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**FEATURES**

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**When Health is on the Line**

Steve Williams

As the new fall semester quickly approaches, most campus facility managers and housekeeping departments may have trouble identifying a lingering threat that could impact the health and education of thousands of students, their instructors and college personnel. However, once they recognize the situation, it is how these managers address the problem that is often most important.

**CASE IN POINT**

In 1989, the U.S. Environmental Protection Agency (EPA), regarded as this country's guardian of health and safety, was making headlines it wishes never occurred. In increasing numbers, workers at its Washington, D.C., headquarters complained the building was making them sick. Symptoms included headaches, unusual lethargy, eye, ear and nose irritations, nausea, lapses of memory and skin irritations often triggered within minutes of entering the building.

At the time, many EPA critics joked about the organization's predicament, asking how the EPA could protect the health of American citizens working for private industry if it couldn't protect its own employees. But, for those afflicted it was no laughing matter. While more and more people became ill, others dreaded to enter the building knowing they would soon be sick, too.

The way the agency approached the problem became, essentially, the organization's second problem. The EPA called in teams of scientists to methodically, scientifically and dispassionately investigate the situation and determine what was causing the problem. "But they told us they could not link the ailments to anything in the building," said an EPA spokesperson at that time.

As a result, little action was taken and the complaints were downplayed, if not ignored. Finally, the ailments became a growing epidemic causing employee morale and productivity to significantly drop. Eventually, the complaints and illnesses forced the EPA to evacuate and close the building entirely to investigate the cause and rectify the problem.

"The first thing we should have done was show more concern for our employees, instead of studying the situation to death," says the spokesperson. "Today, I would take complaints, such as this, seriously, presume there is a problem, act on the concern and communicate the steps taken. When health is on the line, people want to be updated and know when the coast is clear."

Ultimately, it was determined there were a variety of reasons for the problems in EPA's headquarters, which were all lumped together and called Sick Building Syndrome (SBS). Pollutants, harmful vapors, bad ventilation, airborne chemical contaminants, mold, fungi and mildew spores were all found to be present and presumed to be causing the illnesses.

**WHEN A RESPONSE IS NEEDED**

Interestingly, a study of office workers complaining about SBS found unhappy workers are significantly more likely to complain about building-related illnesses than more satisfied workers. The same study reported that women are more likely to complain than men, as were younger workers more than older.

"It appears the more dissatisfied you are, the more likely you are to complain," says Neil Jurinski, a consultant at NuChemiCo in Alexandria, Virginia, who indicates this can occur in offices, schools and other locations. "One person complains to another, and soon, everyone is ill and blaming the



workplace or the school.”

Keep in mind, this data does not imply that complaints should not be taken seriously. If anything, this approach has been proven wrong by the EPA's experience discussed earlier. According to Thomas Segalla, an attorney with Saperston & Day, in Buffalo, New York, “begin documenting and investigating immediately, especially if there is more than one complaint. Don't get into a situation where you should have known [there was a problem] and did nothing about it.”

Campus facility managers are also advised not to panic. In most cases, SBS-related problems, even the discovery of mold and mildew, are not life-threatening and don't require a mass evacuation as long as they are attended to quickly — as soon as the problems first present themselves. Instead of panicking, facility managers should listen closely, use commonsense, take problems seriously, investigate and follow-up with appropriate actions to eradicate the problem.

Once the cause(s) of the problem has been isolated, administrators are urged to act quickly and decisively. For instance, when employees at a large New York public library began complaining of a musty smell and headaches, an investigation revealed mold and mildew were causing the problem.

The situation was never ignored or “whitewashed” and contractors were called in quickly to re-build duct work, replace potentially damaged carpeting and building materials and clean and pressure-wash down walls, tiles, grouts and other areas in the library's restrooms.

Once completed, administrators had other branch libraries investigated for mold as well. The result: health problems and complaints were minimal, employees felt the problem and their concerns were quickly addressed, morale was bolstered and worker productivity remained high.

#### **MOLD PREVENTION: THE ROLE OF THE CUSTODIAN**

Mold and mildew are a part of nature. They can grow anywhere from the tops of a mountain, in lakes and streams, to the EPA headquarters in Washington, D.C., as we have seen. When they begin growing inside buildings, indoor air can become contaminated with allergenic spores, mycotoxins and chemical toxins — all of which can be harmful to people and other living things.

Mold spores find a comfortable indoor haven in damp areas on school campuses — such as on the walls, floors, grout and tile areas of locker rooms and restrooms. Here, they set-up colonies and begin reproducing. This is when mold spores evolve from being an unsightly nuisance to a potentially-serious health hazard.

Because mold remediation can be time consuming, expensive and often requires closing facilities for long periods of time, the best way campus facility managers can protect their schools from mold and mildew is to prevent it.

Keeping facilities dry is the best prevention. Moisture is the single most important factor that encourages the growth of mold as well as its close relatives — mildew and fungus spores. Once one area has become wet enough for a colony to develop, the contamination can spread beyond the initial wet area.

Bleach and other powerful cleaning agents have been used to help kill and prevent the growth of these spores from developing into colonies. Although they have worked well in the past, there are concerns now about the use of these chemicals and their impact on the environment today. And with new, safer cleaning technologies now available, facility managers have more options that may be more effective and healthier in preventing mold and mildew growth.

Paradoxically, although the goal is to keep areas dry, one of the best ways to prevent and eradicate the growth of mold, mildew and fungi spores in many surface, tile and grout floor areas is to use high-pressure cleaning and extraction equipment, as was used in the New York libraries mentioned previously.

Some facility managers now use machines that can pressure clean surfaces using up to 1,200 pounds per square inch (psi). This powerful pressure loosens contaminants, which are then vacuumed up and automatically pumped out leaving the floor dry within minutes.

Referred to as dual-surface cleaning machines, these machines use direct water feed and have auto-fill/auto-dumping systems so they can operate continuously without stopping. Since little or no chemicals are required, the machines are also considered environmentally-preferable.

For carpet extraction, these machines heat the cleaning solution to 212 degrees Fahrenheit at the wand tip. This improves cleaning effectiveness and improves drying time, both helping to Green carpet cleaning.

#### **TAKING ACTION**

SBS was an issue long before the EPA's own experience in 1989. The first cases emerged out of the oil crisis of the early 1970s when outdoor air was kept to a minimum to help reduce the energy needed to cool and heat facilities. But as SBS problems grew, not only were the health of building occupants affected, so were the pocketbooks of building owners. Lawsuits and workers' compensation claims mounted, sometimes resulting in huge verdicts.

We have learned a lot in the past 35 years: buildings are now constructed with improved ventilation systems; many materials used in facilities have significantly less impact on occupants' health, more knowledge about eradicating mold and mildew exists; and facility managers have learned to take building-related health complaints seriously.

We also know effective cleaning helps keep the indoor environment healthy, preventing illnesses and new cleaning technologies are now available to achieve this feat even more effectively and more

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