

If It Can Go Wrong, It Might...

Nobody wants anything to go wrong. Unfortunately in our industry, fire protection, when something does go wrong it is big news and when it goes right it isn't news. Fire and life safety, with people's lives, property, livelihoods, and firefighter safety are not issues to be taken lightly.

Many of the following thoughts apply to the different types of fire protection or fire protection systems, but they will focus on sprinkler systems.

Futrell Fire Consult & Design, Inc., in Osseo, Minnesota develops bid documents, we also design sprinkler systems, we teach sprinkler system design, we review sprinkler system designs for municipalities or other engineering firms, and much more. The difference between us and most other fire protection consultants now is we are NICET (Level III and IV) designers and Fire Protection Engineers with "hands on" design experience AND we investigate system failures.

Our bid documents and plan reviews incorporate the things that we see from investigations and losses. It is obvious that these "bad" things are not usually intentional (unfortunately that does happen), but in general they happen because several things come together that could have been prevented, or an unpreventable event occurs with preventable factors. The cost of us incorporating the fixes for the "bad" things we've found into our bid documents or plan reviews is that the costs of the systems do go up and we endure a good deal of negative feedback because the costs are higher or the reviews are more thorough. However, the costs don't go up nearly as far as the cost of a loss.

If you are faced with a loss several things can happen. You can lose time and money to the investigation – you usually don't get paid back, but the attorneys and consultants get paid; you lose time and money you could be using on a paying project; your insurance costs can go up; our industry can have a strike against us; a good project can become a "loser" quickly; and subsequent business can be lost; and more.

As one example, we were called to investigate a sprinkler pipe that froze and broke in a home. The home was complete and had a residential sprinkler system installed at the request of the city because of fire department access concerns. To make a long story short, the sprinkler system was installed in an unheated attic (we are in Minnesota here and one morning I woke up and the thermometer read -36°F) and the sprinkler contractor's contract excluded insulation. They installed the sprinkler pipes as much as 18" above the finished ceiling in the attic and the insulator wrapped the pipes with insulation and then blew additional insulation under and over that; effectively insulating the sprinkler system from the heat. At least two of the sprinkler pipes froze and broke causing water damage in the tens of thousands of dollars range. When I talked to the general contractor he said, "That was the first, and the last, sprinkler system we will put in a house". Enough said, right?

What is the point of the example? A little forethought and a little coordination might have avoided a loss, an unhappy customer, and a strike against sprinklers. Water filled pipes in an unheated attic, far above the finish ceiling, and wrapped with insulation would all seem to be foreseeable and preventable. In addition, what are the chances, over the life of the home that a cable installer, an electrician, a homeowner, a satellite installer or someone else would be in the attic and disturb the insulation, uncovering the sprinkler pipe, and allowing it to freeze?

The same goes with many of the other losses. If you can imagine it, we may have seen it – and some things you probably never thought of too. In this short article I cannot begin to list more examples, discuss what you should watch out for, tell you what we've seen, make suggestions or recommendations, or discuss inspection, testing, and maintenance. But think about it, from the lack of flushing of underground mains, to freezing conditions, and hazards that exceed the system design, you probably have in your own minds the types of things that can negatively impact sprinkler system design, installation, and maintenance and cause you and our industry problems.

Reprinted with permission of the author.

Scott A. Futrell, "If It Can Go Wrong, It Might..." FPC/Fire Protection Contractor magazine, April 2007, p. 24-25.