**Energy Improvement Measures that Can Impact Indoor Air Quality**

Some energy improvements can have unintended consequences for indoor air quality (IAQ) in buildings, because sealing and caulking air leaks reduces the natural ventilation rate. While reducing air leakage will help make a building more energy efficient, it can also trap airborne particles inside, including:

* Volatile organic compounds that off gas from paints, cleaning materials, and maintenance supplies
* Particulates and fibers like asbestos and fiberglass
* Radon, which is a naturally occurring radioactive material
* Allergens like pollen, dust mites, cat, and dog hair
* Microbial organisms like viruses and bacteria and fungi
* Sewer gas, if the waste lines are backing up
* Carbon monoxide from combustion appliances

Some of the materials used to make the building more efficient can exacerbate these problems. For instance, adding insulation to the building, or disturbing the old insulation. Both can increase concentrations of airborne dust, fiberglass, and even asbestos. In addition, some caulks, sealants, and paints can off gas volatile organic compounds into the indoor environment.

Caulking and sealing of penetrations in the building envelope can also limit the ability of walls to dry to the inside or outside; a wall that gets wet but can’t dry out is a setup for moisture problems and mold growth.

Finally, certain energy efficiency measures can change the building’s pressure dynamics, which can cause combustion appliances to backdraft, increasing carbon monoxide levels in the building. Carbon monoxide can be deadly gas, but the fact that it’s colorless and odorless means it can be in the air without anyone knowing it.