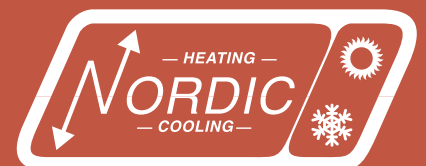


How Educational Institutions Benefit from Geothermal Installations



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Many modern educational facilities are designed to be open and student-centered with a focus on a range of learning styles, teaching methods and experiences beyond the classroom. Increasingly, institutional designs are moving towards providing spaces for students to collaborate, be creative and more actively engage with the material they're studying.

At the same time, budgets for education are becoming thinner and thinner. For architects and developers, incorporating as many cost-saving measures as possible is an increasingly important consideration during the design process. Geothermal is now more than ever the go-to option when it comes to efficient heating and cooling for forward-thinking educational institutions.

Maritime Geothermal Ltd. is proud that Nordic® heat pumps are installed in a number of schools, providing comfortable, consistent heating and cooling—and most crucially, saving these institutions much needed funds. Read on to discover how three schools are enjoying the benefits of geothermal heating and cooling.





Project Background

The Halifax Independent school was built in 2004, and designed to be a bright, welcoming environment that emphasizes the philosophy of active, experiential learning. Beginning its life as a “laboratory school” at Dalhousie University, the Halifax Independent School uses theme-based learning to help the children who attend the school learn and experience the world.

The 16,300 square foot building was designed by Lydon Lynch Architects, features ten classrooms, six co-operative workrooms, a double height music room, a library, a teaching kitchen and a lunchroom that also includes a mini-performance stage.

Quick Facts

- **Location** — Halifax, NS
- **Nordic Model** — W300
- **Unit Capacity** — 24 tons.
- **Units Installed** — 2
- **Total System Capacity** — 48 tons.
- **Unit Type** - Water-to-water
- **Unit Functionality** — Heating only units with domestic hot water.
- **Project Size** — 16,300 sq. ft.
- **Designed By** — Lydon Lynch Architects



Geothermal Advantage

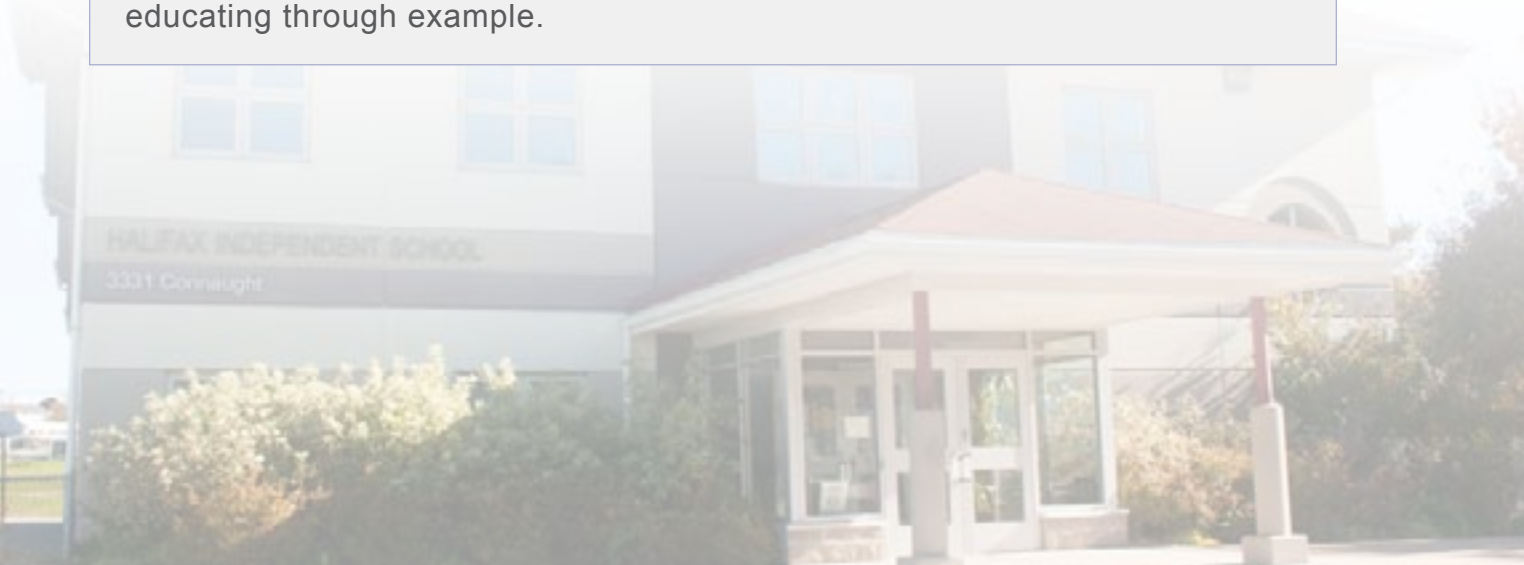
It was important for the Halifax Independent School to set an example about environmental responsibility for their students. The result of this leadership initiative was that, when it was time to build a new structure, it incorporated as many sustainable materials and components as possible to reduce their impact on the earth for the next generation.

