



Sustainable Housing: Lungs for Your Home

Stale air, lingering odours and high humidity can happen in the best of homes and, sometimes, simply opening a window can bring relief. When it's mild outside and there's a breeze, opening a window can be beneficial. But in Canada's hot and cold climate, this is not always practical or possible.

Leaving a window open in mid-winter will add to your space heating costs, cause uncomfortable drafts and the window may freeze open. You also can't filter the dust out of the air nor can you recover any of the heat that flows out an open window. Sometimes leaving a window open is a security or noise concern. Finally, you can't control how much air enters through an open window or where it goes once it's in your house.

Heat Recovery Ventilation

Fortunately, there is another way of bringing fresh air into your home that is energy efficient, secure and highly effective – a heat recovery ventilator (HRV). HRVs are suitcase-sized appliances that typically have one fan to bring in outdoor air and another fan to push out the stale air. Heat is transferred from the outgoing air to the incoming air by passing the two air streams through a heat-exchange core, helping to reduce heating costs. As the two air streams are kept separated, only the heat is transferred to the incoming air. In a sense, an HRV can act as the lungs for your home.

In houses with baseboard or radiant heating, the fresh air from the HRV is delivered directly to the bedrooms and the main living areas through a dedicated duct system. At the same time, the HRV draws stale air from the kitchen and bathrooms and sends it outside.

In houses with furnaces, it's not uncommon to find HRVs connected to the furnace ductwork system. The furnace then operates continuously to circulate the fresh air around the house, while bathroom fans and kitchen range hoods provide back-up ventilation as needed. HRVs have multi speed settings to deal with varying ventilation needs. Automatic controls are available as well to modulate the operation of the HRV as needed.

HRVs are built into energy efficient new houses to reduce air leaks, and heating and cooling costs, and keep your home more comfortable. Cutting down on uncontrolled air leakage also helps protect your roof, walls and basement from moisture damage. The better sealed a house is, however, the more it needs controlled, energy efficient, mechanical ventilation to provide the indoor-outdoor air exchange required to maintain healthy indoor air quality. By eliminating random air leaks in existing houses and adding heat recovery ventilation, you reduce your heating bills while maintaining as good, or better, indoor air quality.

Installation

Although you can buy an HRV at some home improvement stores, it may be preferable to have it designed and installed by a qualified contractor certified by the Heating, Refrigeration, Air Conditioning Institute of Canada or other training organizations in accordance with current building codes and standards. It's very important to measure and balance the supply and exhaust airflows to ensure the HRV does not potentially create dangerous house depressurization or pressurization problems. This should be carried out when the HRV is first installed and should be checked regularly afterwards by a qualified contractor in accordance with the manufacturer's instructions. Look for units with lower energy usage and high energy efficiency in the heating season, preferably choosing from those with an ENERGY STAR® rating.

To learn more about other sustainable technologies and practices that can improve the performance of your home as well as information on owning or buying a home, call Canada Mortgage and Housing Corporation (CMHC) at 1-800-668-2642 or visit www.cmhc.ca.