

Campus Fires: Prevent to Protect

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Awareness programs, community collaboration, and fire prevention technology can minimize incident numbers and the severity of campus fires.

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IT'S BEEN NEARLY A DECADE since the student-caused fire in a Seton Hall University (N.J.) dormitory killed three students and critically injured many others. The tragedy forced campus leaders to take a hard look at fire-prevention procedures and how to improve them.

"Administrators clearly saw the tragedy as an incident that could just as easily have happened [on any campus] and took steps

to evaluate and reenergize local fire safety efforts," says Paul Martin, vice president for The Center for Campus Fire Safety, a nonprofit established in 2003.

It's a job that will never be over. According to the National Fire Protection Association (NFPA), during 2003-2006 an estimated 750 structure fires in college classroom buildings and adult education centers were reported per year, on average. Since the Seton Hall fire took place, the publication *Campus Firewatch* has identified more than 135 campus-related fire deaths nationwide, with 83 percent of campus-related fire fatalities occurring in off-campus housing.

College and university leaders are turning to a combination of awareness programs and technology to keep students safe from fire.

TEACHING FIRE LESSONS

The campus is a good setting for students to brush up on their knowledge of what to do in a fire. It's a lesson that often hasn't been reviewed since the school days of "stop, drop, and roll," finds Michael Hodgson, campus fire marshal at the Georgia Institute of Technology. Teaching methods at institutions can range from fire demonstrations and mock drills to online fire safety programs like igot2kno.org. Developed under a Department of Homeland Security grant and presented by the People's Burn Foundation, that site offers facts about fire-related causes and contains videos, one featuring a male student who was severely burned in a fire.

At a recent Georgia Tech interactive fire safety fair, students saw how quickly fire can progress as a mock dorm room was ignited. They could also crawl through a smoke-filled trailer simulating vision impairment during a real fire. Approximately 300 student staff members receive fire safety training twice a year at the university.

In addition, the university's 40 Greek houses, 31 of which belong to the city of Atlanta, undergo a fire/life safety inspection every semester. House occupants get a report noting a deadline for correcting any problems. The inspector brings any problems to the attention of the Greek life office, which, Hodgson notes, ensures compliance with directives. "Some of the fraternities

have requested that we come out and teach a fire safety class, and we have done that on many occasions,” he explains. “We make sure they understand the basics and some prevention tips.”

A personalized message helps students see the importance of fire prevention, says Michael Halligan, associate director of environmental health and safety and fire marshal at the University of Utah. Talks there have covered subjects such as leaving rooms when an alarm sounds, not leaving a stove unattended, and keeping stairwells clear of debris. “Instead of telling them what they should and shouldn’t do, we use words to hopefully get them to see it from their perspective,” Halligan adds. “It’s important for them to take their own actions to prevent fires from happening.”



Gettysburg College (Pa.) officials take what David Taylor, associate director of the Department of Public Safety, refers to as a “360-degree fire prevention program.” Students see fire-related messages on pizza boxes, can win prizes by finding a hidden message in posters within residence halls, and are invited to a fire safety theme night. “We concentrate hard on first-year students,” says Taylor, noting that they tend to not be used to fire alarms and sprinkler systems or realize what’s expected of them in a residential setting.

DETECTING A CAUSE FOR ALARM

On the facilities front, institutions are increasing coverage of sprinkler systems in residence halls and installing newer alarm systems capable of reporting specifically on which device has been activated.

“Having the latest fire detection and alarm systems is vastly important to ensuring people are provided the best early notification and warning, thereby significantly improving their chances of escape and survival,” says Martin. NFPA code now requires that emergency communications systems that would be used in fires include mass notification. It provides standards for the design and installation of mass emergency communications systems incorporated for use with fire alarm systems in any type of occupied building.

Union College (N.Y.) is in the process of putting into place a new campuswide fire/life safety system with a prerecorded voice direction system, which will help occupants safely exit in a fire or other emergency. The college’s prior system could not provide advanced detection or pinpoint the location of an alarm, says Life Safety Officer Michael Hilton. It also used copper wiring, which, after being exposed to lightning, caused system troubles, false alarms, and monetary damages.

