

# Understanding Energy Star: Heat Recovery Ventilators

By Stacey Hawkins

Many people know that buying an Energy Star home will save them money on their utility bills, and reduce the negative impact they have on the environment, but to understand why Energy Star homes are the way to go when purchasing a home, it's vital to understand what makes these homes truly more efficient.

Despite the popular myth that creating an Energy Star home is all about increasing a home's insulation, an Energy Star home is essentially a system, made up of many different components that work together to achieve not only energy efficiency, but a healthy, comfortable home.

Throughout the *Understanding Energy Star* series, Victor Fiume, general manager of The Durham Group and past president of the Ontario Home Builders' Association (OHBA) will explain the components that create an Energy Star Home, including Proper Sealing of the Outside Walls and Roof, Furnaces, Heat Recovery Ventilators (HRVs), Windows, Appliances, Below and Above Grade Insulation, Framing Techniques, Furnace Ducting and Return Air Systems, and Passive Solar Energy Techniques. Homeowners in the resale market



can also reap the benefits of energy efficiency by incorporating some of the components into their homes.

This week, the focus is on Heat Recovery Ventilators (HRVs).

Did you know that indoor air quality is generally significantly worse than outdoor air quality? A Heat Recovery Ventilator is used to remove moist, stale air from the home and to help control the levels of humidity to prevent mould and the deterioration of building materials. The HRV captures the humid, stale air

from bathrooms, kitchens and laundry rooms and exhausts the inside air outside, and draws the same amount of outside air into the house. The incoming air is heated by the air that is being expelled. It heats the incoming air to as much as 70 percent of the inside temperature, meaning the furnace does not have to work as hard to heat the air. Most HRVs work together with the furnace fan and ductwork to distribute the fresh, conditioned air through out the house.

Every home needs a flow of air from the outside in order to function properly. Air flows from a positive pressure area to a negative pressure area; this means that whenever you use a clothes dryer or a range hood you are



bringing air in from the outdoors into the house. In older conventional homes, most of the air that is lost or gained is lost through holes in the house that lead directly to the outside. In newer (20 years old or less), the homes are sealed more tightly and this can lead to drawing air from more unhealthy sources such as through dryer vents or hot water tank vents. By using an HRV, not only is the amount of air coming in and out of the house controlled, but it is heated naturally, using the air that is being expelled from the home. The Heat Recovery Ventilator is used on a continuous basis, and eliminates the humidity and condensation in the home. HRVs significantly reduce the amount of dust, germs and allergens

in the home. They have adjustable controls, which can be set according to your specific needs.

The Heat Recovery Ventilator has a filter that can just be washed instead of being replaced.

Energy Recovery Ventilators (ERVs) are upgraded heat/cool transfer cores, which take the place of conventional HRV cores, for use in the summer months. Instead of heating the incoming air, as is the case in the winter, these cores cool the incoming air and thus reduce the amount of energy consumption of the air conditioner, while keeping the air in your home fresh.

**Next week: Windows.**