

Case Study: Cumulative Savings

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Provident Energy recently completed yet another project with one of our long-term Clients. Located in Markham, Ontario, the Board has been very proactive in embracing new technologies and has a philosophy of continuous improvement.

The various measures completed over the years have included the very early adoption of Variable Frequency Drives and using this technology to achieve savings on the Cooling Tower and Corridor Fresh Air Make-Up Unit. The Corporation has also used an Energy Management System, recently updated to the latest state-of-the-art Siemens APOGEE System. Other measures have included LED lighting in exit signs, plus T-12 to T-8 fluorescent lighting conversions in stairwells and common areas. Some years ago, the Recreation Centre was converted from electric to natural gas heating.

The Corporation has also been a very early adopter of other technologies. The parking garage was recently retrofitted with motion sensors so that the majority of lights are on only when there is vehicle or foot traffic in the area. The garage was also retrofitted with a Carbon Monoxide Monitoring and Control System to minimize the run times of the garage exhaust fans.

The building has also completed a boiler retrofit with new high efficiency boilers which has lead to significant natural gas savings.

While these measures have been implemented over a period of years, there has always been the over-riding philosophy of "what can be done next?"

There is no question that these measures have all contributed to impressive savings figures over the years. Let's take a look at a few buildings so that we can appreciate what this means to the Corporation.

We have selected five buildings to compare. For our purposes, we have selected buildings of comparable size and configuration. For the purposes of our comparison, we are going to list these buildings by the number of measures that have been completed over the years.

Electricity

Corp	Measures	ekWh/ft ² /year
A	15	6.48
B*	12*	6.98
C	8	8.23
D	6	10.65
E	4	11.49

Natural Gas

Corp	Measures	M ³ Gas/ft ² /year
A	15	0.92
B*	12*	1.21
C	8	1.50
D	6	1.77
E	4	1.78

* Condominium located in Markham

We can clearly see that in our list, only one other building has a better performance benchmark than our 'Case Study' condominium. However, it should be noted that the first place building has completed more, but different, retrofits than this 'Case Study' building. Yet with some recent improvements, it may turn out to be a very close race for first place.

We would note Provident Energy is fortunate to have all of the five buildings listed as our clients. We would also note that virtually every one of these clients is currently under going some type of energy saving retrofit or has recently completed such a measure.

The results are clear and verifiable. A continuous program of improvement has its rewards.



Earth Hour 2009

Provident Energy is encouraging all of our clients to participate in this year's **Earth Hour** that is taking place on **March 28th at 8:30pm.**

This year, the WWF is urging the world to "vote Earth" by switching off their lights and is hoping to reach the target of 1 billion votes, which will be presented to world leaders at the Global Climate Change Conference in Copenhagen 2009.

Earth Hour began in Sydney, Australia, in 2007, when 2.2 million homes and businesses switched off their lights for one hour. In 2008, 50 million people around the world switched off their lights to support global sustainability. Global landmarks such as the Golden Gate Bridge in San Francisco, Rome's Colosseum, the Sydney Opera House and the Coca Cola billboard in Times Square all stood in darkness.

Provident Energy believes that we have the power to help the Earth. Show that you care by simply switching off your lights for one hour on Saturday, March 28 between 8:30-9:30pm. By spreading the word to all your friends and family, we can join together to celebrate Earth Hour.

For more information on Earth Hour 2009, visit www.earthhour.org

SpringFest 2009

Provident Energy will be exhibiting at the **15th Annual SpringFest** taking place at the Metro Toronto Convention Centre (North Building) on **Wednesday April 1, 2009**. SpringFest is an exclusive one-day event that includes free seminars, free refreshments, and networking opportunities with 150 exhibitors. Provident Energy will be exhibiting at booth #304 and we encourage all of our clients to stop by for a quick visit. Complimentary passes were mailed out recently – if you haven't received your package, please contact Provident Energy at 416-736-0630.

Occupancy Sensors in the Garage

Now that your garage has been retrofitted to a T8 lighting system, are there any other opportunities for energy savings with garage lighting? **Yes there is.** It is possible to implement occupancy sensors to control the T8 lighting throughout an underground garage.

Approximately 25-40% of the garage lights must remain on at all times as emergency lights. However, the other 60-75% of lights can have ultrasonic sensors be installed to turn on and off based on occupancy. The ultrasonic sensor analyzes the environment and adapts to meet specific challenges (i.e. operation of exhaust fans). Since the ultrasonic sensor is not dependant on infrared technology, obstructions such as columns and parking stalls do not affect the ability of this product. Also, with a reduced run time both the lamps and ballasts life span will increase dramatically.

Provident Energy recently installed occupancy sensors in a garage in the Markham area with great success. There are also motion sensors in a garage in the downtown Toronto area. For more information or for a quote on occupancy sensors, please contact Provident Energy at 416-736-0630 to schedule a free assessment of your garage.

Common Condominium Misconceptions

The following is a quick guide to help separate fact from fiction as it relates to common misconceptions surrounding condominiums.

Can I connect timers to my garage exhaust fans?

This practice was used to obtain electrical savings during low usage times of day and to minimize cold air being sucked into the garage in winter and excessively hot air entering the garage in summer. Timers were popular throughout the 1970's and 1980's. However, the Ontario Building Code requires that all Parking Garages receive a "continuous supply of fresh air" at a rate that varies with the floor area.

This requirement generally results in all of the garage exhaust fans having to be run continuously. Fortunately, the Ontario Building Code also permits the garage Exhaust Fans to be controlled by a CO monitoring system.

Is it true that the use of Compact Fluorescent Bulbs increase energy consumption?

Recent news articles have stated that the use of CFL bulbs will increase energy consumption due to the lack of heat they give off. An average incandescent bulb is rated for 60 watts; these bulbs are inefficient because the 60 watts they consume is not for lighting purposes alone, the 60 watts is both the electricity it takes to create both light and heat. The CFL equivalent to the 60 watt incandescent consumes only 13 watts; because the energy it consumes is strictly for light creation and not wasted on creating a minute amount of heat. In all actuality, the heat given off by a few incandescent bulbs, whether it is in a suite or common area, is negligible and is more than offset by the reduced cooling required.

Can I install motion sensors on my stairwell lights to conserve electricity?

Although the idea is noble, it is also against code. As it stands the stairwell lighting in a Condo is considered part of the Life Safety System, thus, motion sensors can not be connected to them. Any lights on the emergency circuit within the building like the stairwell lighting, 25-40% of the corridor and garage lighting cannot be interfered with in any way.

"You should change over both the corridor makeup air units and the in suite fan coil units at the same time."

In many facilities, it is possible to change over the suite fan coil units to cooling prior to changing over the corridor make up air units. Delaying the corridor change over will help to combat the extreme temperature differences between the warm days and cool evenings common during the spring months. This practice will also help to cut down on energy costs incurred during shoulder seasons.

Provident Grows Again!

Provident Energy would like to introduce Golam Faruqui as our new bookkeeper and Zack Alton as our engineering coop student. Please join us in welcoming them to the Provident Energy team.