



Media release

Attention: Home, energy & environmental reporters

Living LEED Platinum in Newmarket

Newmarket Family's home is the first to be Platinum certified

NEWMARKET, ON November 4, 2009: In a ceremony attended by the Honourable George Smitherman, Deputy Premier and Minister of Energy and Infrastructure, the Dunlop family celebrated being the first of 34 families to have their new homes certified to LEED® Platinum specifications. They, along with all the homeowners in the Rodeo Fine Homes community in Newmarket, have waited patiently for the fact-checking, verification, and paperwork proving that their homes are among North America's greenest.

Shelagh Dunlop is an elementary school teacher who teaches her students to take care of the environment. While she does consider herself to be fairly green, she acknowledged that it's not always easy to live that way. However, she added, the effort is worthwhile. "You get a unique opportunity to make a lasting difference when you buy a new home. It's your chance to get it right, because your choices will have a lasting impact for many years. So, we invested in the greenest home we could find." Her husband, Denis, who works at a local home improvement store, said he regularly gets questions about how to improve energy efficiency. "Now I give customers examples from my own home; I guess I'm just walking the talk," he said. The Dunlops have chosen to live in one of Canada's greenest homes.

Minister Smitherman used the occasion to celebrate concrete action and green leadership, noting that these homes are an example of the new green economy in action. "I am very encouraged by the green leadership shown by the municipality and these homebuilders to meet growing consumer demand for energy efficient homes," said Smitherman. "At the same time it meets our collective goal of fostering a culture of conservation."

"The scrutiny that goes into a LEED certification is rigorous and, even though we were confident that the homes would meet the platinum level, it's really satisfying to get that certification," said Frank Mauro and Vince Naccarato, both principals at Rodeo Fine Homes. "While others have chosen to build a single green show home, or even a demonstration home, we have made LEED Platinum our minimum standard; and I am really happy to be here celebrating all our homeowners, because they understand the importance of this project and are investing in a better way of living," he added.

Some of the advanced green features of these homes include: rainwater collection with underground storage to flush toilets and irrigate gardens, superior insulation levels (including spray-in foam insulation in the walls), air-tight construction for added draft-proofing, heat recovery ventilation, drain water heat recovery, high efficiency appliances and lighting, ultra low flow bathroom fixtures, sustainably harvested (SFC) wood, low VOC glues and finishes, and solar air and solar hot water arrays.

"The Dunlop family and all the homebuyers in this development have made a conscious choice to get a very green home. The market is ready for these kinds of projects," noted Newmarket Mayor Tony Van Bynen, who attended the event along with most of the town's council. The project was a partnership between the town and the Rodeo Fine Homes. "Newmarket strongly supports green development and smarter growth, and we are proving to the rest of the country that building much greener is not only possible, but its smart business," Van Bynen added.

LEED has eligible points in six performance categories: Location and Linkages, Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, and Indoor Environmental Quality, and offers additional credits for Innovation and Leadership. On this scale, a typical new suburban home would get only 15 points, well below any

of LEED's four achievement levels: Certified at 45 points, Silver at 60 points, Gold at 75 points, and Platinum requires 90 points.

The upgrades in these homes have a significant energy and environmental impact, with more than a 60% reduction in energy use and green house gas emissions. Homeowners will save an average of \$250 per month on their utility bills. The Rodeo Fine Homes development is just south of Mulock Drive, between Bayview and Leslie, near the new Magna Recreation Centre. While the project is over 65% sold, some prime lots are still available. Purchasers can choose from single story or two storey designs that range from 2200 to 3500 square feet on 40, 45, and 60 foot wide lots and **all** the homes in this, the GTA's landmark green community, will be certified as LEED Platinum.

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® LEED, which stands for Leaders in Energy and Environmental Design, is a global sustainable building rating system that was developed and operated by the building community through the various Green Building Councils throughout the world. The process was open, consensus-based and made up entirely of volunteers. LEED's mandate is to encourage and accelerate the global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria. The Canada Green Building Council has set a target of influencing 1 million green homes by 2030.

