

You May Need More Outside Air In Your Home

My daddy never had outside air in his house, why do I need any?

If you took an infrared camera and looked at your father's house on a cold or hot day you would probably see it had many leaks to the outside. When your father's house was built, due to the low energy costs, leaking, un-insulated walls were not considered a problem. Leakage and lack of insulation in pre-1975 housing resulted in the need for larger heating ventilation and air conditioning (HVAC) equipment. In the 80's, higher energy prices resulted in many homes having their insulation, doors, and windows upgraded. That is when the problems with toxic air in homes started becoming widely noticed. Newspapers sensationalized the worst cases and the HVAC industry began looking for solutions applicable to the residential housing market. Today we have some recommended solutions that seem to resolve the air quality problems related to tight home construction.

How can regular house air become toxic?

Any air becomes stagnant if it is confined and, worse yet, if it is not circulated and filtered. When opening a refrigerator, at some point, everyone has experienced the strong odors resulting from air being held in a confined space. Picture a tightly sealed home as equivalent to a very large refrigerator. Now picture the home filling with odors from cooking and garbage, mingled with numerous chemicals from furniture, carpets, paint,

household cleaners, etc. To make things worse, most chemicals will eventually become toxic. Under these conditions it might not take long for stagnant air in a home to become harmful. Since most homeowners spend at least 8 hours a day at home breathing that air, they should take an interest in their home's air quality.

How can I get rid of stagnant air without leaving windows and doors open?

The American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE) assembled a group of HVAC industry experts to develop a nationally recognized standard called ASHRAE 62.2 Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings. The Standard provides guidance for designing HVAC systems that provide a minimum recommended amount of outside air (OA) for homes. Your professional HVAC contractor is able to utilize the ASHRAE 62.2 guidance to design a system that will meet your specific OA and filtration requirements.

How can I possibly save energy bringing in outside air?

The amount of OA required will depend on your usage, the size of your home, the number of residents and pets, and numerous

other factors. Your home is already bringing in untreated OA by default. Whenever an exhaust fan is on in your bathroom or your oven exhaust vent is turned on, or when your clothes dryer is operating, air is being pushed out of your home. This creates a negative pressure inside your home. Air will then seek to enter your home through every crack and opening until the home's internal pressure becomes neutralized to the outside. You have seen evidence of leakage if you have ever noticed a dust or dirt build up on a crack or opening. You can avoid this problem and save energy by having your professional contractor install an energy recovery ventilation (ERV) system in your home (For northern climates a heat recovery ventilation (HRV) system may be recommended). An ERV/HRV operates on a simple principle; it uses the air that is removed to heat or cool the air being brought in. For additional savings in new construction or major remodeling the ERV/HRV can be dual purposed and utilized for your bathroom and/or kitchen exhaust.

Where can I find out what OA options will work in my area?

Your professional HVAC contractor is an expert on designing and installing HVAC equipment. When upgrading your HVAC system's OA capabilities, they can provide you with the guidance you need. Professional HVAC contractors can integrate ERVs, HRVs, and economizers into a design that will provide the OA you need reliably and economically.

ACCA is the nationwide nonprofit association of professional heating, ventilation, air conditioning, and refrigeration contracting businesses. For more than 40 years, ACCA has provided education and research in support of efficient, safe and healthy heating and cooling systems. We invite you to visit us at www.acca.org.

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