

Testing green technology

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Hugh Heron is putting his money where his sales pitch is — more than \$75,000 of it.

The venerable and iconic GTA builder is beaming as he shows visitors around the Heathwood Green Home on Coon's Rd. in Richmond Hill, pointing out the low-energy lighting and the high-tech touch screen LED panels, which show at a glance how much energy the home is consuming and where.

"I don't care if people come here with no intention of buying," he purrs in his Scottish brogue. "I just want to them to see the possibilities and to raise their awareness."

The thing about this model home, though, is it's not just about selling houses.

Certainly none but the most avid environmentalist with deep pockets could splash out for a home like this with all the cutting-edge eco bells and whistles.

It serves not only as a showcase for the concept and the technology now on the market, but Heron wants to put environmentally-friendly construction and home system management systems to the test and he's going to bet his own money to find out where to get the best bang for the buck when it comes to investing in energy friendly systems.

So, for the next three years a team of Ryerson students, working with Heathwood Homes, will use the house as a live test lab to determine what works and what doesn't when it comes to containing energy costs and limiting a homeowner's carbon footprint.



TRACY HANES PHOTO

Hugh Heron, president of Heathwood Homes, talks during the launch of the Green Home eco project in Richmond Hill.

And, as you might expect, Heron's also inviting buyers to look at the menu of eco-tech options and decide if they want to place their own bets with him when they buy their next home.

On the outside, the model home looks pretty much like any other in the Woodlands development, which features more than 60 homes in 16 styles, including the 50-foot lot and Oakdale model with 3,626 square feet at \$778,900 and the 35-foot lot Forester with 2,162 square feet at \$536,900.

The eco model home differs only in that it is among the largest models and the driveway and walks are made of permeable interlocking stone (meaning rain water drains through and into the aquifer and doesn't run off into the storm sewers) and, though they aren't installed yet, there will be photovoltaic panels on the roof to join the discrete passive solar panels.

Inside, at first glance, it's not much different, either. It's spacious, with 9-foot ceilings with a second floor round balcony creating an atrium effect in the foyer. And the living room has a wonderfully coffered ceiling. There's also a lot of area on the third floor.

On closer inspection, however, there are many features you won't find in the average home.

All the homes at Woodland are built to EnergyStar standards, meaning they have features like more attic insulation (R52), highly efficient windows and doors, better insulation and vapour protected walls, an HRV (heat recovery ventilator, which warms or cools air as it's exchanged from the outside), high-efficiency furnace and air conditioning, fully insulated basements and sealed ductwork.

In and of itself, it's all laudable, though a cynic might point out that that's what the market is demanding at this level these days.

For one, the list of "eco" options: Hepa filters (\$1,000), insulated garage doors (\$500, grey water system (\$500), energy recovery ventilators (\$1,000 over the cost of a standard HRV, Zero) and low emission, VOC paint (\$500).

Other options include an in-home monitoring display provided to allow real-time information on energy use, rough-in for future solar power panels, dual flush toilets, motion detector light switches in all bathrooms, fiberglass shingles, tankless water heaters and energy efficient lighting.

Heron knows future generations will continue to demand more eco options on their homes and that's what's motivating him to stage this three-year comparative study.

"You know, sometimes we don't recognize the biggest social changes around us until we stop and look back," says Heron. "What's been one of the biggest social changes? Think about it. Smoking. But you don't think of it at first."

It's the same with energy conservation and the environment, he says, and that's why this project is important.

His right-hand man on the project is Bob Finnigan, COO of Housing at the Heron Group of Companies and the 2011 president of the Ontario Home Builders' Association, himself a Ryerson graduate who cooked the plan to work with his alma mater.

"These CFL (compact fluorescent lighting) and LED lights are state of the art," says Finnigan leading a tour of the

home. "They cost \$40 each today but by the time they need replacing that cost will be down dramatically. They use far less energy and they have a lifecycle of 25,000 hours."

What they've done is build the Green Home to the max, incorporating just about every gadget on the market to demonstrate green can look good as well as be good.

The heart of the system is a rack of computers with a tangle of Ethernet cables in the basement which is constantly receiving consumption data from monitors around the home and then sending it back to California, where another set of computers analyze it to send back to screens placed around the home. It cost about \$35,000 and it's the key to the three-year study since the mass of data it gathers will be used to determine what works best and what doesn't.

While those big screen TVs and smaller wall monitors will doubtlessly get the attention because they show instantly where energy is being consumed and what it's costing under the time-of-day metering plan, there are many other features which are also worthy of a look.

The home uses bamboo and natural stone flooring, PET carpets made from recycle pop bottles, passive solar panels which pre-heat hot water to save energy, a twin furnace HVAC system, which allows homeowners to set temperatures for different floors or zones independently, and insulated floors in the basement (under the concrete).

In the basement, Finnigan points to a large vertical plastic tank with pride: "Takes the grey water, from doing the dishes, showers and baths, and collects it here. The system adds a little chlorine to purify it and it can then be used to water the grass, garden or wash the car."

Grey water systems can save much of the 30 per cent of water flushed down the drains, which allows savings to compound since homeowners usually pay a blended rate for water and sewer service based on their overall usage.

In about 18 months, the Green Home will go up for sale and part of the deal with the new homeowners will be to agree to continue monitoring the energy use for another 18 months to get a real-time look at how a real family uses energy in the real world.

Then, the team will compare the results and make suggestions as to what system make the most sense for both the marketplace and the builders to offer.