Geothermal system first of its kind in North America

By John McNeil
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A state of the art geothermal system not only enables the new Grant-Harvey Centre to generate its own heat and air conditioning, it's also able to supply nearby buildings, which city officials say makes the arena the first of its kind in North America.

"We supply not only the Grant-Harvey building itself with heat and air conditioning through that system, we have an underground distribution system that can allow us to provide that energy to third parties," said Wayne Tallon, Director of Community Services for the City of Fredericton.

Tallon said the system is already generating revenue for the city.

"We are already selling energy to the Capital Region Tennis Association, supplying heat and air conditioning to their facility next door," he said.

The unique system is the brainchild of Kube Solutions, a Dartmouth, N.S. based company specializing in ventilation and geothermal technology, and was installed by DORA Construction.

Ralph Ross, a consultant for Kube Solutions, says the project was completed with the support of a federal government energy efficiency initiative.

"The Grant Harvey Geothermal Project is funded in part by the federal government under a TEAM agreement that was established to invest in Technology Demonstration in support of early actions to reduce greenhouse gas emissions nationally and internationally while sustaining economic and social development," he said.

It's come a long way: This is what the Grant-Harvey Centre looked like when architect Malcolm Boyd led the media and city officials on a tour in April. The building opens officially on Sept. 28.

Tallon said to qualify for the program, the facility had to be designed according to certain specifications.

"Kube had to demonstrate that they could sell energy to a third party in a standalone building," he said. "We wanted to build a breezeway between the Grant-Harvey Centre and the tennis facility but we couldn't because that would have been considered part of the same building."

Ross says the system relies on re-capturing and reusing energy that is wasted in most arenas. The heat is captured and stored in 132 boreholes in the ground near the arena, he said.

"You take the heat from making ice and instead of wasting it out through a tower and into the air, you use it to heat the domestic hot water, the in-floor heat, the seats, the conference rooms and, even then, what is left over is sent down the road or across the street to heat or cool another building," he said.

The technology will enable the centre to consume less kilowatt-hours (kWh), and achieve 45 per cent savings on annual energy costs, Ross said.