



University of Colorado Environmental Health and Safety Guideline

VENTILATION AND AIR QUALITY

When contaminants are generated from a localized source, as occurs with certain office and laboratory equipment, general dilution ventilation may not be sufficient to maintain contaminants at safe levels. In such cases, the contaminant should be removed at the source, before it has the opportunity to mix with the general room air. Local exhaust ventilation is needed in such an instance.

A local exhaust system usually consists of a hood or other "air capturing" device which is then ducted to a fan outside the building, which discharges the air to the outdoors. Exhaust systems for hazardous materials and air contaminants must be independent of general building ventilation. If this is not the case in your area, please contact EH&S. The capture device should be located as close as possible to the source of the contaminant and the contaminated exhaust air should not be re-circulated back into the building HVAC system.

The quality of indoor air can be affected by a variety of factors and result in health related symptoms or general discomfort. Contaminants from tobacco smoke (carbon monoxide, arsenic, particulates), building materials (formaldehyde, fiberglass, volatile organic compounds), cleaning compounds (ammonia, chlorine), emissions from office equipment (ozone, ammonia), and other pollutants (radon, molds, pollens, lead, sulfur and nitrogen oxides) all contribute to the make up of our indoor air.

Health effects may include irritation of the eyes, nose, and throat, headaches, dizziness, and fatigue. Immediate effects are usually short-term and treatable. Health effects can be comparable to those from colds or other viral diseases, making it difficult to determine if the symptoms are truly air quality related. For this reason, it is important to pay attention and note the time and place symptoms occur and any other information which may be pertinent (e.g. weather, season, etc).

Determining the cause of health related symptoms or source of discomfort can be difficult and time consuming. Following interviews with individuals experiencing health symptoms, air quality problems are generally handled on a trial and error basis, using the most logical approach first, rather than attempting to determine the exact identity of the irritant. Depending on the symptoms described Facilities Management and Environmental Health and Safety consider all the following approaches, as well as others when evaluating indoor air quality problems.

- Examining building air intakes and ducts



- *Are intakes located in the vicinity of idling vehicles?*
- Reviewing the air distribution system
 - *Do the ducts or filters need cleaning?*
 - *Is mold growing in the diffusers?*
- Evaluating the amount of fresh air being supplied to the space
- Checking for tobacco smoking in adjacent or nearby areas
- Reviewing location of office equipment
 - *Certain equipment should be located in well ventilated areas for heat removal and control of possible chemical emissions*
- Examining new conditions in the office space
 - *Installation of carpets or furnishings*
- Reviewing the use and storage of hazardous and odorous materials.