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The importance of upgrading fire alarm systems to be national and state fire code-compliant - Part 1

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In Greater Boston, there are more aging commercial structures than perhaps any city in the U.S. While many of our commercial buildings, hospitals, hotels, and educational facilities have upgraded their fire alarm systems to be national and state fire code-compliant, many are still in need of renovation. This two-part article explores the importance of keeping life safety systems up-to-date, contractor selection, key considerations in upgrading systems, and ongoing maintenance and testing programs.

Keeping a building's life safety/fire alarm system up-to-date and up-to-code is of critical concern to every commercial building owner and manager. With ongoing technological advancements in fire alarm systems designed to keep commercial buildings safer for occupants, and better protected, the average life span of a life safety system is 10 to 15 years. Since the National Fire Codes are updated every three years, certain aspects and components of the system may require more frequent updating.

There is a tendency to leave life safety systems alone until a major upgrade is mandated by local authorities. Reasons for delaying the process often include both budgetary constraints and perceived inconvenience associated with a retrofit. However, life safety systems should be upgraded with at least the same frequency as other major building systems, as budgeting issues and inconvenience are typically very manageable when employing the services of an experienced, reputable contractor.

As a building ages, the life safety system ages with it - the older the structure, the more outdated the system. As life safety systems become outdated, they are increasingly susceptible to malfunctioning. Smoke detectors become more sensitive. Waterflow switches, which sense a sprinkler flow in the building, become erratic or worse, non-operational. Audible and visual devices installed in buildings as recently as five years ago are no longer compliant with present day codes. Older audible/visual signals did not require the power that today's code-compliant devices require. Furthermore, the number of devices has increased three-fold due to changes in the code. Older systems simply do not have the circuit capacity to support all the audible/visual signals mandated today. What's more, a significant non-compliance issue in many older fire alarm systems is that existing electric/telephone closets and cabling often do not meet 2-hour fire ratings and wiring may not be compatible with newer systems. This all poses a serious risk to people and property.

Evaluating the Facility for an Upgrade or a New System

Prior to initiating a fire alarm system upgrade, an evaluation of the existing system must be undertaken. This preliminary work is performed by a fire protection engineer or design/build fire alarm contractor. The evaluation will address two very important questions. First, is an upgraded

system most appropriate for the facility or should an entirely new system be installed? Secondly, what approach to upgrading the building's fire alarm system will minimize disruption to the facility's daily operations?

If building management hires a fire protection engineer to evaluate the system, the engineer will typically provide design documents, and manage the process for selecting the most qualified installer. When a design/build fire alarm contractor is hired for system evaluation, that firm should have extensive experience providing design/build services for buildings of a construction type and occupancy use similar to the building in question.

A New Fire Alarm System

Once the need to upgrade the existing system is acknowledged, the first step is to determine a systematic approach for the retrofit. The most common approach is to replace the system in its entirety and decommission the old system. This tends to be the more costly option, as it requires installation of a complete parallel system that must be fully operational, and tested, prior to disengaging and removing the old system. In some cases, this is the only practical solution due to system age and condition.

The Practicality of a Phased Upgrade

The other and sometimes more practical approach is a phased system replacement, spreading the cost over a number of years. If cost is a factor in determining which type of upgrade is most suitable, tenant build-outs can be a great opportunity to incorporate fire alarm retrofit costs into the tenant construction project. Under these circumstances, it is critical to separate the fire alarm work from the electrical work to ensure the quality and consistency of the installation and a seamless tie-in to the base building fire alarm system.

Part 2 will appear in the March 13th edition of the New England Real Estate Journal.

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