

The PROVIDENT

POST

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It seems like every other day, Provident Energy is approached by some company or individual who has built a new energy saving device that will return 10%, 30% or more on your energy bill. Frankly, if we added up the savings from all the things that come across our desks, we would be saving more than 100% of your energy use and be selling energy back to the utilities!

As experience has shown, there are savings to be had. However, rather than sell these innovations unproven, Provident Energy takes a great deal of time and effort in testing these devices in small, controlled installations where we can fact-check the claims of the manufacturers prior to wide spread implementation.

Many of our Clients have been approached over the years to be a part of these research initiatives, and we count ourselves lucky to have customers that are willing to provide test beds for this research. Testing takes place for a period of time, after which the area is returned to its original condition.

Some of the research initiatives that Provident Energy has been involved with recently include:

* Photovoltaic electricity generation. Under the current regulations, sustainable energy sources receive significant subsidies and to test the viability of these systems, a system has been installed on the roof of our offices. The system has been hooked up to the grid and is currently generating electricity.

* A new type of Variable Speed Drive which is primarily a Mechanical Device was recently tested at a client's building in co-operation with MaRS Labs and the University of Toronto. Testing is still on-going.

* A device which purported to save energy on lighting systems. This used high speed switching technology to turn lights on and off faster than the eye can detect. For a while it

looked like it was saving energy. In the end, it was found that the device caused fatal damage to ballasts. This one goes back to the drawing board.

* In new construction, Provident Energy is monitoring a new type of fan coil unit which combines its own dedicated fresh air feed to the suite with an Energy Recovery Ventilator to recover waste heat from exhaust. This promising technology may revolutionize condominium construction and so it is under going exhaustive (no pun intended) testing.

* In conjunction with a developer, Provident Energy investigated how much energy regenerative drive elevators use. We were surprised to learn how little elevators consume. This is an area for future study. Elevators were sub-metered at several buildings.

* An 'intelligent lighting controller' was tested. Using 'a wave clipping' technology, it was found to save energy but light levels were dimmed. This one will warrant further study.

* Extensive Thermal Meter testing is taking place, including wireless technologies. The goal here is to provide the highest accuracy while encouraging energy saving. Partners include Enbridge, the Natural Gas Technologies Centre (NGTC), and several of our client buildings.

By testing on a small scale with only a small investment on the part of our Clients, we can offer proven technologies to our customers in the future. If you are approached with the 'latest and greatest', do not hesitate to contact Provident Energy. We may have already been 'down that road'.

Our on-going research and development projects will hopefully provide additional energy saving products and services for our clients.

Change-Over Time!

Some tips for your fall change-over:

- Condominium Boards determine the changeover date for their facilities. This matter should be brought up at Board meetings in September.

- Change over times are the busiest times of the year for Contractors. Call ahead by at least two weeks to schedule your changeover.

- In some facilities, it may be possible to change over the corridor make up air units prior to converting the in suite fan coils to heating. This gives you the option of heating the Building should a cold spell occur prior to the change-over.

- You can speed up changeovers by shutting down Chillers prior to the arrival of your Contractor. Most Boilers should not be started if the water in the pipes is still very cold.

- Facilities with Energy Management Systems have further options including "Cooking-Time" Only Schedules, Duty Cycling, Outdoor Air Temperature Fan On/Off, and other advanced options.

- Reduce complaints and service calls by posting any changes that must be made to Thermostats on Bulletin Boards. Make it clear that there will be NO Suite Air Conditioning after your changeover date.

Ward 35's New Warden Hilltop Community Centre

We were on hand during the centre's grand opening on Sat Sept 17 to provide information on the building's green features. Provident Energy was the LEED project consultant. The community centre is the first public building in Toronto to be LEED Silver-certified featuring a geothermal heating and cooling system, green roof and solar power.

