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Five of six ASHRAE awards go to Canada

2011-11-29

In what is becoming a tradition, Canadian consulting engineering firms - particularly those from Quebec - have done extremely well in the international ASHRAE Technology Awards. Five out of six Technology Awards from the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) went to Canadian mechanical-electrical consulting engineers. Four went to consulting engineers from Quebec, and one to a consulting engineer in B.C.

Nathan Hart, chair of the judging panel, noted "Many of the entries this year incorporated innovations and technologies that took advantage of their specific geographical locations to provide more energy efficient systems -- helping to highlight that one size does not fit all and that a more energy efficient design solution may be available when considering the project as a whole."

Ken Sonmor of Ecovision Consulting, Montreal, received first place in the existing commercial buildings category for the IKEA Brossard Distribution Center in Quebec. Its features include extensive lighting replacements and a 160T geothermal system with a higher number of wells than average that maintain a very close approach with the ground temperature of 50 F. This higher temperature permits the reduction of glycol concentration which benefits the efficiency of the heat pump, the heat transfer through the vertical geothermal wells and lower pumping power. These improvements represent a 50 percent improvement over a traditional geothermal layout.

Roland Charneux, P.Eng. of Pageau Morel & Associates receives first place in the new commercial buildings category for the Mountain Equipment Co-op store in Longueuil, Quebec. The 22,600 sq. ft. single storey retail store uses structural insulated panels (SIP). Energy simulations said the wall provides energy savings of 54% and cost savings of 57%. Other features include air distribution from underground, a concrete slab for thermal energy storage, an underground rainwater collection cistern, and natural/hybrid ventilation.

René Dansereau of Dessau in Longueuil, Quebec receives first place in the educational facilities category for the HVAC design for the Université de Sherbrooke's Longueuil Campus. Its 16-storey glass tower is one of the tallest structures on Montreal's South Shore. Dessau's HVAC design connected a chiller to a geothermal system consisting of 37 vertical boreholes. The 165-ton screw chiller acts essentially like a heat pump and provides about 25 percent of the building's heating and cooling capacity. The building also has three enthalpy wheels were installed on new ventilation units and overall reduces its energy consumption by 46 per cent, saving over \$250,000 a year on energy invoices.

From B.C., Paul Marmion of Stantec Consulting in Vancouver receives first place in the new health care facilities category for the Abbotsford Regional Hospital and Cancer Centre. Built as a public-private partnership, the \$355 million hospital is a 63,000 m², 300 bed acute care facility with nine operating theatres, pediatric and maternity services, inpatient isolation rooms, medical imaging and radiation cancer treatment facilities. The building has two 900 ton chillers which are piped in a counter-flow configuration with chilled water temperature reset control to optimize energy efficiency, consuming a maximum of .5 Kw/ton of cooling. The hospital is running 56 percent below the Environmental Protection Agency's energy benchmark, using just 153 kBtu/ft² compared to the typical 350 kBtu/ft² for a similar building.

Luc Simard of Compressor Systems Control (CSC) in Les Coteaux, Quebec receives first place in the existing industrial facilities or processes category for the renovation of Arena Marcel-Dutil, St-Gédéon-de-Beauce, Quebec. In 2010, the arena was equipped with the first 100 per cent CO₂ based refrigeration system for ice rinks in the world. The system uses R744 as both a primary and secondary working fluid, a natural, non-toxic, non-corrosive and highly efficient refrigerant. Because there is no secondary fluid, the evaporating temperature of the CO₂ can be set at -7 C while keeping the ice sheet at -5 C. The result is an evaporating temperature higher than all other standard ice rink refrigeration systems.

Finally, the only non-Canadian winner was Blake Ellis, P.E., Burns & McDonnell, Kansas City, Missouri. He receives first place in the new industrial facilities or processes category for thermal energy storage at the Texas Medical Center, Houston, Texas.

ASHRAE, founded in 1894, is an international organization of 55,000 persons dedicated to advancing heating, ventilation, air conditioning and refrigeration technologies.

For more details about the ASHRAE Technology Awards, click [here](#).

Photos



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Caption: University of Sherbrooke, Longueuil Campus.

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