

Case study

Northern Gateway Regional Division No. 10

Alberta, Canada



Performance contract improves learning environment while reducing operational costs and carbon emissions

Northern Gateway School Division operates 22 academic facilities in an area northwest of Edmonton in the province of Alberta. It includes 21 schools and one administrative building, totaling 770,000 square feet, and serves 5,685 students.

Challenges

- Create a high-performance learning environment, while contending with a decreasing budget.
- Maximize comfort, health, safety, operational efficiency and student achievement while reducing financial and technical performance risks.
- Reduce energy use and Green House Gas (GHG) emissions for improved environment and commitment to Natural Resources Canada Energy Innovators.
- Promote energy conservation and environmental preservation to the division.
- Connect all remote sites into a central network for control, monitoring, reporting and emergency alarms via computerized network.



Michael Gramatovich, secretary-treasurer, Northern Gateway Regional Division (left) and S. Botsford, principal, take advantage of their lighting upgrade, part of a \$1.4 million Johnson Controls Performance Contract.

"The guaranteed 'self-funding' relationship with Johnson Controls is a singular solution to our challenge to create high performance learning environments with decreasing funds."

**MICHAEL GRAMATOVICH,
SECRETARY-TREASURER, NORTHERN
GATEWAY REGIONAL DIVISION**

Solutions

- Installed Metasys® building automation system to provide long-term energy efficiency through improved environmental system control and upgrades.
- Expand existing performance-based relationship by implementing a 10-year, \$1.4 million Phase II Performance Contract to upgrade lighting, HVAC equipment and water technologies that guarantees financial and functional performance for the life of the contract term.
- Track and record reduced GHG emissions and utility savings for Canadian Voluntary Challenge Registry.
- Launch Johnson Controls Academy of Energy Education pilot program.

Results

- Centralized monitoring and control of HVAC equipment for energy-savings, winning the division a \$137,000 Energy Innovators grant.
- Reduced energy consumption for average annual energy savings of \$150,000.
- Achieved a significant reduction in GHG emissions with a savings of approximately 735,237 kilowatt hours of electricity per year.
- Initiated an energy education program in five schools at various grade levels to include students in energy conservation.

Partnering relationship enhances learning environment and saves money

Recognizing the need to reduce energy costs and GHG emissions, the board of trustees at Northern Gateway Regional Division No. 10 approved an energy audit of its facilities in the spring of 1998. Johnson Controls was selected from among four companies to conduct the study and implement the recommendations, due to their high level of expertise and proven performance on a previous project.

"We wanted to create a partnership with someone – an atmosphere where we share information," explained Randy Lovich, Director of Maintenance, Northern Gateway Regional Division. "We could see there was enormous potential for savings and we felt Johnson Controls offered the best option. They are knowledgeable, skillful people – very professional – and just tremendous to work with."

Johnson Controls evaluated the school division's facilities and made recommendations for upgrades, including HVAC equipment, controls network expansion, high-efficiency lighting renovations and motion sensors for water conservation that will save the division about 15% in energy costs – \$150,000 per year. The savings are guaranteed through a Performance Contract with Johnson Controls and are used to pay for the improvements. Plans to use the savings for future upgrades on items such as flooring are under

way. At the same time, the changes have created a more consistent and productive learning environment for the students by reducing noise, improving air quality and providing better lighting.

Centralized monitoring and control provides efficiency

"Because it's two hundred forty miles from one end of the division to the other, centralized monitoring and control of the HVAC equipment with direct digital control (DDC) was an important upgrade," according to Lovich. Johnson Controls Metasys building automation system provided the solution. Connected to the schools' wide area network, it enables the operations and maintenance staff to control the environment at each of its 22 academic facilities from the central monitoring station or a remote laptop. It also alerts staff to mechanical problems, enables diagnosis prior to a service call and allows preventive maintenance. The overall effect is a reduction of unproductive travel and an increase in the speed and efficiency of response to the facilities needs and problems. Lovich said, "staffing is lean, so the manpower savings provided by Metasys is crucial."

"Severe weather changes within short time periods are common in Alberta," commented Lovich. "Often that requires making changes that aren't programmed. With this system, it's easy to do that using a laptop, even after hours."

Additional funds garnered from government environmental program

On top of the savings generated through the \$1.4 million 10-year Performance Contract, Johnson Controls was instrumental in helping the school division obtain an Energy Innovators grant of \$137,000 from Natural Resources Canada. This is the first grant issued to a school division in Alberta, Canada, and will be used for additional upgrades needed by the district.

Johnson Controls is also helping students in grades K-12 learn about energy conservation through its Academy of Energy Education. The program features flexible and interesting energy education material and activities which teachers can integrate into their curriculum. In addition, Johnson Controls assisted in the development of an energy newsletter for teachers, students and parents. Northern Gateway Regional Division students write articles on how you can help the environment, create energy savings, and impact the community.

"The guaranteed 'self-funding' relationship with Johnson Controls is a singular solution to our challenge to create high performance learning environments with decreasing funds," said Michael Gramatovich, secretary-treasurer, Northern Gateway Regional Division. "The upgrades are making the schools more comfortable and efficient, while saving money and cutting emissions at the same time."



Randy Lovich accesses the entire Metasys building automation system from his laptop computer.

"Staffing is lean, so the manpower savings provided by Metasys is crucial."

**RANDY LOVICH, DIRECTOR
OF MAINTENANCE**

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