What does it take to reach LEED Platinum? Below is the short list of the key features of these homes:

1. Renewable Energy and Conservation Measures

Increased insulation levels throughout the "building envelope"

- R50 in the attic
- R19 in the above ground wall cavities
- R7 rigid insulated sheathing over the walls
- R31 air tight spray foam insulation in garage ceiling
- R22 on basement foundation walls
- R10 under the basement floors

All of these upgrades comprise the most cost effective way to save energy and improve comfort in a new home. Like adding a warm blanket to your house, these "envelop" insulation upgrades are a prerequisite for many of the homes' other green home features and provide a lasting legacy of energy conservation for a home.

Exceeds ENERGY STAR® for Homes minimum energy efficiency levels

ENERGY STAR for Homes set the standard for new home construction in Ontario, these homes exceed that standard and add other important green features like indoor environment quality, water conservation, materials and resource conservation, site management, community linkages, public and homeowner education, and industry innovation.

Draft-proofing and attention to construction details

By using multiple and overlapping draft sealing techniques and a strong attention to every detail of the building process, these homes are more quiet, comfortable, and energy efficient. Each home is depressurized and tested by an independently certified third party inspector to make sure that the home is draft proof and well built.

Low-e2 dual pane windows with argon gas filling

Low-e or low emissivity coatings are strategically used to help to reflect heat and sunlight. These windows have two low e coating to keep the homes cooler in summer and warmer in winter by passively keeping in or reflecting the sun's energy. The lower winter sun is allowed to heat the home, whereas the higher summer sun is reflected away. Low-e coating also will protect furniture, curtain, floors and more from having colours fade due sunlight. The inert argon gas filling is a better insulator than air and it reduces the chances of moisture problems from condensation.

Dual purpose high efficiency on-demand water heater

In the same way that cars get better gas mileage on the highway than in the city, because there are less stops and starts, so does the home's water heaters by having one heater heat both the domestic hot water and the radiant heating. And because this system only produces hot water when needed, energy is also saved from having no "stand-by heat loss" that a conventional water tank has as cools and reheats over and over even when no one is using it.

Integrated HRV and air handler with an ECM motor

An air handler is like a forced air furnace without any burners, as the heat from the homes comes from their water heat. By having a variable speed electrically commutated DC motor and integrated heat recovery ventilator (HRV) not only does this air handler save energy, but it ventilates the homes with conditioned fresh air. In winter HRVs transfer up to 85% of the heat from the warm exhaust air to cold fresh air, improving the air quality in the home, without wasting a lot of energy. ECM motors use approximately 75% less electricity to move the air throughout the houses as do traditional furnace fans.

Properly sized and sealed air handling ductwork

Leaky ductwork can mean as much as 30% of the heated or cooled air will not get to where you want it most. By taping and sealing all the homes' ductwork, and calculating air and ventilation flows, the homes' comfort and air quality is greatly improved and energy is conserved.

Radiant heating system rough-in in the basement floor

Rather than an expensive upgrade to radiant basement floor heating when you decide to finish the basement, these homes are easy to upgrade as all of them have the piping set into the concrete slab. And, if you choose to not upgrade to radiant heat, your basement will function as normal.

Solar hot water heating

All the homes are equipped with solar hot water pre-heating systems that use the sun's energy to heat water before it goes into the on-demand dual purpose hot water heater. This means the heater needs to heat the water much less, conserving natural gas by replacing it with renewable solar energy. This is a year round solar heating system, and it works so well in summer that often the heater does not have to come on at all, the system averages over a 50% reduction in fuel costs over the entire year, according to the manufacture's research.

Solar air heating for HRV intakes (standard on 60 ft. lot homes)

The largest homes are equipped with solar air heating panels that warm fresh air, using the sun's energy, prior to going into the homes' heating system. This is an option on all other homes, and it saves on fuel costs, but using the renewable solar energy to heat the homes.

PV ready

All of the homes can easily add photovoltaic (PV) panels to generate electricity, as an electrical line has been roughed-in from the roof to the basement electrical panel. If homeowners choose to install PV in the future, this will reduce installation cost and prevent any interior work or disruptions.

Three foot roof overhangs for solar shading

It is a simple technique that many people may have seen many older homes. All of these homes have three foot overhangs to keep the midday summer sun from overheating the homes, but allow the morning and evening sun in along with much of the sun's winter heat and light.

Five ENERGY STAR® rated appliances

The fastest rising area for increased energy use in a typical Ontario home comes from those things that get plugged into the wall socket. Called plug load, these home have tried to minimize it where possible by supplying very efficient appliances as standard. ENERGY STAR® is a world-wide rating system that identifies appliances that are top performers when compared to other appliances on the market. All the homes come with five appliances that are ENERGY STAR® rated. The rating is assurance that the appliance will use less energy and cost less to operate.

