

Understanding Energy Star: House Sealing

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 Durham Homes 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 sealing the outside walls and roof systems, and the importance of controlling the air in a home.

"It's hugely important to control the amount of air which flows into and out of your home" says Victor.

In order to control the flow of air in a home, the home must be sealed tightly. Even though today's homes are built to much higher standards, most homes built only to the Ontario Building Code (OBC) leak like a sieve, and can be drafty. Air comes in around the windows, through openings in the ceilings, and other areas that are

not sealed properly.

As Victor explains, controlling the air loss or gain in your home is based on the basic principles of temperatures and pressures. Hot air does not necessarily rise, but it does move towards cold surfaces and air always moves from a positive to a negative. If the air pressure in a home is balanced, the outside air will not come in. This means that the conditioned air (air that has been heated by the furnace or cooled by the air conditioner) remains in the house, and that the furnace and air conditioner do not need to work as hard to maintain the inside temperature. By working less, the furnace and air conditioner use less gas and electricity, saving the homeowner money while making the home more comfortable.

To prevent drafts, Energy Star homes are tightly constructed uses techniques such as wrapping the outside of walls with Tyvek to prevent drafts. Energy efficient Home designs include knowing where the mechanical systems will be located, and how best to seal



Victor Fiume, general manager of Durham Homes and past president of the Ontario Home Builders' Association (OHBA).

and insulate these areas properly. While standard drywall is used in the construction of an Energy Star home, bottom plates are sealed and caulked to prevent air passing through. Overall, building a home that is tightly sealed means taking the time to ensure that even the smallest details are constructed properly.

Next week: **Furnaces.**