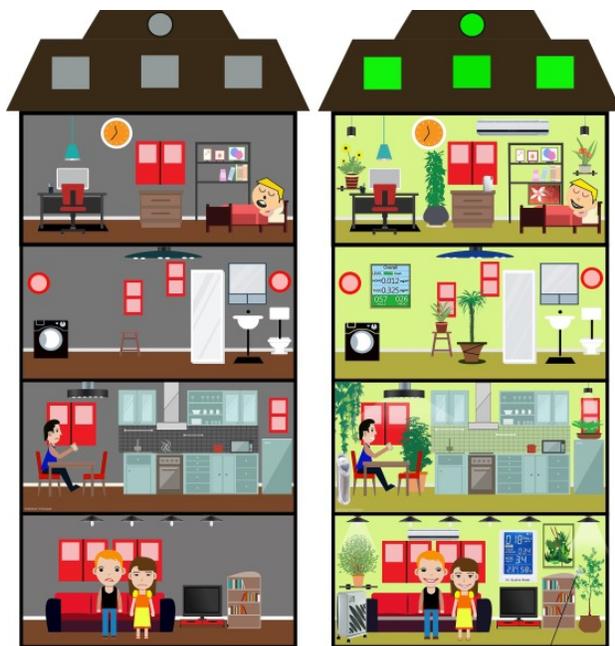


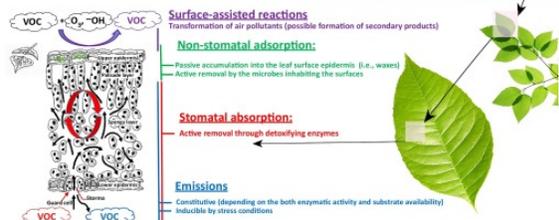
You can think of the air indoors as part of an ecosystem. In this perspective, you have to think how the air you breath, what is in it and how you live in your house are interconnected. If thought that way, you might come up with creative solutions to support catalysts for good air. Some of the catalysts for good air are circulating indoor and outdoor air (opening windows) — if the outside air is not polluted as well. Another option may be plants that help to clean the air — creating a symbiotic ecosystem between your house, it's air, the plants, animals and people living in it.

Plants to clean the air

In modern energy-saving airtight constructions, the concentration of air pollutants can build up to dangerous levels, posing a serious threat to human health. Plants can efficiently remove pollutants and improve indoor air quality. Indoor plants are typically selected on the basis of their aesthetic features rather than physiological requirements reflecting their capacity to remove air pollutants.



Indoor pollution poses a serious threat to human health. Plants represent a sustainable but underexploited solution to enhance indoor air quality. Plants can improve indoor air quality (IAQ) by simultaneously taking up CO₂ and releasing O₂ through light-dependent photosynthesis, and increase air humidity by water vapor transpired from leaves through microscopic leaf pores. In addition, indoor air pollutants can passively collect on the external surfaces of the complete root–soil system of the plant and, thus, be effectively removed.



Trends in Plant Science

Pioneer studies conducted by NASA during the 1980s successfully demonstrated that plants are able to remove airborne pollutants.

Switching out the sources

At the same time, indoor air pollution has many sources. By investigating the sources and finding alternatives air quality can be substantially improves. For example, many of our products — cosmetics, cleaning supplies — evaporate toxic gases into the air. Understanding these products as part of the air systems, you might try to find “green” and “sustainable” products that

do improve instead of polluting the air. Similarly the case for building materials. Try to think of how sources for pollution as part of the ecosystem could be changed in order to become catalysts instead of corrosives of air quality.

How can we change how we behave indoors, what kinds of products we have, and how we design our spaces (e.g. through new plants) as to change our air ecosystems in ways that supports healthy air and healthy people?

Indoor Air Quality Concerns

All of us face a variety of risks to our health as we go about our day-to-day lives. Driving in cars, flying in planes, engaging in recreational activities and being exposed to environmental pollutants all pose varying degrees of risk. Some risks are simply unavoidable. Some we choose to accept because to do otherwise would restrict our ability to lead our lives the way we want. And some are risks we might decide to avoid if we had the opportunity to make informed choices. Indoor air pollution is one risk that you can do something about.

In the last several years, a growing body of scientific evidence has indicated that the air within homes and other buildings can be more seriously polluted than the outdoor air in even the largest and most industrialized cities. Other research indicates that people spend approximately 90 percent of their time indoors. Thus, for many people, the risks to health may be greater due to exposure to air pollution indoors than outdoors.

In addition, people who may be exposed to indoor air pollutants for the longest periods of time are often those most susceptible to the effects of indoor air pollution. Such groups include the young, the elderly and the chronically ill, especially those suffering from respiratory or cardiovascular disease.

Health Effects

A number of well-identified illnesses, such as Legionnaires' disease, asthma, hypersensitivity pneumonitis and humidifier fever, have been directly traced to specific building problems. These are called building-related illnesses. Most of these diseases can be treated, nevertheless, some pose serious risks.

Sometimes, however, building occupants experience symptoms that do not fit the pattern of any particular illness and are difficult to trace to any specific source.

This phenomenon has been labeled sick building syndrome. People may complain of one or more of the following symptoms: dry or burning mucous membranes in the nose, eyes and throat; sneezing; stuffy or runny nose; fatigue

or lethargy; headache; dizziness; nausea; irritability and forgetfulness. Poor lighting, noise, vibration, thermal discomfort and psychological stress may also cause, or contribute to, these symptoms.

There is no single manner in which these health problems appear. In some cases, problems begin as workers enter their offices and diminish as workers leave; other times, symptoms continue until the illness is treated. Sometimes there are outbreaks of illness among many workers in a single building; in other cases, health symptoms show up only in individual workers.

In the opinion of some World Health Organization experts, up to 30 percent of new or remodeled commercial buildings may have unusually high rates of health and comfort complaints from occupants that may potentially be related to indoor air quality.

Understand Indoor Air

Some pollutants in the air are especially harmful for children, elderly people and those with health problems.

Most of us spend much of our time indoors. The air that we breathe in our homes, in schools and in offices can put us at risk for health problems. Some pollutants can be chemicals, gases and living organisms like mold and pests. Several sources of air pollution are in homes, schools and offices. Some pollutants cause health problems such as sore eyes, burning in the nose and throat, headaches, or fatigue. Other pollutants cause or worsen allergies, respiratory illnesses (such as asthma), heart disease, cancer and other serious long-term conditions. Sometimes individual pollutants at high concentrations, such as carbon monoxide, cause death.