



**FCM Sustainable Community Awards  
2010 Winner — Energy**  
City of Toronto, Ontario  
Population: 2.48 million



***Regent Park Revitalization***



Canada's oldest public housing community will introduce district energy.  
Photo credit: City of Toronto

**Summary**

In the first phase of the six-phase Regent Park Revitalization initiative, Toronto Community Housing (TCH) constructed more than 900 housing units in buildings designed to reach Leadership in Energy and Environmental Design (LEED®) Gold certification. Served by a highly efficient district energy system, the buildings will reduce energy use and greenhouse gases (GHGs) by about 30 per cent annually and also create other efficiencies such as lowered potable water consumption. By building housing near large employment centres, transit routes, and community facilities, TCH is taking advantage of urban density to encourage community resiliency and economic development. Regent Park is a showcase for the redevelopment of a social housing community into a mixed-use, mixed-income neighbourhood with a high standard of sustainable design. It is a flagship project for TCH in its large-scale use of green technologies.

**Background**

Regent Park is Canada's oldest public housing community; its population of 7,500 has an average annual household income of \$15,500. For many years, residents have been advocating for replacement of existing housing. After an extensive consultation that started in 2002, TCH created a comprehensive plan to revitalize the community by constructing new buildings to high environmental standards to create an urban, mixed-use community.

Key to the project is a commitment to reduce the area's carbon footprint; sustainability therefore became an important element in the business case for the revitalization initiative. Project financing is directly linked to reduced energy consumption in the new rental buildings. Energy-efficient features will reduce operating costs and thus increase net income from the properties — at the same time increasing loan capacity for the project.

The revitalization initiative is taking place in six phases. Phase one involved approximately 10 acres; the entire project covers 69 acres. With the first phase now complete, tenants are moving into new rental buildings. One new condominium opened in 2009, and a second condominium is under construction. Phase two construction begins in 2010.

As the largest social housing provider in Canada, TCH has about 164,000 low- and moderate-income tenants in 58,500 households, and for those tenants, it aims to create community conditions that minimize risk and promote community development.

## **Project Development**

After Toronto City Council approved the revitalization of Regent Park in July 2003, the city worked with TCH and the public to create the Regent Park Social Development Plan (SDP). In 2004, TCH received an FCM Green Municipal Fund grant of \$350,000 (GMEF 5443) to do eight preparatory studies for the initiative. The 75 recommendations that emerged from the comprehensive consultation process with multiple stakeholders fell into three broad areas: social cohesion, community services, and facilities and employment.

As the first “place-based” SDP for Toronto, the Regent Park plan provides a framework for building a cohesive and inclusive community. Its in-depth documentation requirement and integrated approval process will help to bring together the physical development of the infrastructure with the social development of the community. The implementation strategy sets out a process for stakeholder engagement, including information sharing and collaboration on programs and services. In October 2007, the city approved the plan, which includes guidelines and policies designed to reduce the project’s impact on the environment.

A project management approach was established early to deal with the complexity of revitalization. A project management team from a variety of city divisions contributed to the planning, approval, and review process. That team became a permanent Revitalization Secretariat that now coordinates the work of city divisions dealing with policy requirements, permits and applications, and other activities.

## **Project Implementation**

Revitalization will occur in six phases over 15 years, and almost all existing buildings in Regent Park will be demolished in the process. New construction will take advantage of sustainable design practices and high standards of energy efficiency. In 2005, TCH received both a grant of \$2,595,586 and a loan of \$4,799,184 from FCM’s Green Municipal Fund (GMIF 7191), covering all phases of the development project. TCH has also entered into private-sector partnerships with Corix Utilities Inc. to develop and deliver district energy, and with The Daniels Corporation to build new housing and commercial infrastructure. During phase one, now complete, more than 900 residential units (365 TCH rental units and 670 market condominium units) and more than 30,000 square feet of new retail space were built.

A key feature of the Regent Park Revitalization is the introduction of district energy to the community. The city entered into a Municipal Access Agreement with TCH to allow the district energy piping to be constructed in the public road allowance. The city also agreed to waive the fee that is typically charged to utility providers. When complete, the district energy system will include thermal storage, heat recovery from chillers, combined heat and power, absorption chilling, solar thermal collectors, ground source heat pumps, and bioenergy or fuel cells. All new buildings will be connected to the system, reducing energy use and GHG emissions from current levels by 30 per cent annually. Over time, the introduction of geothermal storage and solar energy into the system will reduce its reliance on carbon-based energy.

