in 2006.

Based upon the statistics, it would seem that, if the United States has a "fire problem", the problem is pretty much confined to residential occupancies. Given that, it would seem that the only way to address the residential fire problem is with sprinkler protection. In 1992, one community, Prince George's County, Maryland, did just that. The results of mandating sprinkler protection in new dwellings throughout the county since 1992 are summarized in a nine page report titled "*Benefits of Residential Fire Sprinklers: Prince George's County 15-Year History with its Single-Family Residential Dwelling Fire Sprinkler Ordinance*" authored by Steve Weatherby and dated August 2009. The following are a few excerpts from this report:

"In 1992, Prince George's County in Maryland enacted an ordinance mandating the installation of automatic fire sprinkler systems in new one and two-family structures."

"From 1992-2007, there were 101 fire deaths and 328 civilian injuries in single-family or townhouse fires that were not protected with fire sprinkler systems. No fire deaths occurred in sprinklered structure fires during the period studied, and there were only six civilian injuries."

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“ . . .Having sprinklers cut the property loss by almost one-half.”

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“The cost impact to developers/builders was determined by interviewing several Prince George’s County sprinkler contractors, who indicated that the per- square-foot cost to install a fire protection system in a single-family home in the County has decreased over the years to under \$2.00 per square foot. This is consistent with a recent NFPA study that found the average cost of installation nationally to be \$1.61 per sprinklered square foot.”

“Prince George’s County, Maryland, is roughly 500 square miles and is situated in close proximity to Washington, DC. Prince George’s County has a mixture of light industrial, retail, residential and institutional structures that are protected by the county’s fire department. . . .”

“The Prince George’s County Fire Department has 44 stations with a career staff of more than 800 individuals and a volunteer force of 2,000 members. There are 1,200 active emergency responders. In 2007, Prince George’s County Fire Department responded to nearly 127,000 calls for service.”

“ . . .In the 13,249 fires that occurred in homes that were not protected by sprinklers, 101 residents were killed and 328 were injured. Fire deaths in residential dwellings made up 89% of the fire deaths in Prince George’s County during the years.”

“In 96 percent of the 245 reported fire-related sprinkler activations only one or two sprinklers operated.”

Analysis

The report on residential sprinkler protection from Prince George’s County, Maryland contains a wealth of information, not only on residential sprinkler protection, but also on ways to reduce public fire protection costs.

The study clearly demonstrates both the capabilities and reliability of not only residential sprinkler protection, but sprinkler protection in general. Based upon this study, it can be concluded that the installation of sprinkler protection in dwellings will virtually eliminate fire fatalities. Not only that, but the study also demonstrates the reliability of residential sprinkler protection.

Given that installations which comply with NFPA 13D are actually partial sprinkler protection installations, it can be concluded that the results of this study are also applicable to sprinkler installations which comply with NFPA 13 and NFPA 13R. In other words whether the sprinkler protection is designed and installed per NFPA 13, NFPA 13R or NFPA 13D, sprinkler installations are capable of eliminating most fire fatalities and are a highly reliable form of building fire protection. This latter point is especially important given that the reliability of sprinkler protection has been challenged by consultants employed by the trade association which represents manufacturers of passive fire protection products, the Alliance for Fire and Smoke Containment and Control (AFSCC).

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In 2005, the AFSCC commissioned William Koffel, Koffel Associates, Inc., to do a study of the reliability of sprinkler systems. Based upon data collected by the National Fire Protection Association, Koffel concluded that the failure rate of sprinkler system may be as high as 1 in 6 fires large enough to activate sprinklers. Since 2005, Koffel's statistic on sprinkler system reliability has been refuted by further studies developed by the NFPA, but the Prince George's County study is just one more piece of evidence that the AFSCC/Koffel attack on the reliability of sprinkler systems was misinformation at best, and perhaps intentional disinformation.

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Not only does the Prince George's County study demonstrate the efficacy of sprinkler protection in preventing fire fatalities, but this study also suggests that the cost of providing public fire protection can be reduced both by the installation of sprinkler protection in dwellings and by the use of a combination of paid professional fire fighters and volunteers.

In an era where Federal, state and local resources seem to be scarce and will likely become even more scarce, the development and implementation of ways to reduce government expenditures on providing public fire protection will likely be of interest. Supplementing the capabilities of professional fire fighters with the use of volunteer fire fighters and with residential sprinkler protection would seem to be a viable means of reducing the cost of providing public fire protection.

The study on the experience with residential sprinkler protection in Prince George's County, Maryland is a "landmark" study, not only because it documents the capabilities and reliability of sprinkler protection, but also because it suggests that a combination of professional and volunteer fire fighters is a workable solution for reducing public fire protection costs.

The author of this study, Steve Weatherby, and those who assisted in assembling the information included in the study, certainly deserve a "hat tip".

It is likely that the Prince George's County Fire Department had no idea of how useful the fire safety concepts pioneered in the County would be in 2010 way back in 1992, but the foresight of the Department, and the politicians who supported the concept of residential sprinkler protection, deserve both acknowledgment and praise. Good job.

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