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Dry indoor air can be a facilities headache in winter

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What's a big problem with most New England winters, this one included?

Dry indoor air, said Mary Beth Smuts, a toxicologist in the U.S. Environmental Protection Agency's Boston office. Smuts noted that dry indoor air can ratchet up the challenge for building managers.

"Building managers sometimes do the wrong thing and add moisture to their central air, which causes mold growth. It's difficult to combat dry winter air in offices in buildings. Frankly, with the costs of energy so high, I'm afraid we'll have a repeat of the 1970s, with building owners who try to save on heating/ventilation costs by shutting down their outside air intakes."

That might sound somewhat ominous considering a report on the EPA's Web site titled "An Office Building Occupant's Guide to Indoor Air Quality," which states indoor air quality is a major concern to businesses, building managers, tenants and employees because it can affect the health, comfort, well-being and productivity of building occupants.

Studies conducted by the EPA and other agencies indicate that indoor environments sometimes can have levels of pollutants that are actually higher than levels found outside.

Indoor air quality has deteriorated since the 1970s as buildings are being constructed to be more energy-efficient; this energy efficiency translates into greater recirculation of air with a build up of indoor pollutants and decreased fresh air intake to reduce the cost of heating or cooling that fresh air, according to the American Academy of Otolaryngology web site.

"In order to maintain healthy indoor air quality, you've got to increase the number of air exchanges to keep air moving on the inside so it doesn't get stale," said Victoria Hardy, head of the Department of Design and Facilities at Wentworth Institute of Technology in Boston. "Stale air not only doesn't smell very good, it almost always (gives employees headaches) and other uncomfortable symptoms that impact productivity."

Hardy said that while sealed windows can prevent everyone and anyone from tinkering with office temperature, it's probably better to have windows that can be adjusted to cut down on HVAC usage.

Many studies done in the industrial workplace have identified a number of specific indoor air pollutants as the cause of medical problems, including cobalt, nickel, chromium, vanadium, naphthalene, isocyanates, carmine and ammonium thioglycolate.

"The challenge with indoor air quality is always trying to find the balance between a level of humidity that supports comfort in the human animal and keeps the molds at bay. It's not easy, but it's critical (in order) to keep employee productivity up and sick days down," said Hardy.

She added there are "simple things you can do in the wintertime" to strike that balance, including placing plants in offices. "Plants give off oxygen and to keep them healthy you have to give them water. They act like nice little humidifiers because when a plant expires, it puts oxygen and water into the air."

Moldy oldie

Bring up indoor air quality and conversation will sooner or later turn to mold.

Buildings in areas of continually high ambient humidity -- near the ocean, for example, or within foggy areas -- have higher mold levels. Buildings in areas with high year-round humidity have more mold than areas with four distinct seasons. In areas of the country with four distinct seasons, higher mold counts tend to be seen during winter months when heating is required.

However, in light of the milder winter weather earlier, mold wasn't a large issue, said Steve Goselin, vice president of Envirotech Clean Air in Stoneham.

"Elevated levels of mold come from water sources and what typically happens this time of year is that we have snow, and pipes and sprinkler heads that freeze, all of which lead to moisture in the indoor environment, which causes mold," he said. But moderate temperatures have essentially put a kibosh on that, he noted. "The kind of weather we've been having really has been mild and because of that, buildings aren't being impacted the way they normally are, which, in my opinion, means there's less going on."

The aberrant weather conditions do not fuel greater susceptibility to mold, echoed Kathryn Thibeault, New England facility director at Pearson PLC, a global publishing company.

"The underlying risk behind mold in buildings is water, no matter what time of year. If you're careful about keeping water contained and making sure the building envelope and pipes are in excellent condition and properly maintained, you're not likely to have a mold problem," she said.

Goselin cautioned it's also wise for facility managers to avoid lulling themselves into a false sense of complacency, especially since they might not be as busy as usual.

"There could be a cold snap and things could change. What (facility managers) should be aware of, if it's unseasonably mild and suddenly drops to 20 degrees below zero, they tend to get pointed in the direction of, 'What fire do I have to put out today?' So if the weather turns mild, sometimes other things come to the forefront and probably winterizing and preparing your building for cold weather might go on the back burner."