

De La Salle College Arena



Cutting Edge Ice-Making Technology Slashes Energy Costs

“This project wouldn’t have happened without Enbridge’s Energy Leaders incentive and the support of their Energy Management Consultant.”

Scott Barber, Facility Manager
De La Salle College Arena

De La Salle College “Oaklands” is a private, independent Catholic school in Toronto. Its well-maintained, single pad arena is busy with student activities every school day from September through June. After school hours and in the summer the facility attracts a wide range of paying users from recreational teams to film and TV shoots. Profits from ice rentals go straight into a scholarship fund.

Facility manager Scott Barber reports to the president of the college and an arena board and also works closely with the school’s Controller to plan capital expenditures and keep operating costs down. Energy is always a big part of the cost equation.

Barber is always looking for innovative ways to improve the arena’s energy and environmental performance. Over the years he has made three lighting upgrades, installed a low-emissivity ceiling, put in occupancy sensors in change rooms, and added desiccant dehumidification.

Traditionally, ice is made and resurfaced using hot water because higher temperatures drive out dissolved oxygen — gases that would weaken the ice. With fourteen rink floods a day in winter each using 110 to 120 gallons of water at a temperature of between 140° F and 160° F (60° C and 71.1°C) hot water heating was a major driver of De La Salle arena’s gas costs.

Barber knew there was no reason why they couldn’t make quality ice with cold water if there was a reliable way to get the oxygen out without removing all the minerals that are also needed for optimal conditions.

An innovative technology, the **De-Ox Ice Making System**, promised both energy savings and excellent ice quality if the college administration would approve the capital expenditure.

Enbridge’s new **Energy Leaders** incentive was the deciding factor. When Barber told De La Salle’s president that the new technology would qualify for a 50% rebate of the equipment cost, his response was “**We can’t afford not to act on this.**”



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The **De-Ox System** was installed in January 2017 enabling a complete switch to cold water for all ice resurfacing runs. In April the ice sheet was taken down and rebuilt — also with cold water.

In the first five months of use Barber saw his natural gas bill cut in half. Electricity use is down as well because the ice surface can be kept at a higher temperature, reducing compressor runs. The energy savings make for a substantially reduced carbon footprint. And cold water resurfacing has enhanced playing conditions. The ice freezes quicker and harder, the surface stays dry, and lines are crisp and bright.

De-Ox Ice Making System takes oxygen out of cold water

The **De-Ox Ice Making System** is manufactured in Innisfil, Ontario and distributed in North America by Joe Johnson Equipment.

The wall-mounted unit is connected at the water intake. It uses a vacuum pump to draw dissolved oxygen through special membranes, leaving the gas-free water to flow on to the hose outlet. At 20 psi to 25 psi water pressure, dissolved oxygen is completely removed while minerals are retained for good ice grain.

Results¹

- Estimated 15,235 m³ annual natural gas savings
- 19% reduction in normalized gas load
- CO₂ (greenhouse gas) reduced by over 29,000 metric tonnes
- Electricity savings from reduced compressor runs
- \$18,973.63 Enbridge **Energy Leaders** incentive

Using cold water for ice resurfacing also reduces costly electricity demand spikes. Overall energy cost savings of several thousand a year make for an attractive project payback — one further reduced by the **Energy Leaders** incentive.

¹Enbridge models natural gas and electricity savings based on average temperatures over the course of a year. Actual savings will vary with weather conditions.



Scott Barber, Facility Manager for De La Salle College Arena; Jeffrey Blunt, Enbridge Energy Solutions Consultant; Steve Dawe, Arena Products & Services Manager for Joe Johnson Equipment, with the **De-Ox Ice-Making System**.

Take advantage of our Energy Leaders offer

Enbridge's new **Energy Leaders** initiative rewards and showcases our commercial and industrial customers who install leading edge technologies for incremental energy savings.

The initiative is aimed at customers who have already installed typical conservation measures and want to gain further energy savings. If you have identified an innovative technology that you would like to explore or if you would like some help to identify and assess new energy saving technologies for your facility, contact your Enbridge Energy Solutions Consultant.

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

For more information:

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