



# Humber College reduces energy consumption with new green chiller technology

## CASE STUDY

### Humber College

#### PROJECT STATISTICS

Humber North Campus with 719,000 sq. ft. cooled by plant

**Before:** constant speed chiller plant

**After:** variable speed chiller plant with Hartman Loop controller

**Annual electricity savings:**  
449,937 kWh

**Annual electricity demand savings:**  
318.1 kW

**Annual CO<sub>2</sub> savings:**  
Approx. 443 tonnes

**Project cost:** \$2.88 Million

**Annual cost savings:**  
Approx. \$44,994

Project results have been verified by a third party project evaluator according to industry references and the International Performance Measurement and Verification Protocol (IPMVP)



Established in 1967, Humber College encompasses three campuses with approximately 2 million square feet. Home to approximately 20,000 full-time, 55,000 part-time and 2,000 apprenticeship students, the college operates 14 hours a day, 6 days per week, for most of the year.

Since 2001, Humber College has undertaken several projects to help reduce the school's energy consumption, including upgrading to a lighting system that uses motion sensor technology and installing variable speed drives for fan and pump systems.

In 2006, S.A. Armstrong Ltd. presented Humber College with another opportunity for cost savings and reductions in energy consumption at the North Campus, and to help reinforce Humber College's status as one of Canada's greenest schools. Humber College leveraged the project by participating in the Better Building Partnership (BBP) funded by the Ontario Power Authority. Similar incentives can be found through **saveONenergy** incentive programs.



**“By replacing the two existing chiller units with the Hartman Loop chiller system, we will reduce our environmental footprint by 443 tonnes of CO<sub>2</sub> annually – that’s the equivalent of taking 100 cars off the road, or taking 150 homes off the grid.”**

Carol Anderson, Director of Facilities

### **Innovative chiller technology delivers immediate results**

With current energy prices trending higher and the possibility of additional increases in future, Humber College must manage its resources carefully to ensure that facilities are operating as efficiently and environmentally responsible as possible.

Today, there is increased pressure for Humber College to invest in infrastructure upgrades that will reduce its carbon footprint with lower greenhouse gas emissions.

With the help of their subcontractor, S.A. Armstrong Ltd., Humber College sought to reduce the carbon footprint of its North Campus and minimize energy operating costs through an innovative energy-efficiency upgrade.

### **\$127,240 incentive lets Humber College do more**

Humber College developed a \$2.88 million program to replace the 35-year old chiller system at the North Campus with an innovative system called the Hartman Loop. They took advantage of an energy saving incentive of \$127,240, which enabled Humber College to do more with their budget.

The Hartman Loop system uses three new 550-ton chillers with integrated plant control technology that is 50 per cent more efficient than Humber College’s two former chillers that ran on harmful chlorofluorocarbons (CFCs).

### **Annual electricity consumption down by 449,937 kWh**

The Hartman Loop chiller system resulted in a reduction in annual electricity consumption at Humber College’s North Campus – 449,937 kWh. The program is also expected to trim utility bills by \$44,994 per year. The \$127,240 in financial incentives allowed Humber College to reach a new standard in fiscal and environmental responsibility.

“The existing chiller system was a drain on the environment and our facilities were in serious need of an upgrade,” said Carol Anderson, Director of Facilities. “By replacing the two existing chiller units with the Hartman Loop chiller system, we will reduce our environmental footprint by 443 tonnes of CO<sub>2</sub> annually – that’s the equivalent of taking 100 cars off the road, or taking 150 homes off the grid.”

## **Toronto Hydro Incentive Programs**

Toronto Hydro offers **saveONenergy** programs that provide financial incentives and technical assistance to help improve your energy efficiency. With programs available for commercial, institutional, multi-residential and industrial buildings, conservation can be an attractive investment opportunity with excellent returns. Discover your best energy-saving opportunities by starting with an energy audit and then apply for the appropriate incentive programs for further funding.

Visit [torontohydro.com/business](http://torontohydro.com/business)

for more information or to apply online for **saveONenergy** programs.

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