

Indoor Air Pollution

An Overview

Many of us work in buildings with mechanical heating, ventilation, and air conditioning (HVAC) systems. The efficiency and effective operation of HVAC is the major determinant of the indoor air quality (IAQ) in such structures.

High energy costs in the 1970's and 1980's encouraged the development of tight buildings and a reduction in the amount of outdoor air brought in for ventilation. In addition, building operating and maintenance budgets have been reduced to minimal levels, particularly in schools and colleges. These actions, combined with the proliferation of indoor sources of contaminants, reduce the quality of indoor air environments and consequently the health and comfort of building occupants.

TIGHT BUILDINGS AND TIGHT BUDGETS HELP REDUCE THE QUALITY OF INDOOR AIR!

Sick Building Syndrome (SBS)

a) Definition:

the class of physical complaints and symptoms expressed by a large percentage of building occupants.

b) Causes

- Inadequate ventilation— allows pollution levels of existing sources to increase.
- Bioaerosols— mold spores, bacteria, viruses, pollen, etc. These could be particularly virulent or cause violent allergic reactions.

• Indoor pollutants:

- volatile organic compounds found in building materials, furnishings and fabrics, cleaning agents, office copiers, pesticides.
- Tobacco smoke, asbestos, radon.
- Outside sources— motor vehicle exhaust fumes, toilet gas, etc., much of it due to improperly placed outside air intakes.

c) Physical Effects:

The cause of the symptoms is not known. Most complainants report relief upon leaving the building.

Typical complaints and symptoms include:

- Headache, dizziness, nausea
- Fatigue
- Eye, nose or throat irritation
- Dry or itchy skin
- Congestion, sinus trouble

Building Related Illness (BRI)

Most occupational diseases fall into this category. Their causes are clearly identifiable. They include:

- Allergic respiratory diseases—asthma, humidifier fever, rhinitis, sinusitis.
- Infections— Legionnaires' Disease, Pontiac fever.
- Skin diseases—Typical complaints and symptoms are very similar to those associated with SBS.

Preexisting Illnesses are exacerbated by indoor air pollution, flu and colds.

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