Gas Dryer and Stove

Ontario gets much of its base electricity from nuclear power, and most of its peak electricity from burning fossil fuels such as coal or natural gas. The efficiency of burning coal and natural gas to create electricity is much lower than the efficiency of using natural gas to for drying and cooking, especially when the concept of line loss is factored in. Line loss is the amount of electricity, often 30% or more, that happens when electricity travels hundreds of miles along power lines from a central generation plant to a person's home. Using natural gas for cooking and drying clothes is generally more efficient, faster, and much more cost effective than using electricity.

Low energy lighting

The homes have compact fluorescent, LED, and other low wattage lighting strategies to conserve the electricity needed for lighting. Each home has a professional lighting design in order to maximize illumination and comfort, using the least amount of electricity. Because Ontario has only a small portion of its electricity generated from renewable power sources like wind, solar, or hydro, there is also a strong environmental benefit to conserving electricity.

Programmable Web-connected peaksaver™ thermostats

As a result of a partnership with Newmarket Hydro, these homes will have programmable, mercury-free thermostats that can be programmed over the Web on using a private password. These thermostats are also peaksaver™ devices enabling Newmarket Hydro to occasionally manage the air conditioning power draws to prevent brownouts and blackouts during times of extreme electrical usage.

In-home real-time energy monitor

Many homeowners are simply not aware of their energy use, and getting a bill a month after the fact is not very informative. The homes have an innovative real-time energy monitor that allows homeowners to see exactly what they are using and how their energy use changes when the clothes dryer is on for example.

2. Water and other material resource conservation

Below grade rain water harvesting cistern to supply toilets and irrigation

Toilets and irrigation represent over 50% of a homes annual water draw. Rain water is better for irrigation that tap water, because plants are more used to its PH levels etc and they grow better when irrigated with rain water. And, it is just common sense that there is no reason why we should waste drinking water to flush toilets, so these homes have an innovated rain water harvesting system developed by the University of Waterloo. Rain water is collected from the roof, filtered and stored in a below grade concrete cistern. When a toilet is flushed or the irrigation system comes on, water is again filtered and pumped from the cistern to meet the demand. This results in a tremendous reduction in storm water runoff and potable water consumption.

Dual flush low flow toilets

Low flow toilets use less rainwater so that these homes can also use if for irrigation. Which is the largest single water draw in the summer months for most homes.

Hot water recirculation pumps

When you turn on the hot water and wait for it to warm up, you are actually wasting water, this recirculating pump has a timer setting that recirculates the hot water, providing you with almost instant hot water at the taps.

Low flow faucets and aerators

All sink facets and shower heads have aeration devices that conserve water usage while maintaining the appearance of good water flow. Low flow shower heads are also installed in every home to reduce water use during showers without lowering comfort or convenience.

Touchless vanity faucets in the powder rooms

Touchless faucets conserve water by preventing accidentally leaving the tap running after washing your hands. This simple technology can save hundreds of gallons a year.

Xeriscaped front yard using drought resistant local plants

The front yard of each of the homes has been "Xeriscaped" or designed by a landscape architect to minimize the need for irrigation by using native plants species that are accustomed to the Ontario climate. Drought resistant plants are chosen to minimize the need for irrigation while still producing a beautiful front yard.

Permeable driveways

Asphalt driveways channel rain water into the storm sewers, but the earth under the driveway can absorb and hold some of this rain and allow it to recharge the ground's soil, much like the way a lawn does. By using interlocking paving stones and a crushed rock underlay, the homes have both a smooth useable driveway, and a means of retaining rainwater in the soli where it belongs.

Automated "smart" irrigation systems

Sensors alert the irrigation system when to water and when to stop watering, taking the guess work out of irrigate and preventing over-watering. Because the irrigation system is rainwater supplied, municipal water restrictions will not affect your lawn and garden.

Exterior spigot connected to the rainwater harvesting cistern

Marked "Not for Drinking" there is an exterior spigot connected to the rainwater harvesting cistern that will allow homeowners to use rainwater for planters or even to wash the car. This helps to maximize the conservation of municipal drinking water.

