Institutional

CANMET - Materials Technology Laboratory

AIA Top Ten Project 2015

*This multi-award winning project features a large roof-angled SolarWall® system. It was recognized on the coveted AIA (American Institute of Architects) list of **Top Ten Projects of 2015** and also achieved **LEED® Platinum**.*

Background

CANMET (Canadian Centre for Mineral and Energy Technology) is Canada's premier research institution, employing 450 scientists and engineers who are dedicated to clean energy research and technology development. CANMET's new laboratory is located at Hamilton's McMaster University, representing the "crown jewel" in their new Innovation Park (MIP).

Natural Resources Canada (NRCan) was a sponsor of the new facility and clearly prioritized their goals for the complex, including the mandate to showcase sustainable technology in the heart of Canada's steel sector. With the target of LEED® Platinum in mind, one of the most striking renewable energy technologies to be incorporated into the facility was the large roof-mounted SolarWall® solar air heating system. NRCan has been a long-time supporter of the SolarWall technology and two other CANMET buildings feature SolarWall systems.

The globally-renown architecture firm of Diamond + Schmitt was hired to design the building. They have won numerous awards for their projects around the world, which include Four Seasons Centre for the Performing Arts in Toronto, the Ontario Science Centre, and the New Mariinsky Theatre in St. Petersburg.

Solution

Diamond + Schmitt designed the SolarWall® system on a 53 degree tilt from the roof on the south façade of the building. The angle was chosen for maximum system performance (to match the sun's azimuth during the winter months) and also to contrast with the wall-façade below. The grey SolarWall® system spans 7,590 ft^2 (705 m^2) and will provide heated ventilation air for the 174,000 ft^2 laboratory.

Results

The SolarWall system generated LEED points under EAC2 for on-site renewable energy and contributed to overall performance for EAC1.

The first field report on the performance of the SolarWall® system was taken in January of 2011 and it showed an average temperature rise of 16 C (30 F), which exceeded expectations. *"The SolarWall® provides a greater portion of the usable heating load than I had originally thought based on simulated testing using RETScreen and SWIFT... This is because the ventilation load is so large and runs at full [mode] during the day and at half during evenings and weekends"*

Mike Luben, NRCAN, Energy Modeller
(Member of the Integrated Design Process)

Canada
Conserval Engineering Inc.
200 Wildcat Road, Toronto, ON M3J 2N5
P: 416-661-7057 F: 416-661-7146
E: info@solarwall.com
www.solarwall.com

U.S.A.
Conserval Systems Inc.
4242 Ridge Lea Rd, Suite 28, Buffalo NY 14226
P: 716-835-4903 F: 716-835-4904
E: info@solarwall.com
www.solarwall.com

Europe
SolarWall Europe Sarl.
66 Avenue des Champs Elysees
75008 Paris, France
E: info@solarwall.eu
www.solarwall.eu