

Rogers Centre



Precision Boiler Controls — A Win for Energy and Environmental Savings

“Enbridge’s incentive shortened our return on investment and helped drive this project forward.”

Dave McCormick
Engineering Manager, Rogers Centre

The Rogers Centre has achieved iconic status as home to the Toronto Blue Jays Baseball Club.™ It also plays host to a variety of high profile events throughout the year from rock concerts to motocross races. With 1.4 million square feet of space the Rogers Centre functions like a mini city housing a hotel, offices, restaurants and retail outlets in addition to the sports arena. This outsized presence has made the Rogers Centre one of Toronto’s largest energy consumers.

Since Rogers Inc. took over ownership in 2006 they have pursued an ambitious program of improvements to the 28 year old facility — not only to enhance the fan experience but also to reduce environmental footprint. As Dave McCormick, Rogers Centre’s Engineering Manager, puts it, “There are a lot of eyes on us and it is important that we lead by example.” Completed energy saving projects include a state-of-the-art lighting retrofit, modulating ventilation controls, and updated chillers.

The giant complex features two boiler rooms, each equipped with one 500 HP and one 600 HP Cleaver Brooks hot water fire-tube boilers. Fall through Spring operations make for a substantial space heating load. And ventilation heating requirements can be massive, especially when motocross events are held. Before the upgrade each boiler was controlled by a single modulating motor driving a jackshaft which in turn was linked by rods to the natural gas valve and air damper. These mechanical controls were outdated and unreliable, compromising the system’s efficiency. McCormick and Kevin Kingston of boiler service firm Johnson Paterson Inc. identified linkage-less controls as a potentially valuable upgrade that would fit with Rogers’ environmental game plan.

Every building project at the Rogers Centre must pass review by the facility’s capital committee. This calls for a strong business case. McCormick and Kingston contacted their Enbridge Energy Solutions Consultant to provide trustworthy projections of the energy savings, prepare payback scenarios, and determine what level of incentive could be applied under Enbridge’s Custom Commercial

Retrofit Program. Enbridge's expertise and incentive helped sell the boiler controls upgrade within the competitive ranking system and the project received the green light in early 2016.

Moving from mechanical to electronic combustion control

Just as fuel injection displaced the carburetor in cars, electronic controls are setting the new standard for combustion management. Siemens LMV5 series linkage-less controls, supplied by Carremm Controls Ltd, were installed on all four boilers at the Rogers Centre in the summer and early fall of 2016, ready for the heating season. Separate digital directed servo motors now control the air dampers and the natural gas valves. This allows for electronic precision in maintaining the optimal fuel to air ratio as system demand changes. Better burner turndown allows for smaller load conditions with fewer boiler off cycles. A cold plant start feature (gradual warmup) prevents thermal stress on boiler tubes. The LMV5 system includes a leak test function on the boiler's safety shut-off valves.

The new system showed its advantages in its first winter in operation. The precision control ramped up the operating efficiency of the boilers and cut natural gas bills. The linkage-less controls are tied in to a software system that allows engineering services to monitor combustion settings from locations outside the boiler room, freeing up staff time to devote to preventive maintenance.

Results

- Estimated 67,419 m³ annual natural gas savings
- CO₂ (greenhouse gas) reduced by 126.1 tonnes over the life per year of the unit
- Improved boiler safety and reliability
- \$11,659 Enbridge Custom Commercial Retrofit Incentive

The state-of-the-art system is efficient and cost-effective. Even with today's low natural gas prices utility bill savings will amount to around \$25,000 dollars annually. The Enbridge incentive dropped the payback on the project by nearly a half year.



Enbridge Energy Solutions Consultant Jeffrey Blunt and Rogers Centre Engineering Manager Dave McCormick with Emilio 'Gyp' Gismondi, General Manager of Carremm Controls Ltd. and Kevin Kingston, Vice President of Sales at Johnson Paterson Inc.

Raise your energy savings game with Enbridge support

Enbridge's Custom Commercial Retrofit Program connects you to the resources you need to evaluate and support a wide variety of custom energy efficiency upgrades.

- Energy Solutions Consultant advises, determines project eligibility, and manages the paperwork from start to finish.
- Technical modelling determines expected natural gas savings as well as project paybacks and greenhouse gas impacts.
- **NEW tiered incentives** step up as gas savings grow.

Eligible projects can qualify for incentives of up to 50% of project cost.¹

For more information:

1-866 844-9994

 energyservices@enbridge.com

 enbridgegas.com/commercial



¹ Incentives are calculated based on projected first-year natural gas savings relative to total annual gas consumption prior to retrofit. Total incentive not to exceed \$100,000.