The building incorporates two W300 water-to-water heating units to meet the heating and domestic hot water requirements for the building. This helps maintain low operating costs and a sustainable future for the school.

Other environmental elements that the school is using include walls that are “super insulated” to R20 and a roof insulated to R40. There are also large, energy efficient windows that make use of natural light and passive solar energy to provide even more sustainable energy.

The Result

The Halifax Independent School has completed eliminated the need for fossil fuels. They can now use the building as a way to instil in their students the importance of taking responsibility for the environment, achieving their goal of educating through example.





La Mosaïque du Nord School

Project Background

The school in Northern New Brunswick was designed for students from Balmoral, Dundee, Eel River Crossing and Saint-Maure. The 66,000 sq. ft. building can accommodate 315 students in its 16 classrooms. It also boasts a music room, an arts and science room, a technology room, a cafeteria and kitchen, a resource centre, an administration centre, and a gymnasium.

As residents of the town contributed \$288,000 towards this \$14 million project, it was imperative that the school was versatile enough to also function as a community centre. David Foulem Architects designed the project to incorporate numerous state-of-the-art technologies, ensuring that it was the most environmentally friendly structure possible.

Quick Facts

- **Location** — Balmoral, NB
- **Nordic Model** — W400
- **Unit Capacity** — 35 tons
- **Units Installed** — 4
- **Total System Capacity** — 140 tons
- **Unit Type** — water-to-water
- **Unit Functionality** — Heating only units, pasive cooling
- **Project Size** — 66,000 sq. ft.
- **Project Value** — \$14 Million
- **Designed By** — David Foulem Architects
- **Certifications** — LEED Silver Certified



Geothermal Advantage

It was important that La Mosaïque du Nord School was not only a dynamic and stimulating educational environment, but that it was an environmentally responsible gathering place for the entire community. It was therefore important to include many modern and sustainable features.

The modern design includes Nordic® heat pumps, low-flow water features and motion-activated lighting. This school draws on four W400 commercial water-to-water heat pumps, equating to a total of 140 nominal tons of capacity, to provide active heating and passive cooling as required by the season.

The Result

La Mosaïque du Nord has been recognized for its sustainability initiatives. Natural Resources Canada has recognized the school for its energy-efficiency, and it has been promoted as a green school. It has also met the requirements for and been awarded LEED Silver certification.





New Brunswick Community College

Project Background

When New Brunswick Community College required a building expansion for students undertaking programmes focussed on trades and renewable energy, but had a tight budget, they turned to plans from an existing building at the Bathurst campus, took advantage of electrical infrastructure already in place, and selected geothermal energy to lower operating expenditures.

This building will be home to students in numerous programmes, and the design is meant to encourage collaboration and creativity in its many multi-use trade shops, classrooms, common areas and study spaces. The renovation adds 1,489 square metres, and updates an existing 425 square metres. The building is unique in that it provides students access to demonstration equipment for geothermal heating, solar hot water and electricity, along with wind turbines and lighting technology.

Quick Facts

- **Location** — Bathurst, NB
- **Nordic Model** — W400
- **Unit Capacity** — 35 tons
- **Units Installed** — 2
- **Total System Capacity** — 70 tons
- **Unit Type** — Water-to-water heating or cooling (reversible) units.
- **Unit Functionality** — Simultaneous Heating and Cooling
- **Project Size** — 16,300 sq. ft.
- **Project Value** — \$4.7 Million



Geothermal Advantage

The building is heated with two W400 Nordic geothermal heat pumps. These industrial water-to-water units operate on 20 wells at a depth of 400 feet, providing heating, cooling and hot water.

The Result

Maritime Geothermal's heat pumps provide a great opportunity for students to learn about how renewable energy as they undertake related courses. There is a well available for educational purposes. This part of the installation features a "cut-away" section showing the in-floor circuit of glycol lines, and creates an opportunity for in-depth teaching offering students in related courses the chance to come away with first class knowledge on geothermal systems.

For more on how Maritime Geothermal Ltd.'s Nordic® heat pumps can impact your institution, call to **Speak with one of our experts** or **find your local dealer** today.

