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FCM Sustainable Community Awards 2012 Winner — Buildings

Town of Oakville, Ontario
Population: 175,000



A stormwater storage tank supplies water for washing buses at the Oakville Transit facility
Credit: Town of Oakville

Green Buildings and Initiatives

Summary

The Town of Oakville, Ontario, a rapidly growing modern community with a vibrant historic quarter, is taking an integrated approach to reducing the ecological footprint of existing municipal buildings while ensuring that new facilities meet cutting-edge standards of sustainability. Two new municipal buildings showcase the cumulative effects of recently adopted sustainability initiatives. The new Oakville Transit facility and the Sixteen Mile Creek Sports Complex reflect a town policy that makes it mandatory for new municipal buildings larger than 500 square metres to meet LEED® (Leadership in Energy and Environmental Design) Silver standards.

In addition to mandating LEED construction for new building, Oakville has developed Sustainable Design Guidelines for retrofitting buildings smaller than 500 square metres, and for doing maintenance on all municipal buildings. The town has also developed a Corporate Energy Management Plan and a comprehensive Preventative Maintenance Program. Taken together the four initiatives — LEED mandate, design guidelines, energy management, and preventive maintenance — will help Oakville meet its sustainability goals and realize its vision “to be the most livable town in Canada.”

Background

Oakville is located on the shores of Lake Ontario about 40 kilometres west of Toronto. Founded in 1857, the community boasts a sizeable heritage district and an attractive waterfront. Oakville has a diverse economy with more than 250 head offices of national and international businesses. Its 175,000 residents enjoy a wide range of urban services and amenities in a beautiful natural setting that also attracts over 900,000 tourists each year.

Oakville’s official vision statement, adopted in 2008, incorporates sustainability objectives such as minimizing the town’s ecological footprint, preserving its environmental resources, and achieving sustainable building and community design. Intent on realizing that vision, the town incorporated those sustainability goals into its 2011 Official Plan and its 2011–2014 Strategic Work Plan.

The Sustainable Design Guidelines, approved in 2010, will play a central role in helping meet the goals of Oakville’s existing Environmental Strategic Plan, which was adopted in 2005. The guidelines stipulate construction techniques, building features, and maintenance and repair policies. These policies are designed to reduce the use of non-renewable resources, cut greenhouse gas emissions and improve energy efficiency. The document also provides guidelines for implementing lifecycle costing.

“Council is environmentally conscious — they want to do things that incorporate current best practices — and the objectives of our new Official Plan include preserving and enhancing environmental resources, heritage systems and waterfronts. So, basically, we have a mandate to fulfill,” says Suzanne Madder, research policy analyst in Oakville’s Environmental Policy division.

Project Development and Implementation

Oakville launched the implementation of its LEED mandate with the development of the Oakville Transit facility, which opened in 2010, and the Sixteen Mile Creek Sport Complex, which opened in 2011. Construction is also underway on a new community centre, scheduled for completion in 2012.

The town created a project team to develop the LEED mandate. The team, which included representatives from municipal departments, facilities managers and consultants, prepared plans for incorporating green features into municipal buildings. It also created an action list and log to help building project teams monitor timelines and construction progress on development sites. These tools and others were posted on an intranet portal developed to help future building project teams meet LEED requirements.

“The LEED mandate implementation is happening and it’s successful,” says Madder. “The buildings deliver exceptional water savings and energy efficiency by using technologies such as geothermal heating and high-efficiency lighting control systems to reduce energy use.”

The buildings incorporate a variety of innovative features and were designed to be flexible and adaptable. The sports complex makes use of heat reclaimed from the rink refrigeration equipment and the transit facility collects stormwater to use for washing buses. The facility was also designed to handle the maintenance requirements of hybrid buses when they are added to the transit fleet.

The Sustainable Design Guidelines were developed through a series of team meetings and brainstorming sessions with consultants who provided expertise on green construction processes and techniques. The guidelines and procedures provide directions for retrofitting and maintaining existing facilities and for constructing new buildings that are less than 500 square metres in size.

Once the guidelines were prepared, the town conducted training sessions for staff working on retrofit projects and facilities maintenance. “We need to be sure that they are aware of the procedures and refer to the guidelines so that all work and purchases conform to the town’s specifications.” Training sessions are repeated frequently because, as Madder explains, “It’s easy to put the guidelines on the shelf and go back to business as usual.”

Oakville addressed some of its energy goals by implementing new technologies and building standards, but to further decrease the town’s ecological footprint, it needed to focus on energy management. It created a team consisting of staff from departments such as Purchasing, Finance, Facilities and Construction Management, Recreation and Culture, Environmental Policy, and Fleet Management to develop a Corporate Energy Management Plan. The team conducted a two-day workshop to learn about energy management, review current best practices from around the world, and develop an action plan.