Locally sourced materials from local companies

Tremendous amounts of energy can be used to haul stone, woods, and other materials from one side of the planet to the other. Every effort has been made to locally source (approx. 500 miles) material where possible. These products have less "embodied energy" because it has taken less fossil fuels to transport it shorter distances to the homes.

- Locally quarried landscape stone
- Locally harvested wood

- Local concrete aggregates
- Locally produced windows
- Local solar manufacturers

50 year recycled fiberglass shingles

Lasting two times as long as traditional asphalt shingles, these homes have fiberglass shingles that are lighter in colour to reflect the sun's heat in the summer. This saves both resources and money.

Forest Stewardship Council (FSC) certified wood used throughout

- FSC dimensional lumber
- FSC flooring
- FSC cabinets
- FSC trim

FSC certified wood comes from well managed forest that use sustainable and ethical harvesting practices, much like the "Fair Trade" certification on chocolate or coffee, this label preserves forests and improves the working conditions of loggers at the same time. FSC is the industries highest certification standard, and it guarantees that the wood used to build these homes is truly a renewable resource.

Built in kitchen recycling centres

Recycling is a way of life in Ontario, but it is not always convenient. These kitchen recycling centres make it easier to separate out recyclables and compostables in a clean and convenient manner.

3. Construction practices

Advanced 2x6 inch framing on 24 inch centres

The smart use of wood to build sturdy, well-designed walls is the principle behind advanced framing. Much like the way computers are used to engineer the structure of a car, the framing of the home is analyzed to maximize strength and prevent unnecessary over use of studs. Not only do excess studs waste wood, they also lower the energy efficiency of the wall. Framing on 24" centres instead of 16" centres improved the overall thermal performance of the wall. And, 2x6 inch studs are used for strength and to provide a larger insulation cavity to fill.

Recycled material substitution

Throughout the homes, recycled alternatives have been used where the performance is equal to, or better than, that of new materials.

- Recycled paint from a paint recycling plant
- Recycled drywall with over 75% recycled content
- Recycled engineered flooring
- Recycled steel beams with over 95% recycled content
- Recycled concrete with over 30% recycled fly ash content
- Recycled mineral batt insulation in the basement
- Recycled quartz countertops

On-site waste diversion and recycling program

Unlike most construction site, the one around these homes produces very little waste that will go to the landfill. By sorting out the wood, cardboard, plastic, and other recyclables, the site diverts over 60% of the waste that would otherwise be clogging landfills.

Bio-diesel powered on-site machinery

In an effort to lower the carbon footprint of these homes even further, all the on-site machinery, such as back hoe and earth movers, were fuelled with bio-diesel, a mixture of renewable plant-based and nonrenewable fossil-derived fuels.

LEED tested and certified homes

The Leadership in Energy and Environmental Design, or LEED, certification program is North America's elite testing and certification system for homes, high-rise residences, and commercial buildings. The LEED for Homes program has just come to Canada, and all these homes are part of an industry leading case study project to set the highest standards for Canadian building. LEED assess homes across eight categories: Innovation and Design Process, Location and Linkages, Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality, and Education and Awareness. Homes can be certified to four achievement levels: Certified, Silver, Gold, and Platinum (with Platinum being the highest).

4. Indoor Air and Environmental Quality

Low VOC paints, glues, and finishes

Throughout the homes, low volatile organic compound paints, glues and finishes have been used to reduce "off-gassing" that can irritate lungs and affect breathing, especially in children.

Steam-based insulation propellant

Steam, rather than VOC emitting propellants, is used to spray the foam insulation into the wall cavities. After 24 hours, the foam is completely inert and offers superior air quality to fiberglass batt or cellulose insulation.

Hard surface flooring rather than carpeted interiors

By using low-VOC pre-finished wood and tile flooring, the air quality of the home for the first few months is much improved. By eliminating wall to wall carpet in the homes, not only is the new carpet off gassing gone, but carpets can be a toxic sponge holding all sorts of irritants that become airborne with traffic or vacuuming. Hard surfaces are much easier to clean and maintain.

HEPA filtration unit

High efficiency particle arresting, or HEPA, filters remove over 99% of airborne particles, allergens, and molds. They were designed for hospitals where superior air quality is essential. When combined with homes' VOC source elimination and ventilation features, the HEPA filters give these homes one of the most complete indoor air quality strategies available.