CONSERVATION CONVERSATIONS

The Newsletter of Better Buildings Partnership

Issue 1, January 2010

The Importance of Energy Management Firms to Your Energy Savings Project

By Richard Morris

It goes without saying that the word "partnership" is integral to the Better Buildings Partnership. A group of partners that is highly instrumental to the success of the Better Buildings Partnership is one that we refer to as Energy Management Firms (EMFs).

Click here to read the full story.

This month's sector profile: MASH

Hospitals, schools and other institutional buildings operate to meet a special purpose. As a result there are specific and critical demands for energy use, in many cases for 24 hours a day, 7 days a week. Toronto's Better Buildings Partnership dedicates a team of experienced Project Managers to the Municipal/Academic/Social Services/Healthcare (MASH) sector.

Click here to read the full sector profile.

Inside This Issue:

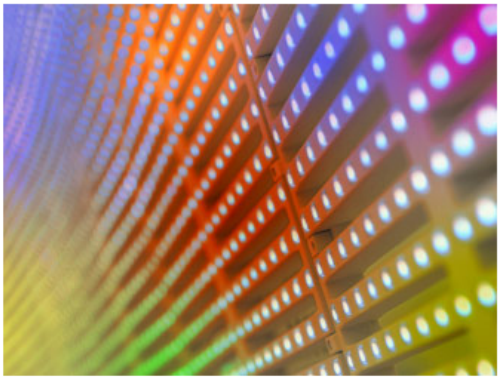
Case Study: Villa Charities Inc.

In 2008, Villa Charities embarked on energy efficiency lighting retrofit programs for three residential buildings at their Dufferin and Lawrence campus. To accomplish their energy conservation efforts, Villa teamed up with the City of Toronto's Better Buildings Partnership to evaluate the incentives available to offset the costs of their project.

As a part of the retrofit, nearly 10,000 lighting fixtures were upgraded, saving 2,300,195 kWh in electricity annually - which is equal to removing 275 cars from the road every year!

Click here to read the full case study.

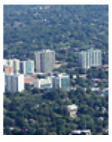
Technology Profile: LED Lighting



Light Emitting Diodes (LEDs) are an efficient light source and, when used in appropriate applications, represent a great way for buildings to reduce energy costs and environmental impact. LEDs are used in many lighting applications and are becoming a preferred light source for much more than simple indicators. Lighting upgrades are considered by many to be one of the easiest and quickest ROI investments any organization can make.

Click here to read the full technology profile.

Better Buildings Partnership Program Updates



New Incentive Levels

Apply now for DOUBLE the incentive dollars for existing buildings. Effective immediately, incentives for energy retrofits, with the exception of lighting replacements, have increased to $800 per kW peak reduction and to $.10 per kWh annual reduction.

New Multifamily Energy Efficiency Rebates

BBP's Multifamily Program is officially launching its new enhanced program - Multifamily Energy Efficiency Rebates (MEER). In addition to new Prescriptive and improved Calculated incentives for energy savings projects, MEER offers an Energy Audit Rebate ($35 per dwelling unit up to the full cost of the audit) as well as a Resident Education Rebate to help cover the costs of materials and activities to engage residents in an energy project. Act now to maximize your savings.

New Customer Service Portal

Check out bbptoronto.ca to see BBP's new customer service portal. With new interactive capabilities that help you get quick access to sector-specific information and resources, we can better help you to plan, develop and make funding applications for energy projects that are eligible for BBP and other incentives. The other good news is that the new portal has been designed with versatility and scalability in mind so make a point of visiting regularly to keep up with what's new.

BBP- New Construction Helps Implement the Toronto Green Standard

In January 2010 Toronto will be implementing its Green Standard, requiring all new site plan applicants to achieve Tier 1 (Tier 2 is an enhanced voluntary standard that rewards achievers with a 20% development charge rebate). Energy efficiency is a central element of this standard with Tier 1 requiring a minimum of 25% improvement over the Model National Energy Code for Buildings (MNECB). BBP-NC is here to help applicants meet the standard and potentially receive an incentive in the process. For more information on the Toronto Green Standard go to www.toronto.ca/planning/greendevelopment .

