CAMPUS FIRE SAFETY
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EveryoneGraduates

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High Frequency of Campus-Related Residential Fires in Early 2012

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There have already been nine campus-related, residential fires reported since the start of 2012. In this article we are highlighting those that occurred in some type of student housing.

The fires have varied in severity from just a nuisance to fatal, but each one has disrupted student life to some degree. The following is a short summary of each of the incidents that have occurred in early 2012. For the majority of these recent fires, there appears to be a pattern that directly correlates to the fire's impact on the residents: Fire Sprinkler Systems.

Major Impact Fires - These fires either caused enough damage to the building that the occupants died or were severely injured, or will be displaced for a long period of time.

Marist College - Three of six occupants were killed when a three-story home several blocks from campus burned on January 14th. The building was a total loss. The home was equipped with smoke alarms but did not appear to have fire sprinklers installed.

MARIST

Allston, Massachusetts - Several of the residents were seriously injured when they jumped from a second floor window to escape the fire in a three story house in Allston, Massachusetts on January 22nd. The building sustained at

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least $500,000 worth of damage and will be considered a total loss. A spokesman for the Boston Fire Department was unsure if the building had working smoke detectors, and made no mention of any fire sprinkler system.

Hampden-Sydney College – Two students were severely burned when a two-story building became a total loss after being ignited by a smoldering cigarette on a couch on the porch. The fire occurred on January 25th. All eight of the nine residents that were home during the fire escaped. The building was equipped with smoke detection, which had been inspected 3-weeks prior to the fire. There were no fire sprinklers in the building.

University of Wisconsin – A dormitory at the La Crosse campus at University of Wisconsin suffered substantial fire and smoke damage on January 29th. The fire most likely started in a recreation room in the basement. The approximately 300 students that lived there will have to find new places to stay for the rest of the semester. The building did not have a fire sprinkler system.

Alma Fraternity House – The TKE Fraternity house at Alma College burned due to a fire in a trash barrel in the basement on January 29th. The fire spread through the walls up to the third floor and the building is likely a total loss. The approximately 20 to 30 occupants at the time were all able to escape without injury. The occupants were successfully alerted by the building's fire alarm system, but the structure was not protected by a fire sprinkler system.

Moderate Impact Fires – These fires have caused moderate damage to the buildings, but all of the occupants escaped safely, primarily due to fire safety features of the buildings, such as fire alarm systems.

Brookline, Massachusetts – One resident sustained minor injuries when a four-alarm fire burned in a 100 year old apartment building on January 15th. It is believed that the fire started in a laundry room on the bottom floor and eventually could be seen coming out the windows on the fourth floor. The building sustained significant fire and water damage, but the fire did not spread to adjacent buildings. The building had a fire alarm system but it is not known if there was any fire sprinkler protection.

Dartmouth Sorority House – An electrical malfunction caused a fire in the second floor ceiling of a Dartmouth Sorority house on February 4th. The fire was found by one of the residents, and she successfully used the building's fire alarm system to alert the rest of the occupants. All of the students were able to escape safely, and fire crews were able to control the fire quickly and prevent it from spreading. The building sustained moderate damage, and the occupants will be temporarily displaced until the building can be repaired. It is not known if the structure had a fire sprinkler system installed.

Minor Impact Fires – These fires were controlled by fire extinguishers and/or fire sprinkler systems therefore causing little damage to the building, and even less disruption to student life.

Arizona State University, Tempe campus – A fire occurred in a recycle bin that was next to a trash bin. The recycle bin was melted completely to the carpet flooring. There was no evidence of any electrical, candles, matches, cigarettes, incense or any other material in the remains of the recycle bin. Thus due to lack of evidence the cause was undetermined as there was no evidence in the fire area, or inside the room. In addition, interviews with residents did not reveal

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anything that would have caused the fire. The entire building was evacuated.

The fire was extinguished by one of the dormitory fire extinguishers just before the sprinkler head activated. The smoke detectors in the corridor activated the

building fire alarm. In accordance with the school's emergency plan, a full evacuation of the building took place due to the smoke and the fire sprinkler activation.

According to James Gibbs, Arizona State University Fire Marshall, "all the fire and most of the smoke damage was inside room 636. There was minor smoke cleanup on the sixth floor wing and water damage on the sixth floor."

Portland State University – There was a fire in a trash chute in the 10-story dormitory which burned for a short duration on February 2nd. The fire was controlled by the building's fire sprinkler system. Although the building sustained minor smoke and water damage, all of the approximately 300 students that lived there were allowed to return within two hours after the fire.

All of the residences reviewed for this article were equipped with some form of a fire alarm system. Several of them had fire alarm systems that were monitored by fire fighting services, and others were only equipped with local notification devices. Beyond the presence of building fire alarm systems, the levels of existing fire sprinkler protection varied greatly. Not surprisingly, the impact that the fire had on both the building structure and its occupants appears to be heavily dependent on whether or not the building had a fire sprinkler system.

