

IMPROVING AND PRESERVING

A HERITAGE SITE

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Evergreen Brick Works, Toronto, Canada

As the IPC 9500 system is controlling 12 Design Envelope pumps, Pump Manager, Armstrong's Active Performance Management service, tracks pump performance, providing diagnostics and web-accessible reports.

Evergreen Brick Works is a dynamic community hub that accommodates commercial and public uses. Design Envelope solutions have contributed to reducing carbon emissions generated by campus operations.

"I wanted intelligent pumps with Wi-Fi capability, because this is a complex facility and I have to be able to monitor operations from anywhere."

Alireza Anvari
Director of Facility Management, Evergreen

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Background

The Don Valley Evergreen Brick Works dates back to 1882 when red clay and shale were discovered in Toronto's Don Valley. The business operated for nearly 100 years, finally closing when the clay ran out in 1984.

Evergreen Brick Works is now a multi-purpose facility that serves as a tourism destination, family place, and the flagship location for Evergreen, a Canadian non-profit building resilient cities. The 53-acre property includes buildings constructed as a series of industrial barns that are now heritage-protected. Design efforts have resulted in a comfortable, sustainable complex that accommodates commercial and public uses.

Sustainability

As a part of renovating the site, management decided that Evergreen Brick Works should be a demonstration project for the decarbonization of buildings, conforming with the mandates of both Evergreen and the Future Cities project.

Engineers wanted to use geothermal and solar thermal. However, the heritage designation and flood plain both presented obstacles for these low temperature systems. The heritage authorities permitted only insulating the ceiling of the largest building, and the floodplain and environment protected areas limited possibilities for geothermal.

The site is managed by Alireza Anvari, who holds a Masters in Environment and Sustainability and is also Vice President of the Toronto Building Managers and Operators Association.

For the TD Future Cities Center Project called for redevelopment of Building 16, the so-called kiln building). Alireza chose Design Envelope variable speed pumps with Wi-Fi capability, so he could easily monitor operations remotely. Geothermal with hydronic in-floor delivery is the primary heating and cooling system. Solar thermal and heat reclamation systems provide supplementary heat.

Armstrong also provided start-up services, commissioning, and operator training. Alireza opted for the Pump Manager service, which tracks and manages pump performance, provides early diagnostic warnings, web accessible trend data and automated reports.

Benefits

Design Envelope solutions, along with geothermal and solar thermal approaches, among other initiatives, have contributed to making this multi-purpose campus comfortable and reducing carbon emissions. The industrial buildings on site have been repurposed as shops, cafes, offices, meeting rooms, program spaces and a year-round farmer's market.

"We are also sometimes referred to as a living lab because we're combining and testing different technologies in innovative ways." says Alireza. "For the most part, everything appears to be working beautifully!"

Technical Information

Design Envelope

- One IPC 9500 plant automation system with monitoring
- Two primary heating pumps
- Two secondary heating pumps
- Two condenser/ground loop pumps
- Two solar thermal pumps
- Two glycol heating pumps
- Two floor cooling pumps
- One circulator pump

Also:

- Pump Manager
- ECO*Pulse
- Three Vortex Air Separators
- Three Armstrong Expansion tanks
- Four Armstrong Plate & Frame heat exchangers