

# CASE STUDY: HUMBER COLLEGE

## BETTER BUILDINGS PARTNERSHIP



**Humber College**  
North Campus  
205 Humber College Blvd.  
Toronto, Ontario

Carol Anderson  
Director of Facilities,  
Humber College

Spencer Wood  
Manager, Maintenance  
& Operations, Humber College

Consultant:  
S.A. Armstrong Ltd

### Project Snapshot

Project cost: \$3 Million  
Annual electricity savings:  
670,000 kWh  
Annual cost savings:  
\$104,000  
Annual CO<sub>2</sub> savings:  
645 tonnes  
BBP Incentives: \$157,600

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

### Project Background

Established in 1967, Humber College encompasses three campus locations, representing 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.

With its facilities continually expanding over the last forty years, Humber College has been a leader in Canada in making long-term commitments to reducing energy for the last decade. Since 2001, Humber College has acted on several opportunities to help reduce the school's energy consumption, including upgrading to a lighting system that uses motion sensor technology, variable speed drives for fan and pump systems.



In 2006, S.A. Armstrong Ltd. presented the College with an opportunity that would result in substantial cost savings and reductions in energy consumption at the North Campus, and reinforce Humber College's status as one of Canada's greenest schools.

### Desired Outcomes

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

As a proponent against climate change, there is an 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 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.



The installation of the Hartman Loop will reduce energy consumption during periods of decreased College occupancy, and enable cooling earlier and later in the spring and fall.

### Solution and Results

Humber College developed a \$2.8 million program that would see the replacement of the 35-year old chiller system in the North Campus with an innovative system called the Hartman Loop. They consulted Toronto's Better Buildings Partnership to access the energy savings incentives that the program offers, enabling the College to do more with its budget.

The installation of the Hartman Loop at North Campus is the first of its kind in Canada. The System uses three new 550-ton chillers in conjunction with integrated plant control technology that is 50 per cent more efficient than the College's two former chillers that ran on harmful chlorofluorocarbons (CFCs). The installation of the Hartman Loop will reduce energy consumption during periods of decreased College occupancy, and enable cooling earlier and later in the spring and fall.

The installation of the Hartman Loop chiller system resulted in a drastic reduction of the annual electricity consumption at Humber College's North Campus by 670,000 kWh. Furthermore, the program is expected to trim utility bills by \$104,000 per year. Utilizing \$157,600 in financial incentives from the Better Buildings Partnership, Humber College has succeeded in reaching a new standard in fiscal and environmental responsibility with the installation of the Hartman Loop technology.

"The existing chiller system was a drain on the environment and our facilities were in serious need of an upgrade," said Carol Anderson, Humber College's Director of Facilities. "By replacing the two existing chiller units with the Hartman Loop chiller system, we will reduce our environmental footprint by 645 tonnes of CO<sub>2</sub> annually – that's the equivalent of taking 129 cars off the road, or taking 195 homes off the grid."

### About the City of Toronto

Toronto is Canada's largest city and sixth largest government, and home to a diverse population of about 2.6 million people. It is the economic engine of Canada and one of the greenest and most creative cities in North America. Toronto has won numerous awards for quality, innovation and efficiency in delivering public services. Toronto's government is dedicated to prosperity, opportunity and liveability for all its residents.

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Carol Anderson,  
Humber College's Director of Facilities



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PARTNERSHIP**

For more information  
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