

# EHS Guidance Sheet

## Indoor Air Quality (IAQ)

Indoor air quality (IAQ) problems can result from many causes. While mold growth has received considerable attention, it is not the only cause of indoor air quality complaints. This guidance sheet discusses common causes of IAQ complaints, the steps taken in response and tips for avoiding IAQ problems.

### **Possible Non-Biological Causes**

Building and non-building related problems can sometimes result in IAQ complaints and/or occupant symptoms, such as:

- Dusts and odors (i.e., paint, tar, etc.) from renovation projects
- Pet dander carried on clothing
- Animal, bird droppings, or insect parts
- Odors from scented candles, perfumes, colognes, etc.
- Off-gassing from new furnishings, carpets, etc.
- Dry drain traps that allow sewer gases to escape
- Re-entrainment of vehicle exhaust through building openings
- Migration of odors or fumes from other work locations within the building
- Inadequate temperature control, humidity control, and/or air distribution leading to drafty/stuffy rooms
- Inadequate lighting or glare
- Rooms with too many occupants and insufficient ventilation
- Noise and vibration
- High concentration of office equipment in small or poorly ventilated work areas.
- Ergonomic stressors (e.g., improper work station design leading to headaches, muscle aches, etc.)
- Personal factors, such as stress at work or home, allergies, etc.

### **Biological Growth**

Molds and their spores are found in all indoor and outdoor environments. They tend to thrive, however, when there is an available food source and when placed in a warm and moist environment. Mold growth indoors is usually preceded by a water-intrusion event (broken pipe, infiltration of rain or melting snow, etc.). Porous building surfaces (carpeting, drywall, ceiling tiles, etc.) and other non-structural material (paper, books, cardboard, etc.) provide a food source in the form of cellulose.

Mold growth in buildings may cause or exacerbate symptoms of allergies, especially in persons who have a history of allergic diseases (such as asthma and rhinitis), immuno-compromised

individuals, infants and the elderly. However, the presence of mold indoors does not necessarily mean that people will be exposed or exhibit health effects. In order for humans to be exposed indoors, spores, fragments or metabolites must be released into the air and inhaled, physically contacted (dermal exposure) or ingested. Whether symptoms develop in people exposed to biological growth depends on the nature of the material (e.g., allergenic, toxic or infectious), the amount of exposure and the susceptibility of exposed persons. Susceptibility varies with genetic predisposition (e.g., allergic reactions do not always occur in all individuals), age, state of health and concurrent exposures. For these reasons, and because measurements of exposure are not standardized and biological markers of exposure to molds are largely unknown, it is not possible to determine "safe" or "unsafe" levels of exposure for people in general.

## **IAQ Investigation and Remediation**

In general, investigation and remediation is a joint effort between Facilities Services, EHS and the person(s) reporting the problem. If the problem is strictly intrusion of clean water with no other complaints, the remediation will usually be limited to quick and thorough drying of the impacted area. If sewage or contaminated water was involved, some removal activities (removal of wet carpets, drywall, etc.) may also be implemented.

When a health-related complaint is received, EHS will conduct an investigation. A typical IAQ investigation consists of occupant interviews, on-site physical inspection, and non-destructive testing. These steps assist in determining whether the problem is biological or non-biological, building or non-building related, transient or chronic, etc., and in establishing an appropriate remediation strategy.

Most IAQ problems or complaints can be remedied quickly. However, in complex situations (large areas of mold growth, multiple causative agents, transient complaints, etc.), it may take more time to reach a resolution. In any case, EHS will make it a point to keep building occupants informed of progress in addressing the situation.

## **Avoiding IAQ Problems**

You can help to avoid IAQ problems in your work area by observing the following tips:

- Do not block or shut vents or building returns.
- Observe UI's Tobacco Policy, which prohibits smoking on campus.
- Store food properly. Do not dispose of food waste or food wrappers in your work area. Dispose of contaminated waste in receptacles that are emptied regularly.
- Water and maintain office plants properly.
- Clean-up water spills immediately.
- Minimize accumulations of paper, cardboard and other cellulose-based materials.
- Clean your work area routinely.
- Avoid concentrating office equipment within small or unventilated office locations.

- When possible, avoid carpeting. If carpet is present in your work area, have it cleaned regularly.
- Do not burn candles or have other scent-producing materials in the work area.
- Avoid portable humidifiers.
- Contact Facilities to report insect or rodent infestations.
- Allow new furnishings to off-gas before placing them in your work area. High VOC (volatile organic compound) glues and particleboard furnishings have a tendency to off-gas.

## **Reporting Problems**

If you have an IAQ complaint and suffer related health symptoms, call Environmental Health and Safety (EHS) at 885-6524 and report the problem.

**Report all water intrusion events IMMEDIATELY to the Facilities Services Main Desk at 885-6246.** To the extent known, include information on the source and approximate quantity, affected areas, water-damaged materials and whether the source has been controlled. Clean water left for more than 24-48 hours can lead to mold growth. Events involving sewage backflows are very serious. Report the problem IMMEDIATELY to Facilities Services and do not attempt to clean or remove affected materials. Caution: Electrical shock hazard may exist during water/sewage releases.