Many communities simply hire consultants to deal with energy management, Madder says, but Oakville took another tack. “We wanted the consultants’ knowledge about current best practices, but we wanted to ensure that we did the work and knew what was going on. We realized at the outset that the silo approach to energy — with the finance department paying bills that facility managers never see — keeps managers from understanding how and where energy is consumed, and how it’s purchased. You need to bring these people together to work on your energy management plan.”

Implementation of the Corporate Energy Management Plan is underway, says Madder. “We are in the process of putting solar panels on some of our town facilities. We’ve also developed an outdoor lighting standard to reduce energy costs for street lighting.” By the end of 2012, Oakville will have spent more than \$2 million on energy retrofit projects.

By coordinating its sustainability initiatives, Oakville has been able to make substantial progress toward fulfilling the environmental objectives of its Official Plan. “What’s innovative is that we’re not only tackling new construction, we’re also

going after existing maintenance and retrofits,” says Madder. “We’re trying to go a step further, take a holistic approach, and consider buying locally, using materials with recycled content, and landscaping with native plants.”

Madder believes the most important thing to keep in mind is that developing green initiatives is a dynamic process, “This is a living process, and I don’t think there’s an end. I shudder when people say best practices; I always say it is current practices, because that’s exactly what it is. You can’t become complacent, you have to be constantly changing and reviewing what you’re doing. We need to continually adapt to be more successful.”

Results

Sixteen Mile Creek Sports Complex:

- High-performance building envelope and efficient lighting and HVAC systems reduce energy consumption.
- High-efficiency fixtures reduce water consumption by 35 to 40 per cent.
- Heat recovered from the rink refrigeration equipment is used in other areas of the centre.

Oakville Transit facility:

- Permeable paving reduces stormwater runoff by 50 per cent.
- A stormwater storage tank supplies water for washing buses and reduces potable water consumption.
- More than 75 per cent of the wood used in construction came from Forest Stewardship Council certified sources (sustainably harvested forests).
- More than 75 per cent of the waste created during construction was diverted from landfill.
- More than 35 per cent of the construction materials used was comprised of recycled content.
- 56 bicycle spaces and four carpooling spaces have been provided to encourage the reduction in use of gas-consuming vehicles.
- Drought-resistant native species used in landscaping eliminate the need for a permanent irrigation system.
- Geothermal heating and cooling system reduce the facility’s electrical and natural gas demands.

Corporate Energy Management Plan:

- During 2010 Oakville reduced its electricity use by 17.5 per cent, its natural gas use by 26 per cent, and cut water use in the Town Hall by 15 per cent.

Lessons Learned

- **ENGAGE ALL THE STAKEHOLDERS.** “You have to work with the community to meet its needs. But you also have to work with municipal departments to meet their needs in terms of the day-to-day operation of the building. It’s essential to have all the key stakeholders around the table.”
- **BUDGET FOR LEED CONSTRUCTION.** With LEED buildings, high capital costs at the outset are offset by low operating costs over time. “You have to ensure that departments understand the budget requirements before the design process begins, and budget enough money for the building. You don’t want to go back to council to say you need more money!”
- **TRAIN CONTINUOUSLY.** “When you’re implementing sustainable design guidelines, you absolutely need training, and it can’t be just one-time training because it’s easy to put the guidelines on the shelf and go back to business as usual.”
- **PROVIDE EASY-TO-USE TOOLS.** “We’re developing a checklist to make it easier for managers to implement the Sustainable Design Guidelines. It makes their jobs easier by providing a quick reference and a reminder to check the guidelines for specifications.”

- KNOWLEDGE IS KEY TO ENERGY MANAGEMENT. “The silo approach to energy — with the finance department paying bills that facility managers never see — keeps managers from understanding how and where energy is consumed, and how it’s purchased. You need to bring these people together to work on your energy management plan.”
- REPORTING CREATES OPPORTUNITIES. “Reporting annually on your successes builds interest and makes council members want to do more. Reporting on successes creates opportunities.”

Related and Future Initiatives

- Implement the Sustainable Design Guidelines through retrofit programs, including a major renovation of the Town Hall facility in 2012.
- Monitor the implementation and use of the Sustainable Design Guidelines.
- Continue implementing the Corporate Energy Management Plan — install energy efficient boilers and HVAC systems, and replace lighting in municipal buildings.
- Install LED street lighting along roads, trails and walkways, and in rehabilitated parks owned by the town.
- Continue implementing LEED certification for all new buildings.
- Complete and launch the new Queen Elizabeth Park Community and Cultural Centre in 2012 (a LEED Silver or Gold contender).

Partners and Collaboration

The Sixteen Mile Creek and Oakville Transit facilities received funding through the federal government’s Economic Action Plan.

The Corporate Energy Management Plan was developed with financial assistance from Union Gas and in consultation with Oakville Hydro.

Oakville is a member of FCM’s Partners for Climate Protection program and has attended the FCM’s Sustainable Communities Conference.

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 Sustainable Design Guidelines: www.oakville.ca/EN-GEN-001-003.htm
 Official Plan: www.oakville.ca/lo-plan.htm