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HEADLINE; VENTILATION PART TWO

Last week we covered basic ventilation for a home, from an exhaust only system to a manual supply system. These are the most common methods of air exchange in 90% of the homes today. While any form of ventilation is beneficial, in a newer home or one that has seen recent extensive upgrades in insulation and sealing to the building envelope, the best method is to install a balanced system. The term many people know is Heat Recovery Ventilation System or HRV as it is called. This system was introduced as a requirement for R2000 Homes.

An HRV is a mechanical device that continuously recirculates the air in your home. It brings in fresh external air that replaces the stale indoor air. These devices have filters installed in them, usually two kinds. The secondary filters capture the particles in the air and the core filter captures some air contaminants and also retains a portion of the heat from the stale air being exhausted. This is used to heat the fresh air entering the home. The HRV's core warms the incoming air and can recapture up to 80% of the energy that would be lost using an exhaust only or manual supply system. There is also another design called the Energy Recovery Ventilation System. This style of ventilation device can recover some moisture as well as the heat that would be exhausted from a standard HRV. An ERV would help to maintain a comfortable humidity level during the winter. In the summer months an ERV will help keep the excess humidity out of the home, reducing the load on your air conditioner. This translates into a cost savings on the operation of your air conditioner.

Can an HRV or an ERV be used in an existing home? The answer is yes with some qualifications. There are different methods of installing one of these systems. The direct ductwork system is a completely separate duct system. This is used when the home does not have a forced air heating system. Examples of this are electric radiant baseboard or a hot water boiler using radiators. The duct system supplies fresh air to the living room and bedrooms and exhausts the stale air from the kitchen, bathroom and laundry area. If the home has a forced air heating system, there are two methods of installing an HRV. The optimum method is to install the HRV fresh air supply duct to the return air duct of the furnace. The exhaust ducting is installed as a separate duct system that is located in the bathrooms, kitchen and laundry. Most HRV systems have a wall switch located in each of these rooms that will active the high-speed fan for a prescribed period of time. This should be used when showering or doing the laundry. I am a firm believer in a direct exterior vent fan in the kitchen to supplement the HRV, especially if there is a large dinner being prepared. This ducting system is usually installed in new homes. In a retrofit it would require some removal of wall coverings, drywall for example, in order to install the ducting. If the basement is finished this can be an expensive installation. I have heard prices ranging from 1400.00 to 2000.00 to install a full duct system, plus any removal of drywall and repairs. If your basement is finished, there is another alternative. This short loop method must have access to the return air supply duct in the furnace. The installer will route the exhaust air duct some distance from the furnace and then attach the fresh air duct just above the filter. While it is not as effective, it is a reasonable alternative.

If you decide to install an HRV, find a reputable TSSA licensed heating contractor who has completed the HRAI Certification course as a residential mechanical ventilation installer or the courses available from the manufacturer for the units they install. They should do an estimate on the size of HRV you will need, based upon the number of rooms in the home. A 3 bedroom home with two bathrooms and an unfinished basement would need a unit capable of 120 CFM when operating on its high speed.

In the USA they recently introduced a ventilation standard. The American Society of Heating, Refrigeration and Air Conditioning Engineers recommend a whole house system of some design operating at 50 cubic feet per minute of ventilation. Bathroom fans should be a minimum of 50 CFM and calculated over and above the base ventilation standard. This type of minimum ventilation standard is long overdue. Indoor air quality has become an important consideration for every home. It can and does affect peoples health, remember, we

are what we breathe. Removing the air contaminants that are created from every day living should be a major consideration in every home. If you install an HRV, like your furnace these systems need service, air balancing and maintenance. The filters need to be cleaned and/or replaced on a regular basis.

By mid-May I expect to have accumulated a package of information on home ventilation. If you would like to be put on the list to receive this free package once it is available, send me e-mail with your land address.

Last week I asked what was "Hammer Dressing?" the answer was B) foundation stones squared with a hammer. This week I ask "What does 'clinch' mean?" is it A) term for bending over nails B) a type of gang nail plate used on trusses C) a method driving nails across each other to tighten a butt joint. The answer in next week's column.

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