



## OFF-CAMPUS

By Tim Knisely

April 2014

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### False or Unwanted Alarms: Manual Fire Alarm Boxes

We have all heard the excuses why tenants don't evacuate their apartment during a fire alarm. Most believe alarms to be false because they don't see smoke or fire. Or, they think it is only a fire drill. Even some in the fire service have similar apathy towards fire alarms. How did they come to think this way?

Was it the frequency of malicious alarms in the apartment complex they lived in last year? Was it the state required fire drills in the residence halls? Or, was the system poorly designed or not being maintained? No matter what the cause it will be difficult to change this mindset until the tenants experience a fire. To avoid a continuation of this pattern we can look at some ways to make current or future installations better and to avoid some of the unintentional and

malicious alarms from occurring. Part 1 of this series looks at the manual fire alarm box.

In many municipalities the adopted building code will specify the type of alarm system that is required for new construction or new system installation based on the use and occupancy of the building. Then, the fire alarm standard referenced by the building code will outline the components necessary for compliance. But, this is where it gets tricky.

The International Building Code offers exceptions for alarm system components if other fire protection systems are present. For example, manual fire alarm boxes may be omitted from nearly every use group if the building is protected by sprinklers and the fire alarm will alert occupants upon the sprinkler water flow. By removing the manual fire alarm boxes I can remove the temptation

from the intoxicated tenant who is leaving a party a 2:30 AM.

Now, consider an existing apartment building that was built 10 or 15 years prior to this code change. If the building was built with sprinklers and the water flow switch causes the fire alarm to sound, can you retroactively remove the manual fire alarm boxes from this building? If the only difference in the buildings is the code edition that was adopted at the time of construction, I'd suggest that you could.

A recent case study of two similar student housing structures built using modern building codes showed the benefit of using these code approved exceptions.

- Building #1 is a 10-year old, seven story non-combustible building with sprinklers throughout, a monitored fire alarm system including



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manual fire alarm boxes located at the entrance to every exit. In a two year period the building averaged two malicious fire alarms per week during the semester. Most of these were caused by someone pulling the manual fire alarm box.

- Building #2 is a new 8-story non-combustible building with sprinklers throughout, a monitored fire alarm system with only one manual fire alarm box located at the Fire Alarm Control Unit (FACU). This building did not have any malicious fire alarm activations in this same two year period.

This is a decision for the local AHJ, the building owner and their insurance company to consider at the time of construction, or to address a malicious fire alarm problem. This needs to be looked at as a purely a risk management decision. But, we should consider all options to make the fire alarm activation an unusual event so the tenants will not ignore the warning.



Some could, and have argued that we are making a building less safe by removing the manual fire alarm devices, or not installing these during construction? You can imagine how many tenants evacuated the building that averaged eight alarms per month. When the new building had an unintentional alarm from burnt food, many of the tenants had never heard the alarm before and a significant number evacuated.





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