



Scadding Court Community Centre

100 kW Solar Wall Air Heating System

BACKGROUND

The City of Toronto's Scadding Court Community Centre contains a gym, a pool with change rooms, classrooms, café, daycare, and offices. The centre has about 200 daily visitors from Monday to Friday, and slightly more during the weekend.

As part of an energy retrofit in 2006, the City decided to install a solar wall. The solar wall consists of over 165 square meters of solar air heating perforated-plate collectors mounted on the south wall of the Community Centre. Ventilation fans draw in outside air, which then circulates through the collectors and is heated by the metal panels. The warm air passes through ducts to fans and warm, fresh air is distributed throughout the building.

The solar wall would provide better insulation, preheat the incoming air, reduce energy costs, provide adequate ventilation, and improve the building façade.

MONITORING

System monitoring is performed by Invensys VER-PXP-010 air flow stations on building supply air and bypassed air and temperature sensors embedded in air flow stations. Air flow stations and temperature sensors are used to calculate energy recovered from the Solar Wall. The data is stored by the BAS and was designed to be remotely downloaded.

PERFORMANCE ISSUES

Scadding Court experienced a number of issues such as closed dampers and inaccurate sensors that caused the solar wall to significantly underperform, relative to estimated performance. Please see the final report for a discussion of performance issues.

For more information, contact:

Joel Arthurs, Energy Management Analyst, Energy and Waste Management Office, City of Toronto
416-392-5177; jarthurs@toronto.ca



Project Overview

Address: 707 Dundas Street West
 Building type and use: Community Centre
 Owner: City of Toronto
 System type: Solar Air Heating
 Collector Manufacturer: SOLARWALL
 System Size (kW): 100
 System Size (sq. meters): 165
 Installation Date: November 2006

Performance

Estimated Performance: 122,800 ekWh/yr
 2007/2008 Actual Performance: 5,109 ekWh/yr

Financial

Installed Cost (taxes included): \$122,169
 External Funding: \$76,334
 Annual Savings*: \$4,368
 Simple Payback (excluding external funding): 28 years

*Based on estimated performance of 11,914 m³/yr natural gas reductions at \$0.367/m³

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