GTAA Fire and Emergency Services Training Institute

GTAA Fire training facility - photo courtesy of Kleinfeldt Mychajlowycz Architects

GTAA Fire and Emergency Services Training Institute is a 3 storey building located on the grounds of the Toronto Pearson International Airport. The building consists of a wing of six classrooms with cafeteria and ancillary support spaces, a central block of washroom and change areas with four adjacent vehicle bays and one storage bay.

The GTAA Fire and Emergency Services Training Institute building has been selected for publication in the Justice Facilities Review by the AIA. This publication is distributed throughout the U.S. and will be available in September 2007. This is quite an honour for a Canadian project, given that few submissions are published and the competition includes all AIA members in the United States and Canada. The project will be the subject of an exhibit in New York at the AIA convention in September 2007. It has also been awarded a Canadian Institute for Steel Construction Award in the area of sustainability.

Energy Efficiency Measures

- Enthalpy recovery wheels on primary building ventilation air with average effectiveness 73% significantly reduce heating of outside air.
- Walls have overall resistance ranging from RSI 4.6 to RSI 1.6 (MNECB RSI-value is 1.9).
- The green roof above the classrooms has a pre-vegetated flat panel system 50mm thick on 150mm thick expanded polystyrene insulation. The estimated thermal resistance of the green roof was RSI 5.5. (MNECB RSI-value is 2.1).
- A natural gas fired boiler with 87% thermal efficiency heats water for space heating. Natural gas instantaneous water heaters produce domestic hot water with 82.3 % thermal efficiency.
- External solar shading devices are used outside windows facing south and west.
- The windows have thermally broken aluminum frames and double-glazing.
- Compact fluorescent fixtures are used in offices and occupancy controls are used in other spaces.
- Solarwall panels on south and west facing walls pre-heat outdoor air.

Caneta Services
Energy Modelling
Advising on energy efficiency

Performance
Energy Savings relative to MNECB: 30.9 %
Estimated annual energy savings: $16,222

Building Summary
Location: Toronto, Ontario
Completed: 2007
Building Area: 2,638 m2