

Evolv1 Urban Office Building



First Zero Carbon Certified Building in Canada

“The design intention for the building was for it to speak to the public about innovation and sustainability, without being “green-washed.” Using SolarWall [heating] was always a feature that both the design team and client group were excited about, because it is so prominent on the façade as one of our strategies, but fits in perfectly with the high-tech feel we wanted to create.” - Olivia Keung, Architect, Stantec

Background

The very first building in Canada to be certified as a Zero Carbon Building under the Canadian Green Building Council’s Zero Carbon Building Standard is the Evolv1 Urban Office Building in Waterloo, Ontario. A SolarWall® air heating system was included as one of the key on-site renewable energy technologies, and was blended seamlessly into the south wall façade. The 110,000 ft² facility is one of the most beautiful and uniquely modern multi-tenant office buildings in Canada. Owned by the Cora Group, and designed by Stantec, it will set the standard for future commercial buildings in Canada.

The Zero Carbon Building certification means that the project has:

- Modelled a zero carbon balance for future operations
- Incorporated a highly efficient energy and ventilation system to meet a defined threshold for thermal energy intensity
- Achieved on-site renewable energy production to provide 105% of the energy usage

Solution

The SolarWall® air heating technology was specified to preheat the incoming ventilation air for this new building, reducing the use of fossil-based energy and helping to achieve the 105% onsite energy generation target. In total, just under 5,000 ft² (460 m²) of grey colored SolarWall panels were integrated into the south wall and the mechanical penthouse. The solar heating systems are key parts of the building façade, while also generating sizable amounts of on-site renewable heat energy.

The two SolarWall systems will heat 17,000 cfm of air and will displace 20,000 cubic metres of natural gas every year. They will deliver 206 MWh of renewable energy and will result in 42 tons of CO₂ being displaced each year. This means that over the 40 year lifespan of the systems and the building, it will eliminate over 1,600 tons of CO₂.

With SolarWall heating as the lead renewable energy technology on this first Zero Carbon Building, it showcases the widespread potential for solar air heating to help achieve all types of green building certification and on-site energy targets.

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