



**FCM Sustainable Community Awards  
2010 Winner — Buildings**  
Town of Newmarket, Ontario  
Population: 84,000



***Newmarket Builds the Greenest Homes***



All 34 homes have achieved LEED platinum certification.  
Photo credit: Town of Newmarket

**Summary**

Beyond LEED® Certified, and far beyond R-2000 and Energy Star, LEED Platinum marks the highest certification in the world for environmentally sound housing. This is the level that the Town of Newmarket sought to meet in a 34-home subdivision built with partner Rodeo Fine Homes. Even before the new homeowners moved in, the project was “going green” because of a 65 per cent reduction in waste generated during construction. The homes are designed to use at least 25 per cent less fresh water, to send 60 per cent less discharge into storm and sanitary sewers, to produce 60 per cent less greenhouse gas, and to use 60 percent less energy than comparable conventional homes. Currently, the goal for fresh water use has been exceeded, and all the homes have achieved LEED Platinum certification.

**Background**

Located in the Region of York, mid-way between Toronto and Barrie, the Town of Newmarket has developed a strategic plan that sets holistic goals for wellness at the personal, community, environmental, and economic levels. The appeal of the town is evident in its growth rate, which between 1991 and 2006 was 10 per cent higher than that of the Greater Toronto Area. Newmarket’s current population of 84,000 is expected to rise to 98,000 by 2016.

Graced with more than 70 parks and nature trails, and with a multicultural population of urban professionals and young families, Newmarket is also the site of the York regional headquarters and the South Lake Regional Health Centre. Previous green initiatives in the community have included the Smart Commute Program, anti-idling and pesticide bylaws, and a green bin program.

In its recent LEED Platinum project, the town used a public consultation process to create an integrated vision for a 36-hectare farm that it had purchased in January 2003. The resulting plans for the land included a new recreation complex, green space, heritage reserves, and 160 residential lots. In 2005, the town sold 124 lots to a local developer, set aside two lots for Habitat for Humanity homes, and slated another 34 lots for green housing.

**Project Development**

In late 2005, the town issued a request for proposals from interested developers to build 34 low-rise, single-family homes that would achieve stringent water-, waste-, and energy-saving goals while maintaining the “look and feel” of a typical suburban community. In January 2006, Rodeo Fine Homes agreed to the town’s targets and bought the lots for \$3.2 million.

The town hired an architectural firm to work with the developer and to act as an external review team for the entire project. The goal was to ensure that environmental targets would be met without any appearance of bias on the town's part. Early in the process, Newmarket also set up a steering committee to guide the project. The developer and the external review team were members of that committee. Canada Mortgage and Housing Corporation (CMHC) also played a key committee role.

In the early days, when support for the project seemed precarious, a local high school student gathered 200 signatures on a petition in support of the project. CMHC later gave that student an award for her activism in support of environmental change.

## **Project Implementation**

In an important contribution, CMHC helped Newmarket develop the original guidelines for construction of the green homes. The agency also provided research and public affairs support to the project. Using other expertise on the steering committee, the town discussed the use of rainwater harvesting for domestic use with the Ministry of Municipal Affairs and Housing, obtained direct input from the Newmarket Environmental Advisory Committee on the original design rules, and collaborated with the Region of York to monitor sanitary sewer outflows.

As developer of the subdivision, Rodeo Fine Homes found itself in the difficult position of working with and using advanced technologies not yet widely available or common in the construction industry. Working closely with the external review team (hired by the town from the architectural firm of Baird Sampson Neuert), the builder met the project's needs in numerous ways:

- By using only FSC (Forest Stewardship Certified) wood products to build the homes, thus reducing pressure on forest resources
- By using only products low in volatile organic compounds (VOCs) for flooring and other indoor fixtures, thus improving indoor air quality
- By finding ways to reduce construction waste by separating and recycling materials, with the goal of a 60 per cent reduction in such wastes
- By using solar energy to pre-heat both water and indoor spaces
- By reducing the use of municipal water sources and of municipal systems of water discharge by installing low-flow plumbing and underground cisterns to collect rainwater that could then be used for flushing toilets and for outdoor irrigation
- By reducing overall greenhouse gas (GHG) emissions and energy consumption compared with that of conventionally-built homes

Because the targets and demands of the project were so unique, the town's building inspection manual was quickly deemed inadequate. Under the guiding hand of the external review team, a new field review manual was created for the town's building inspectors. Later, the inspectors received both classroom and on-site training to prepare them to inspect homes using the building standards and construction practices needed for LEED Platinum certification. The field manual is now available for sharing with other municipalities.