The fires discussed above are grouped by their severity. The fires that are at the top of the list are those that caused the most loss of life, injury or most damage to the structure. Notably, it appears that none of the buildings that were severely impacted by the fires were equipped with a fire sprinkler system. At the other end of the list are the fires that had very little impact on the day-to-day lives of the students that lived there. In both the Portland State fire and the Arizona State fire, the fire department reported that the sprinkler system in the buildings mostly put out the fire, along with the quick fire extinguisher response at Arizona State.

Out of the nine fires reported this year, three of them were in large dormitories that house hundreds of students. Two of these dorms were protected by fire sprinkler systems, and the students living in those dorms were only displaced for a few hours. The dormitory that was not sprinkler protected sustained far more fire and smoke damage, and nearly 300 students were forced to find a new place to live for the remainder of the semester.

It is also important to note that the majority of the fires occurred at night while the residents were sleeping. This can cause a substantial delay in the time required for the occupants to evacuate the building. In the case of the fires in the homes at Hampden-Sydney College and Marist College, a fire sprinkler system may have delayed the development of the fire enough that the fire alarm system could have awoken all of the occupants and allowed them to escape safely.

Unfortunately no amount of fire protection can guarantee freedom from either ignition or fire. However, just using these nine recent fires as examples, it is obvious that fire sprinkler systems are essential in campus-related residences. Fire sprinklers systems can drastically shorten the down-time of a building due to a fire event, allowing students to return to their home much sooner. The cost of fire damage to the buildings can be reduced by many thousands of dollars. But most importantly, there is no way to measure the number of student lives that can be saved.

"The Center for Campus Fire Safety (CCFS) wants to point out the necessity of fire sprinkler systems", said Tim Knisely, Member of the CCFS Board of Directors, and Senior Fire Inspector in State College. "To have residence halls without fire sprinklers today should be unacceptable to parents" said Knisely. Fire Sprinklers protect people and structures. Most people don't realize that 8 out of 10 fire deaths occur at night when everyone is asleep. Fires are also fast; they can go from a tiny flame to total destruction in as little as three minutes. Fire sprinklers can suppress and often extinguish a fire before the fire department arrives, providing additional time to escape.

CCFS reflects on this tragedy and also wants to remind everyone of the **importance of properly installing and maintaining smoke detectors and other fire prevention equipment,** in accordance with prescribed codes and standards. But let's look beyond requirements and ask ourselves what else we can do to avoid potential loss of life from fire.

- Keep a **portable fire extinguisher** on every floor – and be sure it is fully charged. A fire extinguisher is useful for fires smaller than a wastebasket. **Before using a fire extinguisher call 9-1-1 and sound the fire alarm.** If a small incipient fire cannot be controlled, or if it becomes larger than a wastebasket, exit the building immediately.
- Plan your **escape routes** - Identify windows, and doors, know two ways out and determine an escape route **before the fire**.
- Keep an **emergency escape ladder** on upper floors - plan a safe escape route for windows.
- Keep **escape routes clear** – do not allow objects to be stored in halls or stairwells.
- **Inspect the exterior door** at bottom of stairwell. It must be able to be opened without a key from the inside. **Door cannot be blocked** by snow, cars or other objects.
- **Choose a meeting place in advance** - Pick a highly visible area, a safe distance away from the flames, to meet in case of fire related emergency.
- **Be prepared** - Practice your emergency exit routes with each occupant. Practice crawling low to avoid toxic smoke from a fire. Practice feeling doors for heat before opening doors. Practice opening windows and using an emergency escape ladder.

CCFS has been documenting specific campus related fires deaths since Year 2000. Current and more detailed statistics, along with the definition of how we define "campus related fires" are always posted on the website, along with a host of fire safety resources and tips for fire safety professionals as well as students in both universities and off-campus housing. One of the resources includes a daily and ongoing listing of other fire incidents in the higher education arena.

To learn more about CCFS and its programs, visit www.campusfiresafety.org.

For additional information:

Fire Fatality Statistics and Definition:
http://www.campusfiresafety.org/firefatalitystatistics

Continual e-news -campus fire & safety:
http://www.campusfiresafety.org/News

Campus Fire Safety Resources: http://www.campusfiresafety.org/resources

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Kevin Cox is a graduate of Worcester Polytechnic Institute with a Master's degree in fire protection engineering. He completed a former internship with a design firm on the east coast providing fire defense related support to structural engineers and also has design work experience at MIT's department of facilities. Mr. Cox is an Engineer, currently employed at FIREPRO Incorporated, a fire protection engineering and consulting firm located in North Andover, Massachusetts.