

Moisture plays a major role in air quality

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The air we breathe is critical to our health and well-being. While we frequently focus on the air quality in our outdoor environment, we often overlook the importance of a healthy breathing environment within our homes.

A few critical numbers make the case. According to [airinfnow.com](#), a website that provides air quality information, “On average, people take 24,000 breaths each day. Each minute we breathe about two gallons of air. That’s close to 3,000 gallons in one day.” When you consider the typical person spends the majority of his or her life indoors, it becomes clear that we need to be looking closely at the air quality within the walls of our homes.

There are several factors that affect a home’s air quality, including: off-gassing from materials and finishes used during construction; the ventilation and filtration of air; and the moisture levels within the home, which are the focus of this column.

Moisture is a key ingredient for sustaining mold growth. By allowing moisture inside a dwelling, we invite mold to grow, which can become airborne in the form of spores, and in turn diminish the air quality inside our homes. While mold spores are commonly found in the air, it is the active growth of mold that elevates the spore levels in the air to a point in which they can negatively impact our health. Moisture in a home can come from a number of sources. Most often these sources are leaks in the building envelope, leaks in the plumbing system, inadequate dehumidification and insufficient ventilation.

Undetected leaks in the building envelope are breeding grounds for mold colonies. These leaks often appear in roofs, around windows and doors and in crawlspaces and basements. Yearly inspections of your home provide a good proactive strategy in preventing moisture infiltration. This inspection should include observing your attic while it is raining; observing your crawlspace floor for puddling; and doing a thorough examination of the exterior of your home, including making sure your gutters are clean, checking the caulking around windows and doors, and seeing that the ground around your foundation pitches away from your house.

While few people would argue that we are better off without indoor plumbing, it is the introduction of water into the home that has become one of the major causes of unintended mold growth in households today. Many homes with poor indoor air quality frequently have their problems traced back to plumbing leaks. These may be slow drips behind walls or larger plumbing failures pouring substantial quantities of water inside your living space. These areas should be dried thoroughly and immediately. Make sure that the places you cannot readily see also receive your attention. If you have any visible mold growth, or suspicion of mold growth behind walls, you should address removing the mold immediately.

Heating and air conditioning equipment can be another source for high levels of moisture in your home. According to information on the NAHB Research Center’s Toolbase Services’ website

(www.toolbase.org), “Oversized cooling systems can result in poor dehumidification — although the system lowers the temperature quickly, it does not run long enough to dehumidify the home. Experts agree that abnormally high indoor humidity conditions contribute to poor air quality and may create conditions for mold growth. This is especially true in the humid regions of the U.S.”

If you think this is an issue in your home, consult with a licensed heating, ventilation and air conditioning contractor.

A large amount of moisture is generated in kitchens and bathrooms. To combat this, hoods are installed over ranges and fans are usually placed in bathrooms. It is important to make sure that these fans are drawing sufficient air and are venting to the outside of your home.

Energy Star 2011 requirements will include bath fans that pull a minimum of 50 cfm (cubic feet per minute) and kitchen fans that pull a minimum of 100 cfm. Proper installation of the ductwork of these fans is critical for these devices to work to their potential. Pinching and elbowing of the ductwork can significantly diminish the effectiveness of these valuable moisture removers. It is important to note the obvious — no matter how powerful a fan may be, it requires our efforts to make sure it gets turned on. There are motion detector/timer operated switches available for fans that can greatly increase the opportunity for removal of moisture in these critical locations.

Though we do not view indoor air in the same way we see the beauty of a new kitchen or a remodeled bath, we need to realize the value of this critical and often overlooked aspect of our everyday environment.

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