To measure the project's ambitious goals, the team had to develop and test a number of tools:

- The HOT2000 energy modelling software developed by Natural Resources Canada for use in low-rise residential units helped at the design stage. The developer and the external review team both had access to this software.
- An air tightness test (blower door test) was part of the performance testing after construction.
- Smart meters track actual energy consumption and greenhouse gases produced by the new homes. The results from the metering were compared with those from conventional houses of the same size to determine the savings produced by the green features of the homes.

- Flow metering in the town's sewer lines was set up to monitor the differences in discharge from the eco-homes as compared with nearby homes built to Energy Star standards.

Setting benchmarks was a learning experience. For example, the team had to define a "conventional house" to be able to set a baseline against which the new green homes could be measured. That exercise took almost two years and needed to be in place in time to monitor and measure the environmental benefits of the completed eco-homes.

## Results

- During this project, the town set building requirements that greatly surpass provincial standards for energy-efficient design and construction. Newmarket is now far ahead of other Ontario municipalities, who will need to upgrade their building codes when a new Ontario Building Code is released in 2012.
- The town's Building Department has expanded its inspection protocols and introduced new guidelines for reviewing houses built to LEED Platinum certification. The green guidelines are contained in a 93-page field review manual that Newmarket is making available to other municipalities.
- As of April 2010, 28 of the 34 homes have been sold. "I now know two things," says Jason Unger, Assistant Director of Planning. "Environmentally-friendly homes can be done in a typical suburban setting, not just as a one-off or demonstration house. And I know there is a market for this type of home."
- Interested groups from New York, Michigan, and Mexico have toured the houses to see how they are constructed.
- Town representatives have profiled the project's environmental targets and value in settings such as conferences, training sessions, and presentations across Ontario.

## Lessons Learned

- COLLABORATE. "Our project steering committee met every two weeks for almost three years," says Unger. "Using a steering committee helped us, in that if we decided to change one thing, someone at the meeting would be there to say, 'This will have an impact on what I'm doing.'" The town has since used this new way of doing business in other initiatives.
- BLEND COMMITMENT WITH FLEXIBILITY. "Sometimes you hit a roadblock and you have to switch gears," Unger comments. "Our mayor, our CAO, many senior staff, as well as the external review team, the developer, CMHC, and others were part of our steering committee. Everyone was committed to finding a way.... It was never a case of 'we can't do this.'"
- AIM HIGH FROM THE START. "Identify your targets as early as you can in the process.... If we had known that our goal was going to be LEED Platinum, [that knowledge] would have played a part in ... the road design or the lot design, so the homes could capture more of the sun's energy." It was the developer that suggested moving to LEED Platinum as the target. "If we had set an established target like that right from the start, we would have saved time and money."

## Related and Future Initiatives

Using a steering committee to guide the eco-homes project from concept to construction has since been replicated by the town for four other initiatives:

- redevelopment of the town's community centre lands,
- development of a \$6 million park,
- implementation of a bus rapid transit system in Newmarket, and

- creation of the town's first Cultural Master Plan.

In August 2009, the town set new policy on how sanitary sewer and water services will be extended to new construction. Low-rise homes and developments that are LEED-certified will now be given priority. For mid- and high-rise developments, LEED Silver projects will be first in line.

## **Partners and Collaboration**

### *Internal partners:*

Town of Newmarket Legal Services staff  
Chief Administrative Officer's office  
Planning  
Building and By-laws  
Engineering Services  
Communications  
Mayor's office

### *External partners:*

Members of the Baird Sampson Neuert architectural firm (external review)  
The Ontario Ministry of Municipal Affairs and Housing  
Canada Mortgage and Housing Corporation  
The Newmarket Environmental Advisory Committee

## **Contact Information**

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