

COLUMN FOR APRIL 8, 2006.
HEADLINE; VENTILATION PART ONE

I am going to suspend the usual question and answer format for a couple of weeks. Over the past number of months the volume of questions about ventilation in a home have risen dramatically and I thought a series on this subject would answer 99% of the questions received from our readers.

It is no secret that homes today have varying levels of ventilation, older homes by design simply leaked air. Windows and doors were not airtight and the exchange of air was a passive airflow thru the home. Asthma was almost unheard of at the turn of the century, but then again heavy sweaters were the norm in the winter too. With the increases in costs of heating, homeowners started to insulate and seal up their homes. This has caused a backlash in health for some people, especially children. Asthma has risen to the number one chronic illness amongst children in the USA. The Environmental Protection Agency lists indoor air quality near the top of its list of contaminants.

During the late 60's and 70's some homes added exhaust fans to the bathrooms and some laundry rooms and kitchens. Kitchen fans are usually not vented to the exterior, with a few exceptions even today. The theory was that there is enough leakage in the assembly of the home that the exhaust fans would draw the air thru the voids and exhaust it outside. The drawbacks to this system are many. The first being depressurization. This can happen when a home lacks a method of introducing fresh air. Some people are very sensitive to major air changes, causing headaches in extreme cases. Depressurization can cause a condition called back drafting. This can cause carbon monoxide and other contaminants to flow into the home instead of up the chimney of your furnace or fireplace. Normal day to day activity in the home creates numerous pollutants, pets, dust mites, mould, cleaning supplies and even smoke from candles are but a few of a long list of in-door contaminants we create in a home. If the home has no method of ventilation and has seen upgrades to make it more airtight, moisture becomes the largest issue and this can lead to mould, yet another air quality issue. Over an average winter a family can generate 400-2000 gallons of moisture into the interior of the home. Storing green firewood inside a home is not recommended. A single cord of wood can add 40-60 gallons of water alone! Maintaining a proper humidity level under 60% will dramatically reduce the growth of mould in most homes. Proper ventilation can make a considerable difference in the level of excess moisture in a home.

What can a homeowner do to increase the ventilation in his home that has no exhaust fans or possibly just a bathroom fan? The first suggestion is to install fans in every bathroom and make their use a household rule during showers and baths. You can wire the light switch to the fan so it comes on with the light. If the noise running bothers your family, replace the fan. The newer fans are considerably quieter. One method is to use a multiport fan system that is commonly set up in the attic and ducted to all the bathrooms, and possibly the laundry. You should now look into adding fresh air into the home to counter-balance the exhausted air. There are a couple of simple and lower cost methods possible for most homes. In your basement you can put an insulated section of soft duct running from an exterior hood to the floor and loop it back up with a damper fitted to the end. This is called a pitman loop and is sometimes used as a makeup air supply for your furnace. The other option is to put passive vents in a couple of spots around your home. These vents have a damper built into them that you can open and close. Go to efi.org, aldesamerican.com or panasonic.com for more info on these vents. The hesitation that some people have is they are now exhausting expensive heated air. If you have improved your insulation and sealed your home up, the actual costs of heat-loss is offset to some degree. The other downside is it's a truly manual system and the homeowner actually should set a program of operating the ventilation fans every day for a period of time. The bonus is the improved air quality in your home and reduction of health related contaminants. This is also the simplest way to ventilate a home with radiant baseboard heaters, be they electric or from a hot water boiler heating system.

If you have a forced air system for heating then there is another option. This is called a fresh air ducting system. It is actually a fixed duct that brings outside air into the return air duct of your furnace. These systems can be outfitted with a temperature and humidity-sensing damper that will limit airflow during very cold or hot

days. Every time your furnace operates it adds air from this duct to the existing air being heated or cooled. If you want to add fresh air at any time your thermostat has a switch on it that reads auto or fan. If you set this on fan mode it will run the fan inside your furnace constantly and this will activate the damper. Your furnace should continue to operate in its heat/cool mode with the fan on. This method also distributes the fresh air throughout the home through the ducting system. Adding this to your forced air furnace is not a major cost; the dampers run under 300.00 plus the ducting and installation. You still have to use your exhaust fans in your bathrooms, laundry or kitchen. This system brings in air and preheats it; it does not exhaust the stale air. These two suggestions are the most economical to install and for the majority of homes built before the mid-90s can be effective as a form of ventilation.

Next week we will cover a complete balanced air system, their costs and benefits for any home. I am assembling a package of booklets from various government agencies and companies who have expertise in the ventilation field; once I have them together I will make the package available.

Last week I asked what an eyebrow was. The answer was A) a type of window head. This was used as a trim above windows in homes built during 1860-1890, the architectural style was known as Second Empire. This week I ask, what is "hammer dressing?" is it A) a method of distressing wood. B) Foundation stones squared with a hammer C) a style of heritage plastering for exterior corners. The answer in next week's column.

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