Seton Hall: A Decade Later

Following the fatal Seton Hall University dorm fire in 2000, legislation required all New Jersey colleges and universities to retrofit their residence halls with sprinkler systems. It’s a move being made by institutions across the country as well. Laura Wankel, vice president for student affairs at Seton Hall, says fire safety procedures, training, and practices have since been revised considerably.

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A 15-year plan to upgrade the fire safety systems in all residential, academic, and administrative buildings was launched in 1999. Hilton selected Honeywell's Notifier, a networked system of fire alarm control panels supplied by Alarm & Suppression. "It gives us the ability to provide multiple detection points and advance warning systems for our students, staff, and visitors," says Hilton. When an alarm sounds, the system notifies public safety, and officers can view a graphic that shows the room where the detection

device was triggered and even which part of the device set off the alarm.

Richmond Hall, a '50s-era dorm, was retrofitted in 2007 with an ONYX ExitPoint system. When a fire alarm goes off, the alarm control activates a white noise signal that gives directional commands to help building occupants pinpoint the nearest exit location.

Gettysburg has also evolved in its use of fire safety technology. All alarm systems now report to a monitoring station within the public safety department, Taylor explains. While the alarms used to have digital phone dialers, they now use fiber optic cables, which enable control from a remote location and a quicker incident response. The new system also reports when a smoke detector is dirty or has been removed. Before, students could remove the batteries from a detector if they wanted to smoke in their rooms without getting caught. Now, Taylor notes, he and his colleagues "know about it the second they remove it, and we respond and get it back up and working."

A goal of retrofitting all residence halls and Greek houses with new sprinkler systems and hard-wired smoke detectors by August 2010 has been established at the institution.

CALLING IN LOCAL ENFORCEMENT

Another stride in fire prevention has been in town/gown relationships. "Campus officials are openly involving [community] fire departments in event planning and training, and, in some areas, even voluntarily opening their doors for inspection," notes Martin.

Administrators at the University of Maryland, Baltimore County, worked closely with the state fire marshal's office during the course of fire safety upgrades. The improvements went beyond state requirements to include full sprinkler systems in all residence halls as well as new annunciator panels, which alert university police when a specific alarm goes off, in three older halls. "It gives us a higher degree of information more quickly that you can respond to," says Terry Cook, associate vice president for administrative services.

The Maryland Fire and Rescue Institute of the University of Maryland also helped out by lending a fire burn trailer for a



To crack down on the theft and damage of fire extinguishers, Gettysburg College (Pa.) adopted a scanner system to manage the status and location of 1,000 devices throughout the campus.

simulation in October, which demonstrated to students the time it takes from activating an alarm to extinguishing a fire, adds Cook.

EXTINGUISHING DAMAGE

Another preventative tool is the veteran fire extinguisher. While these devices can assist in the early stage of a fire, vandalism and theft are common. In fall 2003, the University of Utah began installing a system from en-Gauge to electronically monitor fire extinguishers in two freshmen residence halls that had a history of extinguishers being vandalized. The system is now campuswide.

“We were probably averaging about 50 fire extinguisher thefts or discharges a year,” says Halligan. The new system continuously monitors each device’s location and checks on pressure status and obstruction to access. Incidents of vandalism have dropped significantly. The system has also cut down on response time and the need to hire extra staff for handling fire extinguisher maintenance, and it provides reassurance for students and families. “That makes people feel a lot more comfortable—knowing the equipment that is supposed to be there for their use is truly there,” he adds.

In 2002, Gettysburg officials handled a similar issue by instituting a barcode system to manage 1,000 fire extinguishers in about 80 residential facilities and academic buildings. Previously, Taylor explains, officials would place tags on the extinguishers and hand sign them—but often an extinguisher “would look like no one inspected it, because the tags were constantly being ripped off.”