All buildings will aim to reach LEED Gold certification through these energy-saving features:

- high-efficiency two-pipe fan coil units for heating and cooling
- in-suite heat recovery ventilation systems
- a building envelope with increased overall R-Value (insulation)
- improved window performance
- window-to-wall ratio between 40 and 50 per cent
- high-efficiency motors in HVAC equipment
- high-efficiency appliances
- energy-efficient interior lighting

To encourage accountability and conservation in the long term, individual unit meters for electricity, water, and heat have been installed in one of the new phase one rental buildings. In addition, all new rental buildings are connected to a Building Automation System (BAS) that automatically adjusts utility use. The BAS will be an important tool in monitoring building system efficiency. Monitoring equipment in the district energy system plant and in the energy transfer stations in each building will measure the efficiency of thermal energy production. A third-party agent will independently review and verify the building systems to ensure performance meeting the LEED Gold standard. As subsequent phases of the project unfold, building design may be modified to optimize that performance. A third-party agent will also provide a “best practices” commissioning report on the long-term operation and maintenance of the buildings, and will offer advice for staff and resident training on sustainable practices.

Additional sustainable features of the new Regent Park buildings include:

- low-flow bathroom fixtures
- exterior lighting designed to reduce light pollution
- three-stream garbage sorting and storage (recyclables, organics, and waste)
- building specifications and finishes that prioritize regional and recycled-content materials
- low-emissions paints, coatings, adhesives, and sealants
- landscaping needing less irrigation
- green roofs and rooftop planters
- a green housekeeping program
- a green building education program for residents

The sustainability mandate of the Regent Park Revitalization initiative also includes a strong focus on social programs and community economic development. The planned range of affordable housing supports a mixed-income community. Units will be divided between rent-geared-to-income (approximately 70 per cent) and new affordable rental (30 per cent) types. With provincial and federal funding support, TCH is also introducing affordable ownership opportunities. Three main services provide opportunities for employment: an on-site employment service; a local employment committee; and an employment and enterprise hub.

## **Results**

- The district energy system will reduce energy use and GHG emissions by 30 per cent annually.
- New rental buildings in phase one are designed to exceed the energy efficiency requirements of the Model National Energy Code for Buildings by between 40 and 52 per cent.
- All buildings are on target to meet LEED Gold certification standards.
- At competitive energy service rates, the investment in district energy will generate an average return of more than 10 per cent over 30 years.
- The estimated operational cost savings to TCH for rental units connected to the community energy system is \$1,356 per unit annually (more than \$2.7 million annually on rental housing alone).
- Property tax revenues from the approximately 3,000 additional residential units and 200,000 square feet of commercial space are estimated at \$350,000 annually (net municipal income) after phase one — a number that will rise as additional phases are completed.
- The sustainable community design will save at least \$750,000 in infrastructure requirements for water and sewage treatment and landfill.

## Lessons Learned

- **BROADEN THE VISION BEYOND REBUILDING HOUSING.** Previous attempts at redevelopment failed, mainly because they were based only on rebuilding, and not on the broader objectives of social development, poverty reduction, and reconnection with the surrounding city. "To support the development of healthy communities and break the cycle of poverty, Toronto Community Housing promotes activities that support the economic and social independence of tenants," said John Fox, acting Vice President of Development at TCH.
- **WORK COLLABORATIVELY WITH RESIDENTS.** "Working collaboratively ... has helped us [to] ensure the revitalization reflects the residents' wishes and ... [to] deliver better results," said Fox. "Residents can be your biggest champions in moving that plan forward."
- **ENSURE GOOD COLLABORATION BETWEEN MUNICIPAL DEPARTMENTS.** During the implementation of phase one, the city recognized the value of a collaborative management approach. The processes developed during that time have resulted in more efficient internal reviews and the capacity to address complex problems more quickly.
- **WORK CLOSELY WITH FUNDING PARTNERS FROM THE BEGINNING.** TCH "made the strategic decision to accept some risk [and] decided to start revitalization without having all our funding in place," said Fox. As the project moved forward, TCH had to spend time and energy continuing to look for funding. Although the risk was worthwhile and the project a success, "now that we've demonstrated revitalization works ... we won't be beginning a revitalization initiative until we can establish a financially viable plan," said Fox.

## Related and Future Initiatives

The lessons learned in Regent Park with respect to successful sustainable design, community engagement, and redevelopment of a social housing community into a mixed-use, mixed-income neighbourhood through partnerships with the development industry are being applied at this moment to TCH's other projects. Thirteen more neighbourhood revitalization projects with objectives similar to those of the Regent Park project are currently being planned. Two neighbourhoods currently undergoing revitalization are Lawrence Heights and Alexandra Park.

## Partners and Collaboration

Toronto Community Housing  
FCM's Green Municipal Fund  
The Daniels Corporation (developer)  
Corix Utilities Inc.  
Municipal Affairs and Housing, Province of Ontario  
Ontario Housing Corporation (funding for remediation)  
Toronto District School Board (joint planning of a "community hub")

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