



BOMA New York: Identifying fire protection equipment in your building

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New York, NY A recent BOMA New York Forum, entitled “Identifying Fire Protection Equipment in Your Building,” offered an eye-opening, educational tour of an often-unnoticed life safety component of every class of commercial property within the metropolitan area – structural fire protection equipment.

Presented by Billy Phair of W&M Protection, this information-packed forum touched on the identification, inspection and maintenance of all parts of the most common types of fire suppression systems.

Phair, a self-proclaimed “sprinkler guy,” tackled what many viewers would consider a rather uninteresting subject and transformed it into a fascinating session. By the conclusion of his presentation, attendees had gained knowledge not only of the nuts-and-bolts of a building’s fire protection system, but a clear understanding of the importance of how to recognize signs of life-threatening, common everyday inattention to improper system settings, inspection, maintenance, and just simple human errors that historically have caused untold damage to lives and property.

To begin, Phair reported that sprinklers are effective at controlling 96% of the fires in which they operate. He said, “If a sprinkler is in service, it will work. When they operate, they control the fire.” He also busted the myth that sprinklers operate on an “all or nothing” basis. In fact, he said, less than five individual sprinkler heads activate in 97% of fire suppression cases.

Why do sprinklers fail? In 76% of the cases of sprinkler failure, it is because a building’s fire protection system was out of service, or simply turned off. In 59% of those cases, the system was turned off, and in 17% of those cases, there was a “manual intervention” during the event that caused the sprinklers to fail. Phair cited a recent event at a GAP clothing warehouse in Fishkill, NY, in which more than a third of the property was lost because an employee turned off the main water valve during the fire. The employee thought the fire was put out and was concerned about water damage.

For this reason, Phair said, “It’s good to know how a system works, but in an active fire your job is to get out of the building,” and let the fire fighters do their job.

Most important, systems must be inspected. “It is the law,” Phair said, and insurance carriers require it. He showed graphic photos of piping clogged by corrosion, sprinkler heads clogged and spackled over, main water valves obstructed by foliage growth – causing firefighters to waste valuable time getting access to closed valves – and damaged pumps.

Phair also explained the several types of “wet” and “dry” systems. For example, sprinklers that must have immediate access to water via piping that is always charged with water, and sprinklers supplied via pipes that must always be dry because of freezing conditions, such as outdoor parking garages, and walk-in freezers. By code, wet systems should never be exposed to temperatures below 40 degrees F., while dry systems must be kept dry until water is needed.

He also stressed the need for building operations staff to be aware – even casually – of things that just don’t look right, such as missing or broken pieces of sprinkler heads. Noticing a valve that should be open when it’s closed should be another situation that calls for attention. In the latter case, valve labeling and the necessity for correctly identifying the function of a given valve is paramount. Phair said, “One of the most common flooding mistakes is missing or incorrect valve labeling.”

It is not uncommon, he said, that some building spaces must be “isolated” from sprinkler systems during remodeling and other situations. Therefore, he said, a clearly labeled valve that says, “Open Normally,” or “Closed Normally,” can prevent operational problems. Valves are designed to let everyone know, visually, whether they are open or closed. For example, the outside stem and yoke (OS&Y) water valve has its stem protruding from the top of its knob when it’s open and is nested down inside the body of the valve when it is closed. Likewise, common “butterfly” valves have indicator “wings” that align with its piping when open and are crosswise when closed.

In Alarm valve systems, valves are equipped with tamper switches that send a warning signal to the central fire control station that they are closed when they should always be open, and vice-versa. In Dry valve systems used in cold climates, the plumbing is charged with compressed air or nitrogen that keep water valves closed until needed in a fire. With Deluge or Pre-action valves, which Phair calls, “Fancy dry” systems, an alarm is sent from the valve, but water will not flow until further action is taken at the fire control station. When that happens, the fire department is automatically notified “to get the trucks on the road.”

Phair also presented an in-depth discussion of fire pumps, arguably the most vital component of a fire protection system, because pumps make sure that “you have water when you need it.” Indeed, most pumps can deliver 1,500 to 2,500 gallons of water per minute!

Most pumps are either electric or diesel-powered. This, in turn, led Phair to make a compelling case for weekly, monthly, annual and three-year pump inspections.

He cited cases where diesel fire pumps failed to operate because they ran out of fuel.

He followed this subject with a brief description of building exterior standpipe connections, which he

characterized as a “building-specific fire hydrants. “This is how fire departments deliver lots of water to fire fighters,” he said. When the fire trucks arrive at an event, hoses are connected from street fire hydrants to pumper trucks, which then deliver high-pressure water to the building’s standpipes, which have interior floor-by-floor water delivery connections to be used only by trained fire fighters. As an interesting factoid, exterior standpipe connections have brightly colored caps – red for “standpipe only,” yellow for “combination standpipe and sprinkler,” and green for “sprinkler only.”

Phair also touched upon the several types of fire extinguishers, noting the special “clean agent” extinguishers used in spaces like museums with priceless artifacts and art, and data centers, where water must never be used.

Phair emphasized the need for constant inspection and maintenance of fire protection systems. As an aside, he noted that FDNY Notices of Violations” or NOVs, “are preventable, but not 100% avoidable.” Accordingly, he offered some pro-tips:

Conduct your own inspections and tests regularly.

Keep detailed inspection reports and logbooks handy and be ready when the FDNY inspectors arrive at your doorstep.

Employ the best fire marshals and monitors for your building staff.

Keep pump rooms and fire system areas spotlessly clean.

Have clear labels for every piece of equipment.

He said, “Keep it clean! The better it looks; the less likely inspectors will start poking around.”

In conclusion, Phair offered three quick, real-time survey questions for attendees.

The first was a heads-up for cold weather: “Have you done any cold weather preparations this year?” Not surprisingly, 100% of respondents answered, “No.” (At least they were honest.)

The second: “How many of you test your fire pumps monthly?” Forty percent answered “Yes.” The remaining 60% answered “I don’t know.”

The final: “Have you ever had your fire pump overhauled?” Twenty-five percent answered “Yes.” The remaining 75% answered, “No.”

Stay tuned for an exciting 2022 schedule of BOMA New York Monthly Forums – the go to signature event for property managers, facility managers, building engineers, and other CRE professionals; all of whom are eligible for CPU credits.