



Recommissioning (RCx)

Case Study - Adult Education Centre

Centre Saint-Michel, Sherbrooke (QC)



Centre St-Michel is an education centre for adults in downtown Sherbrooke. Built in 1948, the building has 5,700 m² of floor area and provides courses for an average of 860 students daily. Its energy consumption – similar to other schools in the same category – resulted in a bill of \$120,300/year. After completion in 2009, the RCx reduced the bill by 11% and focused mainly on the following electromechanical systems:

- Natural gas boiler of 590 kW (60 hp)
- Fifteen ventilation systems totaling 13,200 L/s (28,000 ft³/min)
- Cooling system of 66 tonnes (30% of the surface area is air-conditioned)

Savings for six other schools!

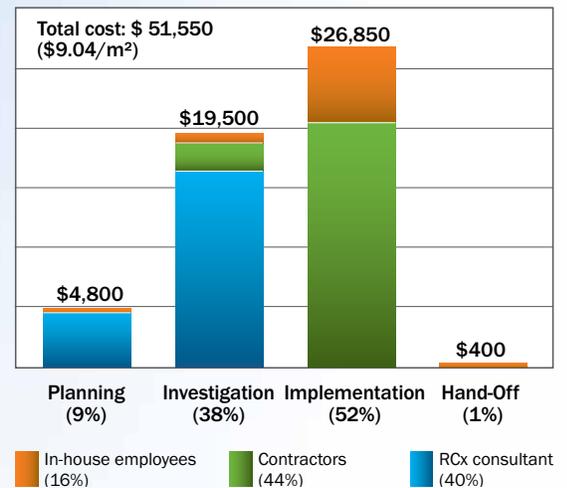
Anomalies discovered during investigation of the steam traps and control valves did generate immediate energy savings for Centre St-Michel while improving the preventive maintenance program for six other schools.

Reproduction of this RCx measure in six other schools will enable the generation of an additional annual reduction of 560 GJ (15,000 m³ of natural gas) and annual monetary savings of \$9,000 for the *Commission scolaire de la Région-de-Sherbrooke* [Sherbrooke Area School Board].

Results

- Energy savings¹: 763 GJ/year (12%)
(84% gas, 16% electricity)
- Monetary savings²: \$13,300/year
- GHG reduction: 42 t CO₂ e/year
(equivalent to 8 cars)
- Simple payback period³: 3.9 years

Cost breakdown



¹ Savings verified by an independent third party in accordance with the International Performance Monitoring & Verification Protocol (IPMVP) and standardized according to weather conditions.

² Monetary savings do not include non-energy impacts (NEIs) such as extended service life of equipment or increased comfort for tenants.

³ Includes all costs for the four phases of the project.

RCx winning measures		Annual savings
1	Correction of deficiencies in steam traps and control valves Implementation of a preventive maintenance program for steam traps and control valves that includes a monitoring log and the replacement of all defective equipment. Annual natural gas savings of 12,000 m ³ . Cost: \$7,800 Payback: 1.1 year	450 GJ/year \$7,200/year
2	Addition of a deadband between the heating and cooling setpoints Insertion of a deadband between the heating and cooling modes. Annual savings of 6,500 kWh of electricity and 1,500 m ³ of natural gas. Cost: \$480 Payback: 0.3 year	80 GJ/year \$1,550/year
3	Addition of a control point for the burner Connected the burner to the centralized control system and implemented a control logic based on outside temperature. Annual natural gas savings of 1,010 m ³ . Cost: \$500 Payback: 0.9 year	38 GJ/year \$570/year
Ten other RCx measures Cost: \$18,000 Payback: 4.5 years		195 GJ/year \$3,980/year

NB: Costs and payback periods include only the cost of materials and labour of implementation phase.

“This recommissioning project helped us to confirm that, despite the fact that we were already concerned about the efficiency of our schools, we could do better thanks to simple, inexpensive solutions. It is very rewarding for our operations and maintenance teams!”

Gilles Millaire, Director
Material Resources and IT Department
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Sherbrooke (QC), Canada

Free tools and guides:

- > Is your building a good candidate?
- > How do you start a project?
- > What grants are available?

www.canmetenergy.nrcan.gc.ca/eng/rcx.html

Stakeholders

Building owner and manager:
Commission scolaire de la Région-de-Sherbrooke

RCx consultant:
Technosim

Measurement and verification:
Econoler

Collaborator:
Ministère de l'Éducation, du Loisir et du Sport du Québec

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