

COLUMN FOR APRIL 30, 2005.
HEADLINE; BUYING AN HRV

Q; We have decided to improve the air quality on our home. We installed new windows and added insulation to the attic last year. We got a lot of condensation on the windows this past winter even though our home is electric heat. Our heating company suggested an HRV would help. What should we look for when buying one and during installation?

A: Installing a Heat Recovery Ventilator (HRV) by licensed and skilled tradespersons can make a considerable difference in the air quality of a home. It is not uncommon that the age and design of some homes permit the occupants to produce a certain level of undetected moisture. This moisture then transfers to the exterior, however when better insulation and windows are installed, this will often affect the exchange of this moisture-laden air in the home. Excessive condensation is not recommended, it permits mould growth and any number of impurities that have escaped the home previously will now remain inside. My first suggestion to the reader is invest in a hygrometer. This is a mechanical device that measures the level of humidity in the home. We like to see a home remain in the 40-60% humidity range. If your windows have considerable condensation and the hygrometer constantly remains over 60%, these are prime conditions for mould. Your heating technicians recommendations may be well founded if he is trained in air quality and has seen the conditions you describe.

Our reader is going to need a full duct system installed in their home. It should have exhaust grills in the bathrooms, kitchen and laundry room. The supply air should be in the bedrooms and living spaces. If you have a forced air furnace, you would use the return air duct in the furnace. You can put both the supply and exhaust ducts to the return air but it is not as effective as a separate exhaust duct system. I recommend our reader have individual controls installed in the bathrooms, kitchen and laundry room which would allow them to increase the air volume. HRV units have two speed fans; they generally operate on low speed and for increased ventilation during cooking or showers can be increased to a high speed using the individual wall controls. Once your system is installed, the technician will balance the system for CFM or cubic feet per minute. This will ensure your home is not incorrectly pressurized.

I recommend our reader shop around for prices, a full system as needed here could easily reach the 2-3000.00 level and if access is limited by a finished basement, it will be higher once the holes in the walls and ceilings are repaired. What are the key points to look for in a properly installed system? The duct runs should be kept as short as possible with a minimum number of elbows. The entire system should be inside the heated envelope of the home. HRV units have a certain vibration to them; they hang on chains with spring supports. Do not install near a bedroom or a reading area. The HRV should have easy access for service. Most units have two filters, the secondary foam ones that should be cleaned every month and the primary core that should be cleaned at minimum twice a year. The external supply hood should not be located where exhaust gases, dryer vents or septic vents are present. They should be 18" off the grade and the supply/exhaust vent hoods should be a minimum of six feet apart. Make sure the proper screens are installed to prevent birds or rodents from entering. The exhaust air should not be discharged to a crawl space or attic. All of the joints in the ductwork should be properly taped. The ducts supplying the fresh air and exhaust air to the HRV must be insulated, to a minimum of R4. Most installers use the black insulated flex duct. The balancing dampers are installed in the metal duct side of the duct system, usually just outside the actual HRV cabinet. The metal duct can be supported with plumbers wire, but the insulated soft ducts used for supply/exhaust should be supported with wide metal bands no less than 1 1/2 to 2" wide. The entire system should be secured snugly or separated by vibration damper material if necessary. Lastly the HRV is not designed to supply combustion air for the furnace or any fossil burning fuel appliance for that matter. Care to ensure a wood-burning stove has enough make-up or combustion air is also important. Make sure your installer understands how often you use your wood stove. Some type of additional make-up air source may be needed in the home.

The last four homes I built and the one I presently live in have an HRV installed, I get it serviced and balanced every year. We often get comments from visitors, especially in the winter, how comfortable our home is. In my opinion these systems should be mandated in newer homes, hopefully in time.

Now the answer to last week's question. What is tuck-pointing? The answer was C) a method of filling mortar joints to provide a tooled joint. Now this week's question. What is an astragal? Is it A) a fitting used in an antique wall closet toilet. B) A heritage ornamental moulding C) a style of gingerbread trim D) a forged metal accent used in heritage hardware. The answer in next week's column.

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