

Peterborough Distribution and Local Team Up in Baseboard Heating

Older electric baseboard heating units can be extremely inefficient and as a result, very expensive to run. New technologies are emerging so that buildings that do not have ducting systems can turn to new heating alternatives.

In co-operation with the local housing authority, Peterborough Distribution Inc. has provided financial, technical and administrative assistance to convert 124 electrically heated units from baseboard electric heating to electric thermal storage heating.

The non-ducted heaters are designed to heat the room or area into which they are placed. During off-peak hours, heaters convert electricity into heat and store that heat in specially designed high-density ceramic bricks capable of storing vast amounts of heat for extended periods of time. A fan inside the unit circulates the stored heat evenly and quietly as the room thermostat calls for heat.

Heaters were installed at the top of stairs within the building and have been built to the same height as the existing retaining wall.

The initiative has helped to raise awareness of the benefits of energy conservation with

Peterborough Housing. The social housing organization was initially hesitant to move forward with the project because of the lack of upfront documentation substantiating the benefits that could be realized. The use of new technology associated with this program, made this a learning experience for both housing and utility personnel.

The results speak for themselves. The residential load profile found that with baseboard heat, consumption was off-peak for 34% of the total consumption. After the conversion to thermal storage electric heat, the off-peak consumption increased to 88% with the majority of the remaining portion being for hot water tanks.

The program has realized a number of other benefits, including:

- It has allowed Peterborough Distribution to add to their experience with shifting demand from on-peak to off-peak by using radio control signals through the SCADA program. They have been pleasantly surprised by how much of the load was actually shifted to off-peak by the implementation of the program.
- The utility has been able to demonstrate the savings to the social housing

authority because of the availability of smart metering and time-of-use rates.

- The initiative was successful in shifting consumption from on-peak to off-peak in partnership with the local municipality.
- The benefits of the project will continue to be realized for the remainder of each 18-year unit life.

The annual savings in electricity costs is approximately \$383 per unit or \$47,492 for the 124 units converted. Peterborough Distribution calculated this by taking a case study of 20 units and comparing the direct cost difference between time-of-use and price protected rates, as well as the overall shift of consumption to a reduced rate time period.

In the end, Peterborough Housing was very pleased with the results. Not only has the housing authority benefited with an upgraded electrical panel and heating system, but they are also realizing substantive savings on their heating bill.

Peterborough Distribution Inc. is the authorized distributor in the City of Peterborough, Village of Lakefield and the Village of Norwood.

Housing Authority Replacement Initiative

Lighting for Social Housing

A new initiative begun in the last quarter of 2006 involves the replacement of incandescent light bulbs with compact fluorescent light bulbs in 1,688 social housing units in the City of Peterborough. With a five-year life expectancy, or 8,000 hours of use, CFL bulb replacement is an uncomplicated and effective program with a large cost to benefit ratio.

An important component of the program is the education of social housing caretakers and tenants as it relates to the direct and indirect savings associated with the use of efficient lighting. Because many social housing tenants do not have to pay for their own electricity, it is often the tendency to replace burned out bulbs with less expensive incandescent bulbs. This has posed certain challenges that education is helping to alleviate.

The light replacement program has been received well by participating customers. In fact, it has been the utility's experience that most tenants are anxious to do their part in conservation. The lighting program continues to bring many benefits to the City of Peterborough, the tenants of Social Housing, and Peterborough Distribution Inc.



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