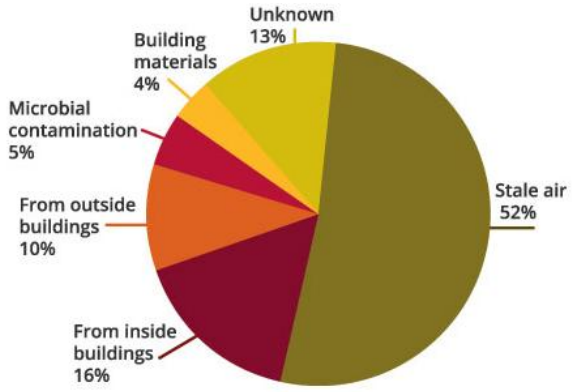
Indoor Air Quality

Your living or work space is efficient only if it's healthy.

Indoor air quality (IAQ) is a term used to define the characteristics of a comfortable and healthy space. For good health and comfort, three factors must be taken into account: Temperature, humidity, and the cleanliness of the air.

Reason for Poor Indoor Air



Most people think air pollution applies only to outdoor air. But air pollution is a serious long-term health concern in the indoor environment. In fact, the air inside your dwelling or work space could be 2-5 times more polluted than the air you are breathing outside. We spend a great deal of time indoors, so even low levels of indoor air pollution can negatively affect our health.

NIOSH: Primarily work environment; https://www.osha.gov/dts/osta/otm/otm_iii/otm_iii_2.html

Pollutants of Indoor Air

Indoor air pollutants may be particles, gaseous chemicals, and even tiny organisms.

Category	Sources of indoor air pollution				
Gases	VOC's from materials	Cleaning products	Combustion gases	Chemical fumes	Soil gases
Particulate	Tobacco smoke	Material wear	Construction	Asbestos	
Bio-particles	Mould & bacteria	Animal hair & dander	Dust mites		
Other	Outdoor air	Occupants			

Gases

A large proportion of indoor air pollutants are invisible gases. hese include pollutants such as combustion gases from our HVAC and fuel burning appliances, as well as organic gaseous compounds from furniture, building materials, household products and many other sources tabulated above. These can build up over time to health-affecting levels.

Fine Particles and Health

Particles can occur in many forms, including organic and inorganic materials, solid and liquid substances, and organisms, both dormant and living.The particles we can

actually see in a shaft of sunlight represent about 10% of those floating in indoor and are 50 microns or larger. We are in the habit of thinking that if we don't see anything, air is "clean." Unfortunately, this is not true. The great majority of particles are 3 microns or smaller. Sub-micron particles float in the air longer, drift farther and are inhaled deeper into our lungs. The smallest airborne particles go through the lungs, circulate in the bloodstream, and penetrate cell walls and enter the body's defense mechanisms causing acute or chronic illnesses.

Biological Particles

Many types of organisms share our living spaces indoors. Dust mites, cockroaches, cats, and fungi put biological dust particles into the air; these are responsible for most allergy and asthma. High relative humidity and damp conditions encourage the growth of dust mites, cockroaches, and fungi. People who are especially sensitive to biological dust are called biologically sensitive, allergic, or asthmatic, and biological particles often go unrecognized as the cause of these disorders.

Although they do not penetrate deep into the lungs, larger particles such as pollen, animal dander, house dust allergens and a variety of moulds may trigger these allergic or asthmatic responses in sensitive people. Typical symptoms can include mild discomfort, coughing, sneezing and wheezing, shortness of breath, dizziness, lethargy and in some cases, extreme difficulties in breathing.

Asbestos and Fiberglass

Asbestos is classified as a “known carcinogen” i.e. cancer-causing substance. Asbestos in living or work space can be found in boiler and steam-pipe insulation, floor tile, siding, roofing, and other building materials. When asbestos fibers are rendered airborne they become harmful. People who encounter asbestos in the workplace must be trained to recognize, and protect from exposure. Penalties are imposed in Ontario for mishandling asbestos-containing materials.

Radon

Radon is a radioactive gas that originates from natural sources such as rock, soil, groundwater, natural gas and mineral building materials. In confined lower level spaces like basements, radon can accumulate to relatively high levels and become a health hazard. Any building may have a radon problem, including new and old homes, well-sealed and drafty buildings, and homes with or without basements.
Radon is the second leading cause of lung cancer today and the number one cause among non-smokers. The risk of getting lung cancer depends on the level of radon gas in the air and the duration of exposure.

Contact us for a comprehensive assessment.