

# City Funding Speeds Returns for Condo Energy Efficiency Retrofits



By Tom Chessman



**IN THEIR** daily lives, building managers are under tremendous pressure – to meet the immediate needs of occupants, maintain their properties to required standards, live within a fixed budget, and often to generate specific economic returns, all while dealing with wildly fluctuating market conditions. In fact, most recent developments see energy prices rising again, at the same time that literally every market sector is pushing for reduced energy usage, a greener building envelope and lower operating costs. The good news is that these competing demands are achievable with help from the Better Buildings Partnership (BBP).

#### ■ What is the BBP?

The BBP is a program delivered by the City of Toronto's Energy Efficiency Office. The program helps building owners and managers with a range of resources, including financial assistance, to implement energy efficiency initiatives in their

*The Masters took advantage of the BBP program offered by the City of Toronto and surpassed cost savings of \$40,000 per year.*

buildings, such as upgrading to energy efficient appliances, replacing inefficient chillers, or retrofitting lighting or HVAC systems.

The BBP's primary mandate is to reduce carbon dioxide emissions that come from the energy used to heat, light, cool and operate buildings in Toronto. It is an important part of the City's overall mandate to reduce greenhouse gas emissions – important because buildings in the city cause more greenhouse gas emissions than any other single source, including transportation. One of the ways that BBP achieves its goal is through financial incentives for new construction, multi-family, institutional, industrial and commercial buildings within the 416 area code.

As indicated by the name, the BBP is built on partnerships, working with a variety of partners including Ontario Power Authority, Toronto Hydro, Enbridge, Toronto Atmospheric Fund, BOMA and over 35 energy management firms and industry associations with interests in Toronto's built environment.

### ■ Sector-focused Incentives Offered by BBP

BBP is organized into three sector-focused programs, each with its own incentive levels and guidelines:

1. BBP Existing Buildings – Multifamily Sector: Eligible buildings include multi-unit residential buildings with more than six dwelling units and larger than 2,300 square meters.

2. BBP Existing Buildings – MASH Sector: Eligible buildings include all institutional buildings in the municipal, academic, social housing and healthcare sectors.

3. BBP New Construction: Eligible buildings include all new buildings, additions to existing buildings and conversions of existing buildings to a new use.

### ■ How Condos Can Work with the BBP

As noted above, building owners and managers of both privately owned and assisted/social housing buildings are eligible for BBP incentives. This includes apartments, condominiums, shelters, co-ops and

many other buildings, as long as the building has at least six residential units.

The BBP offers a portfolio of incentives tailored to the needs of multi-residential owners and property managers in Toronto. For example, a 'custom measures' approach provides site-specific solutions to electricity efficiency retrofitting. All technology equipment and systems included in the project are evaluated on the basis of their power and energy performance improvement overall. Examples of custom measures include changes to HVAC, lighting and electrical systems, motors and drives, water heating, control systems, building envelope, appliances, monitoring and tracking.

Alternately, a recently introduced 'prescriptive measures' approach allows for predefined and stand-alone technologies with a corresponding per-unit or performance basis savings. This approach tends to be advantageous for smaller projects (i.e., less than 250 fixtures) that involve replacements and upgrades to existing systems. Examples in-

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clude exit signs, ground source heat pumps, compact fluorescents, T8 lighting fixtures and natural gas dryers.

In order to be eligible for incentive payments, the measures undertaken must provide sustainable, measurable, verifiable electrical demand and energy reductions. BBP staff can help walk managers through the process of identifying these reductions and maximizing their incentive payment.

### ■ Case Study: The Masters

The following is an example of a lighting retrofit project that received an incentive payment from BBP's multifamily program for reducing a condominium complex's energy consumption and costs.

The Masters is a multi-building residential condominium complex, managed by Brookfield Residential Services Ltd. The Masters collaborated with Lighting Solutions and the BBP to retrofit the lighting systems in all of the common areas of the buildings, as well as the stairwells and the garage.

The goals that led to a decision to retrofit the lighting system included long-term reduction in operating costs and energy consumption. Electricity costs were consuming 35% of the complex's entire operating budget. Before the retrofit, the lighting systems in the common areas, stairwells and garage consisted of metal halide bulbs. In addition to using more energy than other lighting systems, this type of lighting posed an environmental concern.

In order to assess their needs, The Masters' management undertook a substantial pre-project study into the garage, stairwells and all common area lighting systems. This careful planning resulted in substantial kilowatt load and hour reductions without compromising perceived light levels, safety and security.

### ■ Results

The existing High Intensity Discharge (HID) lighting system with a 50.6 total kilowatt (kW) load from the garage was removed and replaced with a High Efficiency T8

lighting system with a 12 total kW load. This retrofit resulted in a 74% reduction in kW load and a yearly reduction of 338,139 kilowatt hours.

The existing HID lights were also removed from the stairwells, fitness area, meeting rooms and clubhouse, and were replaced with a High Efficiency T8 lights with a 12 total kW load. The retrofit resulted in a 38% reduction in kW load and a yearly reduction of 110,000 kilowatt hours.

The goal of this project was a reduction of 450,000 kilowatt hours to generate operating cost savings of \$40,000 per year, which was significantly surpassed. Completion of this project also resulted in cash savings and a benefit to the environment.

"As managers of condominiums, we are working within a nonprofit environment. The owners' maintenance fees are the only source of budget income. Our ongoing mandate is to find ways to reduce operating costs," said Nena Gajic, property manager. "We knew a lighting retrofit proposal with less than a 1.5 year payback, substantial reduction in future operating costs and a gener-

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The new lighting in The Masters' Clubhouse Lounge. It is on "passive infrared and microphonic sensors" and shuts off if no one is in the room for 10 minutes.

ous BBP incentive to boot, would be a welcome winner!"

■ **Make Use of the Incentives While You Can**

BBP's energy savings incentives are currently available to building owners and managers for work that is completed by December 31, 2010. Space cooling projects can be ex-

tended until April 30, 2011 to be completed and in service. This means that the best time to do that project you have been contemplating is now.

Visit BBP's website for additional information on the types of incentives and programs we run. Applications for funding can even be filled out online. <http://www.toronto.ca/bbp/index.htm>.

■ **BBP Results to Date**

In the program's first ten years, over 670 projects were completed with the assistance of the BBP, resulting in over 52 million sq. ft. of gross floor area retrofitted and the creation of 2,600 jobs (in person-years). Energy savings translated into approximately \$130.7 million in reduced operating costs to building owners, managers and tenants and a reduction of 2.5 million tonnes of carbon dioxide emissions. The BBP's efforts are being recognized across Canada through numerous green and sustainability awards, and international adoption of City of Toronto's model. ■

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*Project Snapshot*

Total annual ROI of 44%

Total annual 100.49 kW load reduction

Total annual 880.254 kWh reduction

Total annual savings of \$78,218

Total payback in months – 27.3

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