



Park Lawn Outdoor Pool

87 kW_t Solar Pool Heating System

BACKGROUND

The City of Toronto chose to install a 87 kW_t solar pool heating system at the Park Lawn outdoor pool to collect heat from the sun and deliver it to the swimming pool. Designed to reduce the need for a conventional natural gas pool heating system, the system will function during the Spring, Summer and Fall when there is no risk of freezing.

FINANCIAL

Fifty percent of the project was funded by the City with a remaining 25% coming from Natural Resources Canada's ecoENERGY for Renewable Heat program and 25% coming from Ontario's Solar Thermal Heating Incentive program.

PERFORMANCE

The performance of the installed equipment was hampered by multiple data collection and operational issues. These included: closures due to municipal strike in 2009; improper monitoring equipment set up; unwanted operation during times when solar production was low (ie overnight) which produced cooling effects for the pools; equipment damage; loss of data due to lack of integration with central data collection systems; and unwarranted shut-downs due to site-operator error.

Despite the many challenges associated with these installations, some key lessons were clearly established including: the **importance of sensor placements and set points** – affecting times at which the pool is programmed to access the thermal heating – to the ability of the pool to make full use of available solar energy; the **susceptibility of solar pool heating systems to add unwanted cooling** to the pool due to inadequate check-valve systems; and the need to **ensure that on-site pool staff are engaged** and have a basic understanding of the system and the skills to do ensure that it is functioning throughout the pool season.

Please see the *Performance Review of Public Outdoor Pool Solar Thermal Heating Systems in the City of Toronto* for more in depth analysis.

For more information, contact:

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Project Overview

Owner: City of Toronto
Address: 340 Park Lawn Rd.
Building type and use: Outdoor City Pool
System type: Solar Pool Heating
System power rating: 87 kW_t
Installation date: October 2008
Installer: Solar Ontario

System Configuration

System surface area: 125 m²
Collector manufacturer: Techno-Solis
Pump: Pentair Intelliflo 4-160
Solar controller: Goldline Aqua SolarTC

Annual Performance

Estimated: 27,905 kWh_t

Financial

System Cost: \$36,645.00
Grants: \$18,250
Net System Cost: \$18,250
Cost per kW: \$210
Annual Cost Savings: \$1,801*
Simple Payback: 10.13 years

Environmental Benefits

Estimated emission reduction: 6.5 tonne eCO₂ /yr**

*based on 51 ¢/m³

**based on 1.86 kg eCO₂/m³

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