Top of Page

Continued: The Importance of Energy Management Firms

It goes without saying that the word "partnership" is integral to the Better Buildings Partnership. A group of partners that is highly instrumental to the success of the Better Buildings Partnership is one that we refer to as Energy Management Firms (EMFs).

Collectively, EMFs provide expertise that is invaluable to the planning, delivery, and final measurement and verification of energy project results. They are in the business of energy solutions with their understanding of customer needs and the proven technologies and systems that are best positioned to address those needs. As such, they are essential partners for BBP in improving the energy efficiency of Toronto's built environment, ultimately shrinking the city's carbon footprint and reducing the peak demand on our electricity system so that Torontonians can rely on their energy supply every day of every year.

BBP works proactively with dozens of these firms, ranging from small specialized firms, to larger multi-disciplinary consulting engineers, to giant multi-national equipment manufacturers. Their products and services are far-ranging, including energy audits, feasibility studies, project proposals, equipment supply and installation, project management and more. Some EMFs go even further, helping customers finance their energy projects with a guarantee on energy savings results, total cost and payback. For any given project, the type(s) of EMF that is best suited depends on such things as the size and nature of the project and the availability of in-house expertise and resources. Some EMFs target their work to certain sectors.

Working with EMFs over the years has helped BBP be smarter and more effective in identifying and funding energy conservation programs that have the right features and benefits for Toronto buildings. In addition to offering attractive energy savings incentives, the role that BBP plays is to be an 'honest broker' that helps building owners and managers find and work effectively with well-suited EMFs, giving a level of confidence that their energy dollars will be spent effectively to produce the results that they expect. One way we do this is by ensuring that all BBP-assisted projects are properly evaluated by third parties at the outset and then verified upon completion.

I'd like to take a moment to focus on one great success story of an energy retrofit led by an energy management firm, in partnership with BBP, that is paying back substantial dividends.

In 1986, West Park Healthcare Centre began its focused efforts to improve energy efficiency on the 27-acre campus of its rehabilitation, complex-continuing care and long-term care facility. The hospital

provides 487 beds to patients who are overcoming health barriers to help them live full lives. West Park employs 920 healthcare staff, and operates 24 hours a day, seven days a week.

The most recent project in West Park's long-term energy plan was the result of an engineering review conducted in 2008 by HH Angus and Associates that revealed an opportunity to improve the cooling system and achieve significant operating cost savings.

The engineering study proposed that the replacement of a 30-year-old chiller with two smaller, energy-efficient units that better matched the building's needs, would cut West Park's carbon emissions by 127 tonnes and reduce energy consumption for air-conditioning use by an estimated 37 per cent. To achieve these goals, West Park teamed up with BBP and we were able to offset the $1.4-million expense of the project through an incentive of $47,480 based on verified demand savings of 118.7 kW, thus reducing the payback period of the project to an acceptable timeframe.

As an institution that has been serving the community for over 100 years, West Park is proud of its delivery on a commitment to reduce its operations' impact on the environment. In continuing its commitment to energy conservation, West Park appointed Michael Bonnah as Chief Energy Conservation Officer in May 2009 to oversee the institution's ongoing journey to improve energy efficiency, in part through ongoing relationships with EMFs and BBP.

In short, energy conservation has been a vehicle for demonstrated leadership and partnership for West Park Healthcare Centre. That's exactly what the BBP is looking for in its partnerships for a better energy future.

Richard Morris is the Manager of the Energy Efficiency Office.

Top of Page

Continued: MASH Sector Profile

Hospitals, schools and other institutional buildings operate to meet a special purpose. As a result there are specific and critical demands for energy use, in many cases for 24 hours a day, 7 days a week.

Toronto's Better Buildings Partnership dedicates a team of experienced Project Managers to the Municipal / Academic/ Social Services/ Healthcare (MASH) sector, working closely with building owners and facilities managers in Toronto to increase the energy efficiency of institutional buildings through comprehensive multi-measure retrofit projects. The strategy behind multi-measure projects is to blend the return on investment (ROI) over a range of energy savings measures, ultimately achieving an overall acceptable payback period for the entire project.

