

Renewable Energy Case Study

Scadding Court Community Centre Solar Air Heating



Facility Profile

Scadding Court Community Centre, 707 Dundas Street West, has 4,338 m² (46,677 ft²) of space. It 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.

Before the retrofit was carried out in 2006, *heating* was supplied by forced-draft boilers; these supplied heated water to the building perimeter heating and heating coils in the ventilation system, as well as heating for the pool. *Ventilation* was provided by three air-handling units; one unit supplied air to the gym, one served the pool and a third one provided general ventilation for the building. There was no building automation system in the building.

The new Solar Wall combines a solar air heating system with improved ventilation.

Solar Air Heating System Implementation

- Approximately 165 m² (1,782 ft²) of perforated dark metal cladding was installed on the highly visible south-facing wall of the facility to provide solar heated ventilation air.
- The system supplements the existing heating system. Ventilation fans draw in outside air, which then circulates through the cladding and is heated by the metal panels. The warm air passes through ducts to fans and warm, fresh air is distributed throughout the building.

Benefits of Solar Energy Wall

- The solar energy wall captures as much as 80 per cent of the available solar energy.
- It reduces natural gas consumption, leading to cost savings and green house gas reductions.
- Introducing more fresh air improves indoor air quality, worker comfort and productivity.
- It also reduces building heat loss during winter.
- The SOLARWALL™ serves as new cladding and improves the building façade.

Project Summary	
Project completion:	2006
Total project cost (before grants):	\$122,169
Grants	\$63,550
Estimated cost avoidance:	\$4,368 /yr
Estimated natural gas savings:	11,914 m ³ /yr
Estimated renewable energy delivered:	122,800 ekWh/yr
Estimated CO ₂ emission reduction:	22 tonnes/yr
Project Funding: City of Toronto, NRCan, TAF	