

## **Is Your Building Sick? Six areas to monitor for indoor air quality**

A committee of the World Health Organization estimates that as many as 30 percent of new or remodeled buildings may have unusually high rates of sick building complaints. Sick building complaints refer to situations without a clear identifiable cause.

The symptoms are fairly general, such as dry mucous membranes and eye, nose, and throat irritation. These disorders lead to increased employee sick days and reduced work efficiency, not to mention lower morale. IAQ investigations often begin with the measurement of temperature, relative humidity, and carbon dioxide in order to identify a potential source of the symptoms.

For example, when inadequate amounts of fresh outdoor air are brought into a building, carbon dioxide (a gas that is produced when people exhale) concentrations may increase. When carbon dioxide concentrations increase, occupants often become drowsy, get headaches, or function at lower activity levels. The carbon dioxide is not the cause of these symptoms, but is an indicator that there may be other low levels of pollutants present.

The National Institute for Occupational Safety and Health (NIOSH) reports that poor ventilation is an important factor in many sick building cases. Building ventilation involves bringing in outdoor air, conditioning and mixing the outdoor air with some portion of indoor air, distributing this mixed air throughout the building, and exhausting some portion of the indoor air outside.

When one of these steps is inadequate or interrupted, the quality of indoor air may deteriorate. The EPA recommends that building managers and occupants or tenants work together to improve and maintain indoor air quality. Some of the areas that should be addressed include the following:

- ❑ **HVAC system operation and maintenance:** Operate the ventilation system in a manner consistent with its design. Regular maintenance and inspections are critical. Include checking louvers that are computer controlled.
- ❑ **Record keeping:** Maintain records of all HVAC system problems, maintenance and inspection activities. Document the IAQ complaints and the steps taken to remedy each complaint. These records may be useful to the IAQ investigator in solving future problems.
- ❑ **Pollution control:** Identify indoor pollution sources such as chemical usage, blueprint copiers, kitchens and break rooms. Source removal or special ventilation techniques in these areas may be appropriate.
- ❑ **Occupant activities:** Eliminate practices which may restrict air movement such as furniture placement relative to air vents and installation of new offices without relocating HVAC.
- ❑ **Building maintenance activities:** Increase ventilation rates during painting, renovation, and pesticides use. If possible, schedule these activities when they are less likely to impact building occupants.
- ❑ **Energy conservation:** Reexamine energy conservation practices with regard to indoor air quality considerations, employee health, and productivity costs. Temperature set backs and percentage of fresh air entering the system can significantly impact the air quality.

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