For around \$2,000, the college purchased a kit from BuildingReports with a palm scanner and software that assigns each extinguisher a bar code. The scanner can be programmed to store the model of the extinguisher and its location, explains Taylor. BuildingReports keeps the information in its databases, which campus leaders can download. “Every time someone wants to see a copy of the records, we can pull them up on the web, print them out, and send via e-mail,” Taylor says. In the case of vandalism, a misplaced extinguisher can be tracked to its original location and a fine administered.



At Loyola University Chicago, RealView's CommandScope Electronic Pre-Plan software helps officials quickly access pertinent information about building floor plans.

Efficiency is another benefit of the system, which replaced a hard-copy procedure of keeping track of dates when extinguishers had to be hydrotested. Now officials can project device retesting needs over time, and the time it takes staff to fully conduct building inspections has been cut by as much as a third.

ORGANIZING BUILDING INFO

Having emergency planning in one place is an essential aspect of fire preplanning. Loyola University Chicago turned to software from RealView to help establish a system to digitize pertinent information about floor plans in one location for quick access. Previously, that

information was available, but some of it only as hard copy, explains Phil Kosiba, vice president of facilities. A concern was keeping up-to-date on facility changes such as renovations or revisions in floor plans and how that would alter established evacuation plans.

The software provides university personnel, firefighters, and other first responders with immediate access to building layouts and system information. In September, the solution was installed in the Chicago Fire Department's response vehicles, and it's used for more than 71 buildings on two of Loyola's four campuses. Kosiba says officials are looking into installing the software in three buildings at the university's downtown Chicago campus as well.

Although most of them do not have campus residents, community colleges have to weigh their alarm system needs as well. A year ago, officials at Kansas City Kansas Community College installed a campuswide system that, along with handling access control and video surveillance, provides fire detection and emergency notification. Funded by state grant money, the project combined nine separate fire alarm systems into one integrated unit through a controller from Lenel Systems International.

Previously, emergency personnel would know if an alarm had gone off, but they had to check out each location to determine where it occurred and what caused it. For the first time, the institution now has the ability to detect early stages of a fire, says Brian Bode, acting associate provost of finance and institutional services.

Having integrated fire and security systems is beneficial. "A camera can look down a hallway and see if there's smoke or fire; the two systems enforce each other," says Bode. "Our ability to protect our students and our staff and faculty is exponentially better."

The Center for Campus Safety is also helping administrators get a better sense of what issues their peers are facing. Funded by a grant from the Department of Homeland Security, the center has launched Campus Fire Data, an online fire incident reporting system. Through a secure web portal, registered administrators can fill out a report on any necessary response to fires, fire alarm activation, or other action related to an emergency.

"It allows colleges to have a repository for information about their incidents that they can use to see perhaps whether or not the fire alarm in one residence hall is activating more than another one on their campus," explains Martin. "Then they can decide whether or not they need to do something with their technology."

Employing a balanced approach of engineering, enforcement, and education initiatives offers a strong offense in fire

Faculty and Staff: Are They Prepared for Fire?

It's not just students who should be educated in fire prevention. College and university employees may need to brush up on what to do in the case of an occurrence. "All too often we find that the faculty, and to some extent staff, are woefully unprepared, misinformed, or plain naive about fire safety," says Paul Martin, vice president for The Center for Campus Fire Safety.

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Resources

Alarm & Suppression,
www.alarmandsuppression.com
 BuildingReports,
www.buildingreports.com
 Campus Fire Data,
www.campusfiredata.org
 Campus Firewatch,
www.campus-firewatch.com
 The Center for Campus
 Fire Safety,

prevention, suggests Martin. “Everyone must remain vigilant, for fire [can] strike at any time, anywhere, and to anyone.”

www.campusfiresafety.org
en-Gauge,
<http://engaugeinc.net>
Firewise Campus,
www.firewisecampus.org
iGot2Kno,
<http://igot2kno.org>
Lenel Systems
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Association, www.nfpa.org
Notifier by Honeywell,
www.notifier.com
RealView,
www.realviewllc.com