Community Centres & Pools

Energy Retrofit Case Study

Background

The City of Toronto contracted Toronto Hydro Energy Services to assess and implement energy retrofits to its community centres and indoor/outdoor swimming pools. Community centres and pools are often the activity hub of neighbourhoods where, through programs and services provided to residents by Toronto Parks, Forestry and Recreation, they serve more than 1.2 million participants and 6,000 community groups annually. Proactive management of energy use, as a result of the energy retrofit of facilities, will help contain the cost of providing these services and reduce the City of Toronto's environmental footprint.

Birchmount Community Centre

Alderwood Indoor Pool

The project is part of the Energy Retrofit Program that was approved by Toronto City Council in 2004 to reduce facility operating costs and deliver environmental benefits. Improvements include; installation of building automation systems, energy-efficient boilers, heat-recovery air systems and solar water-heating systems. The program also includes building operator training and monitoring of energy and evaluation of cost-savings for two years after completion of construction.

Project Summary			
Buildings:	52 Community centres 22 Indoor pools 21 Outdoor pools	**Annual Energy Savings:**	○ $710,348 ○ 1,413,651 kWh of electricity ○ 1,296,666 m^3 of natural gas ○ 2,735 tonnes of CO_2
		Total Budget	$6,000,000
Start Date:	March 2007	**Completion Date:**	December 2009

Description of the Work Implemented

Building Automation System

To keep energy use as efficient as possible, Toronto Hydro Energy Services installed a Building Automation System that ensures heating, cooling and lighting resources are deployed as needed, based on occupancy and activity requirements. Training to operate the system was provided to building operations staff.

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Energy-efficient Boiler

To maximize energy conservation, high-efficiency boilers replaced older boilers in a space-saving configuration. The new boilers provide hot water for showers, washrooms, change rooms, swimming pools, and other public spaces within community centres, along with heating.

Birchmount Indoor Pool

Heatsavr™ Technology

To save energy consumed when heating an indoor pool, Heatsavr technology uses a harmless chemical reaction to create a “blanket” over the water surface. This curbs heat loss due to evaporation by as much as 17 per cent, and also delivers better control of relative humidity, which saves on natural gas use. As a result, pool temperatures have been maintained without having to rely on the boiler for as long as four days.

Albion Pool – Glazed system

Swimming Pool Solar Water Heating Systems

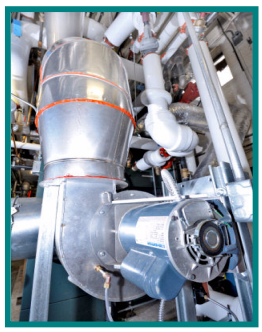
Four seasonal solar water heating systems, consisting of unglazed collectors, and one year-round, glazed system, were installed to reduce natural gas use for heating of pool water.

Weston Lions Pool – Unglazed system

Variable frequency drives were installed to optimize power consumption of fans and pumps.

Energy efficient heat recovery units were introduced for pool air-handling units that recover heat from exhaust air and re-use it to pre-heat fresh air intake.

Energy management training was provided to building operators.



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