

# Beating the humidity

BY KEN CAMPBELL

Fans of the Toronto Maple Leafs certainly weren't seeing much of an improvement in the product on the ice through the early part of this season, but at least the team was blowing leads and losing games on a better ice surface than in the past.

Although the Air Canada Centre in Toronto has always claimed to be in the top one-third of ice surfaces in the NHL, the players certainly haven't been near as effusive in their comments. Both Maple Leaf players and opponents have complained about how slow and soft it has been almost since the day the building opened in February, 1999.

Maple Leaf Sports and Entertainment can't do much about the building being used for basketball and concerts, so they decided to take a monumental step toward improving the ice by addressing the humidity around the ice surface. The result is a \$4-million system that, in the words of Brian Leslie, director of building operations for MLSE, "gives us all the tools we need in our toolbox to make perfect ice."

Until this season, the Air Canada Centre used a traditional coil-based

degrees Celsius), but found it was uncomfortable for the fans. It also made the ice colder, but that compromised its quality.

For two years, MLSE worked with both The Mitchell Partnership and EI Solutions to figure out how to make its ice better. And this past summer, when workers cut a 20-by-20 foot hole in the roof of the building and installed two massive new dehumidifiers, it represented the culmination of their efforts. The Mitchell Partnership was the mechanical engineering consultant on the project and EI Solutions is the commercial distributor of the unit, which is manufactured by Munters Moisture Control Service, a company that specializes in water damage recovery equipment.

"This technology has become more identified as a way to treat ice arenas," said John Gowing, director of sales and marketing for EI Solutions. "We have it in a number of smaller venues such as junior rinks. The new arena in Windsor will be equipped with this technology."

From a layman's perspective, the system dries the air to a level where it would be on a typical January

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dehumidifying system in the building, basically a larger version of what most people use in their homes and cars. The problem was that with a building the size of the ACC and its propensity for being frequently being sold out, conventional methods weren't able to keep up with the standards the NHL requires. MLSE turned the arena temperature down to about 55 degrees Fahrenheit (13

degrees Fahrenheit) in most cities in Canada or the northern U.S. The NHL requires the temperature surrounding the ice surface be no more than 60 degrees Fahrenheit with a relative humidity of 40 per cent, which results in a dew point of 35, just above freezing.

The new unit allows the ACC to do that much more efficiently, particularly during what Leslie describes as the "shoulder months,"

the fringe months of the season in spring and fall. What it also does is allow the ACC to keep the ice temperature warmer, which makes for a much smoother, faster surface.

Leslie said on a typical night at the ACC, 7,700 pounds of water per hour is emitted into the atmosphere, 6,200 pounds by fresh air and 1,500 by the people occupying the building. There are two units in the ACC and each removes 4,300 pounds of water per hour for a total of 8,600 pounds of water per hour.

The units are each about 13 feet high and 60 feet long and contain the traditional coil-based air conditioning system. But after the air passes through that, it goes through what is known as a desiccant wheel rotor, which resembles bubble wrap that is impregnated on a wheel that is 12 feet high, 16 inches deep and rotates eight times a minute.

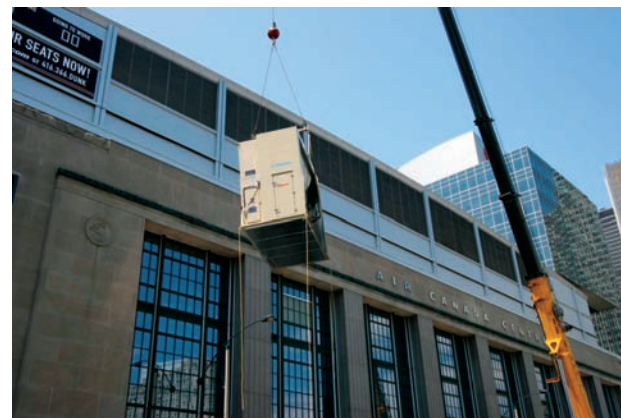
The desiccant wheel acts like a dry sponge, further removing humidity and vapors from the air before blowing it back out into the atmosphere.

There are other buildings that have the system, but not to the scale of the Air Canada Centre. The RBC Center in Raleigh has 12 smaller units that are mounted throughout the building and the results have been favorable. The St. Pete Times Forum in Tampa Bay and the BankAtlantic Center in Sunrise, Fla., have three small units each, but size limits their abilities.

"There's enough capacity to keep the glass from fogging up," Gowing said, "but it's not enough to make an appreciable difference to the ice surface."

The players are encouraged by the early results.

"In all honesty, it's a tough building to keep the ice going the way you'd like it to be," said Leafs center Alex Steen. "But I definitely notice a difference." HBN



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