In addition to assisting building owners with energy management plans and liaison with energy management firms (EMFs), the BBP-MASH program offers attractive incentives (recently doubled - see Program Updates below) for buildings that undertake an eligible retrofit project to reduce electricity use.

What are some of the most common types of retrofits for MASH buildings?

- Building envelope upgrades (windows, air sealing, insulation)
- Chiller replacement
- Heating, ventilation and air-conditioning (HVAC)
- Fuel substitution and alternative energy
- Building automation/controls
- Lighting upgrades (interior and exterior)

Energy Savings incentives:

- Non-lighting measures: $800/kW for demand savings OR $0.10/kWh for energy consumption savings
- Lighting measures: $400/peak kW reduction OR $0.05/kWh for energy savings
- Maximum: up to 40% of total eligible project costs

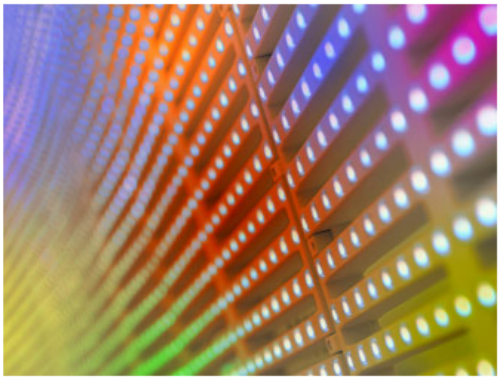
BBP-MASH Project Managers:

Healthcare: Angelo Poto apoto@toronto.ca
Academic: Victor da Rosa vdarosa@toronto.ca
Municipal: Dragos Paraschiv dparasc@toronto.ca

For more information on BBP-MASH, including incentive details and applications, please click here bbptoronto.ca.

Top of Page

Continued: LED Lighting Technology Profile



Light Emitting Diodes (LEDs) are an efficient light source and, when used in appropriate applications, represent a great way for buildings to reduce energy costs and environmental impact. LEDs are used in many lighting applications and are becoming a preferred light source for much more than simple indicators. Lighting upgrades are considered by many to be one of the easiest and quickest ROI investments any organization can make.

Efficiency Advantages

According to the U.S. Department of Energy, the energy efficiency of LEDs is expected to rival the most efficient white light sources by 2010. Luminous efficacy is the amount of light produced for each watt of electricity consumed by a light source, and an important indicator of energy efficiency. Currently, the most efficacious white LEDs perform similarly to compact fluorescent lamps (CFLs).

Due to the directional nature of LED light emission, it potentially has a higher efficiency than other light sources in certain lighting applications. Fluorescent and standard "bulb" shaped incandescent lamps emit light in all directions. Much of the light produced by the lamp is lost within the fixture, reabsorbed by the lamp, or escapes from the fixture. For many fixture types, including recessed down lights, troffers, and under-cabinet fixtures, it is common for 40-50 per cent of the total light output of the lamp(s) to be lost before exiting the fixture. LEDs emit light in a specific direction, reducing the need for reflectors and diffusers that can trap light, delivering light more efficiently to the intended location.

LED technology also offers several additional advantages over conventional lighting, when operated properly, such as no UV rays, a long source life, low radiated heat and low voltage and current requirements.

Words of Caution

LED lighting performance can be affected if the installation doesn't provide proper thermal management. All light sources convert electric power into radiant energy and heat in various proportions, LEDs convert only 15-25 per cent of the power into visible light; the remainder is converted to heat that must be conducted from the LED chip to the underlying circuit board and heat sinks, housings, or luminaire frame elements.

Warm or Cold

The most efficacious LEDs produce a "cold" bluish light, different from the warmer light traditional bulbs produce. Warm white LEDs have improved significantly, approaching the efficacy of CFLs. In addition to warmer appearance, LED colour rendering is also improving. Warm white LEDs are now available with colour rendering index equivalent to CFLs.

Building Applications

In addition to signage, LED lighting can be used in many ways around a building, including elevator lighting, art display lighting, step and path lighting, food preparation areas, outdoor area lighting and spaces with occupancy sensors.

BBP incentives are available for lighting improvements that save energy. Please visit bbptoronto.ca for more information.

Top of Page

TORONTO BETTER BUILDINGS PARTNERSHIP Livegreen Toronto