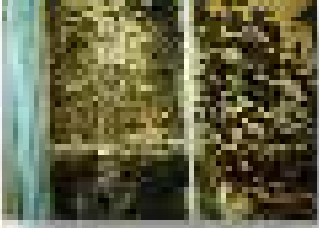


## **MOLD & THE BUILDING ENVELOPE**



**Microbiological organisms**, such as **fungi** and **bacteria**, are important components of our ecosystem. These micro-organisms break down dead material into its constituent components and as such are important participants in earth's continuing life cycle. However, if these microorganisms grow in buildings, they can adversely impact indoor air quality, create hazardous health conditions for the occupants and contribute to the deterioration of building components.

Moisture in the building envelope can cause numerous problems affecting the IAQ of a building and the longevity of building components. If elevated moisture levels persist on or inside a wall or roof assembly, these can lead to the growth of microorganisms such as **mold** and **bacteria**, as well as infestation by insects. The metabolism of mold and bacteria can create microbiological volatile organic compounds (MVOCs) that adversely affect air quality inside the building. Musty smells in a damp building typically result from these MVOCs. Spores or cellular components are allergens and if released into the building environment can cause physical symptoms and health effects. These organisms can also generate toxins that can cause health problems.

Internal moisture degradation is a leading cause of premature failure of building envelopes. Persistent moisture can lead to rot, corrosion and other forms of deterioration. Moisture induced degradation could include reduced thermal resistance and decrease in the strength and/or stiffness of materials. Moisture also supports insect infestation, ranging from mites, which are too small to be seen by the naked eye, to cockroaches and ants. Insect infestation can result in the release of fecal material and insect parts into the building environment. Moisture traveling through building components can cause corrosion of components and dissolve water soluble constituents damaging structures, i.e. gypsum drywall and mortar in masonry construction.

**Mold** requires a nutrient source, proper temperature and moisture to grow. Mold does not require light to grow. Mold is a saprobe meaning that it lives on dead organic materials. It does not produce food, but instead adsorbs nutrients by breaking down hydrocarbons. As such it will grow on any organic building material such as paper, adhesives, resins, etc. It will even grow on the patina of dust that collects on surfaces. The dust in office buildings consists primarily of paper dust and skin cells so that it provides an adequate nutrient source for mold growth. Nutrients to support mold growth are everywhere in the building environment. The temperatures required for mold growth are in the same range as indoor building environments. **The pervasive nature of nutrients and a temperature range suitable for mold growth leave control of moisture as the only practical way to control mold growth.**

### **SO, WHAT SHOULD YOU DO?**

**The bottom line is...If you are buying or selling a home, insist on nothing less than a building envelope inspection and an indoor air quality test!!!**

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