

# *The Comfort Corner*



## **Building Science Pt. 4, Indoor Air Quality**

Anyone can smell the air and tell if there are indoor air quality problems. However, many air problems may not stink now but will cause one later.

There are five types of pollutants in houses:

**1. Volatile Organic Compounds (VOCs)** - cleaning products, aerosols, pest killers, furniture finishes, fabrics and building materials

**2. Particulates** - pet dander, dust mites, mold spores, dust, smoke and pollen

**3. Soil Gases** - Insecticides, liquid fertilizers, septic gases and, of course, radon

**4. Moisture-Borne Pollutants** - Moisture in the air is a vehicle for dust mites, mold, etc., although the moisture itself is NOT a pollutant

**5. Carbon Monoxide (CO)** - Comes from gas appliances, fireplaces, wood stoves, unvented kerosene heater, cars parked in attached garages, and from outside air

So sources both outside and *inside* the home can affect our quality of air. So how do we control these things?

–Eliminate pollutants from the home. A great idea in

theory, but in reality, the next 2 steps are more likely.

–Reduce the amount of pollutants.

–Separating pollutants from the living space. Detached garages, for instance.

–Filtration. Your furnace filter is a great place to start but testing shows that standard fiberglass filters remove less than 20% of all particulates.

–Ventilation. There are 2 kinds of ventilation. Passive ventilation occurs in leaky houses and when the windows are open. Therefore, in today's tight houses, we need active ventilation, such as kitchen exhausts (@ 100 CFM intermittent), bathroom exhausts (@ 50 CFM intermittent or 20 CFM continuous) and heat-recovery ventilators (HRVs) or energy-recovery ventilators (ERVs). A minimum rate of 7.5 CFM per person plus .01 CFM per square foot of conditioned floor area is needed to bring in sufficient fresh air.

–Controlling pressure. Part 1 in our series dealt with pressure balancing.

Next month - Putting it all together.