

MODELLING VISION

AN EDUCATION FACILITY
CASE STUDY

Armstrong Design Envelope solutions, integrated with custom-designed geothermal systems, deliver energy efficiency that is 50% better than National Energy Code requirements.

“Managers and maintenance staff from uOIT are delighted with the performance and reliability of the Armstrong equipment.”

Jim Metro
Partner,
Mutal Mechanical

The University of Ontario Institute of Technology

Designers created an innovative geothermal heating and cooling system linking each building to a central HVAC plant.

Background

The University of Ontario Institute of Technology (uOIT) is a unique learning facility brought to life through an integrated design process and a sustainable design agenda. From the outset, the vision for this project was to create one of the most sustainable campuses in Canada. Diamond and Schmitt Architects were asked to develop the campus plan and the designs for six new buildings. Mutual mechanical of Oshawa ON was in charge of the HVAC installation.

Throughout the design process both uOIT and the Diamond and Schmitt design team were focused on the following objectives:

- A vital, sustainable campus landscape
- Modularity and flexibility of the system
- Energy efficiency 50% better than the model National Energy Code
- Water conservation and storm water management
- Universal connectivity

Diamond and Schmitt incorporated a number of advanced features into the buildings, including green roofs, coated windows and an innovative geothermal system linking each building to a central HVAC plant and a well-field. Armstrong was offered the opportunity to contribute pumping technology to the geothermal installation.

Benefits

The uOIT installation is one of the largest geothermal well fields in North America with over 380 bore holes (700 ft deep) that are used to heat and cool the campus buildings. Glycol solution circulates through the underground network. In the winter, the geothermal system takes heat from the earth, and carries it to the buildings. In the summer, the same system removes heat from the buildings and disperses it into the ground. Because of their expanded performance range and part-load efficiency, Armstrong Design Envelope pumps and heat exchangers are ideal for this type of installation.

Asked about the success of the installation, Jim Metro of Mutal Mechanical: “Managers and maintenance staff from uOIT are delighted with the performance and reliability of the Armstrong equipment.”

Tech-facts

Equipment list

- (19) Design Envelope pumps with integrated controls
- Vortex air separator
- (6) Plate and frame heat exchangers

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