GreenBuild - Canada House

Provident Energy is excited to participate in the Canada House Showcase, October 4th-6th at the Steamwhistle Brewery Roundhouse. We are a supporting sponsor and exhibiting company. In conjunction with North America's largest green building event, Greenbuild, the Canada House Showcase will explore technologies, products, services, and expertise in the Canadian green building industry.

ACMO/CCI-Toronto Conference

Provident Energy is pleased to once again participate in the annual ACMO/CCI Conference on November 4 & 5, 2011 - at the Toronto Congress Centre. Come and join us at booth #325. The exhibitors and seminars are geared towards condominium professionals, managers and directors.

For more information on these events, please visit our website and blog at www.pemi.com

Provident Grows Again!

We would like to welcome **Roxann Luke** (assistant billing manager), **Stephen Alphonso** (service technician), and **Rajot Arora** (Jr. commissioning agent, co-op from the University of Waterloo) to the Provident Energy team. Dr. Dalia Bahy joined the engineering department under a summer internship for foreign trained professionals - best of luck on your future endeavours Dr. Bahy!



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Small Metering Projects

Many condominiums have recreational facilities and commercial units as part of their common areas. If these areas are not separately metered, the electrical consumption is based on estimates, not on the actual usage of the facility or units.

Provident Energy can install a small metering system (either electrical, natural gas, thermal, or water) into your recreational facility or commercial units. This type of metering system is also available to condominiums that currently do not have individual suite sub-metering. The cost will depend on the number of units and the number of loads required to be metered. For example, if there are 5 commercial units and each unit has 4 electrical loads to meter (in-floor heating, exterior wall heaters, heating/AC units, and suite power), then the entire project would require 20 meters.

The data will be available online for property managers and accountants to read and bill. The invoices will be issued by property management. Provident Energy will simply host the data over the internet, along with providing maintenance services to the meters as required.

For more information on these small metering projects, please contact the sales department at Provident Energy at 416-736-0630, extension 5.

A Case Study: Energy Management Systems

City Gate I is located in the heart of Mississauga at the corners of Burnhamthorpe and Duke of York Boulevard. Built in 2004, this gleaming tower was built without an Energy Management System (EMS) installed and the Corporation was looking for opportunities to generate energy savings and lower their operating costs.

Provident Energy installed an Energy Management System complete with monitoring services, in 2008. As there had been more than a three year period between construction and installation, this gave both Provident Energy and the Corporation a large amount of information to establish base year data, from which we could establish building consumption based on weather statistics.

As part of the Energy Management System, all mechanical aspects of the building were hard-wired to several control panels and in additional, Variable Frequency Drives were installed on the corridor fans. Through complex algorithms, we are able to optimize the efficiency of the building with day and night setback for heating and hot water, chiller on / off control, speed control for the corridor fans, optimizing heat rejection of the water cooled condenser on roof top package units, and sequencing control of gas-fired units.

This is only a small sample of the various control strategies implemented through EMS.

When the first year of EMS operation was complete, Provident Energy provided our standard energy savings report for the Board. For three consecutive years with the energy management system, (2008, 2009, and 2010), savings have been 12.5%, 13.77%, and 13.73% respectively. This amounts to \$75,479, \$80,685, and \$93,207* for each of the three years. (*these amounts have been normalized for weather)

Not only we were able to generate energy savings in the first year, but we have shown increased energy savings over the years. In addition to the energy savings, the EMS retrofit project received incentive rebates. Provident Energy estimated that the EMS project would have a payback period of three years - this was a very conservative estimate as the actual payback was significantly shorter.

While Energy Management Systems are often installed in new buildings, retrofitting buildings with these systems provides a definitive example of their worth. Clearly, in this case, the results have been outstanding and more than outstripped our original estimate of a three year payback.

The Provident Post Is Moving Online. We are slowly phasing out printed copies of the Provident Post - by the end of 2011, we will only be sending the newsletter through email. If you would like to be on our mailing list, please send your email information to info@pemi.com