



A project of the Eden Mills Millpond Conservation Association Inc.

Media Release

New House in Eden Mills Reflects Going Carbon Neutral Goals!

January 5, 2015, Eden Mills...When Les Zawadzki and Linda Hendry, long-time supporters of the **Going Carbon Neutral Project** decided to build their new home in Eden Mills, they wanted to incorporate many of the 'green technologies' they had been introduced to at various workshops hosted by the Initiative. Les spent hours researching and gleaning info from local experts, **architect Charles Simon and engineer Richard Lay**. Many stages of their home they built themselves and they oversaw any trade-work. Along the way, they introduced a few trades, *and* the local building department, to some new greener technologies.



Eden Mills Going Carbon Neutral was launched in 2007 and residents have been making changes to their energy use ever since, with conservation of energy as their first priority. **Rogers Guelph Talk Local** features the project and some of Guelph's innovative energy-minded projects this Tuesday, January 6 at 7 pm and throughout the week. The new Eden Mills house sets the standard, exceeding building codes in many instances and adding operating energy- and money savings into the bargain.

The many energy-saving ideas started **from the ground up** with an extra layer of insulation under the heated concrete slab floors - **doubling the code requirement from R10 to R20**. In addition, a vertical layer of rigid foam insulation creates a thermal break around the perimeter of the slab.

In creating a **continuous thermal envelope** they paid extra attention to sealing and insulating critical areas where foundations joined walls and walls joined roofs, including the use of spray foam insulation



Walls are 2 x 6 construction on 24" centers, insulated with Roxul batts. In addition, an exterior layer of foil-faced rigid foam insulation minimizes thermal bridging and **increases the R value of the wall assembly from code-required R-22 to R-40**.

The couple also decided to spend the extra money for **triple glazed windows**, summing it up: "Why go to the extra expense of a big puffy coat if you are going to keep it unzipped!"

The **roof deck** is sprayed from below with high density polyurethane foam and a further 5 and 1/2 inches of **Roxul provide a total value of R-62. Code is R-40**.

Spray foam at rim joists and knee walls provides a continuous seal with the roof deck. The **roof** is finished with aluminum tiles which were chosen for their longevity. Over their service life, metal roofs embody much less energy than asphalt shingles and avoid the landfill load of asphalt shingles.

www.goingcarbonneutral.ca



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The site of the home was not optimal for taking advantage of passive solar heating but Les and Linda chose a plan with front porches to provide shade on hot summer days. Inside, cellular window coverings provide additional cooling, and keep their home warmer on cold winter nights.

The propane **hot water heating system, in-floor** on the main floor and radiators upstairs, is zoned to allow rooms to be heated as needed. But a central wood stove can also keep the house warm. The same water heater provides domestic hot water to plumbing. Two energy recovery ventilators provide all building exhaust and fresh air supply for good indoor air quality.



also

The first winter spent in the home, one of the coldest on record, put this house to the test. It performed as hoped, passing the ultimate 'Ice Storm' test - losing only 5 degrees after 2 1/2 days without heat.

On hot and humid days an air-to-air variable refrigerant flow heat pump is ready to cool the upstairs rooms and cool concrete floors keep the downstairs at a comfortable temperature.

The **10 kW solar PV array on the garage generates about 12,000 kWh per year**, more electricity than the average Canadian home consumes in a year.

All wastewater is treated on site to tertiary quality (more than 90% reaction in solids and organic matter) with a Waterloo **Biofilter**.

Rainwater is captured off the roof for watering Linda's beautiful gardens. Water for drinking is provided by a well drilled into the limestone bedrock, filtered and UV sterilized.

Beyond the satisfaction of building their own home, the couple wanted to show their children that by building 'greener', they had tried to do their part for the planet by reducing their need for fossil fuels.

"Some people see the big van in our driveway then scoff at the solar panels on our garage and our over-built house, but it's not an 'all or nothing' scenario. You don't have to go to extremes and walk everywhere or build a greener house to change your life's CO2 footprint. Start by changing a light bulb, or putting on a sweater and turning your furnace down a couple of degrees. However small or large your part may be, every little bit helps."

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Photos attached.