Air Canada Centre Passes the Puck to Munters

Munters dehumidification technology contributes to ice center's rank as a top NHL arena

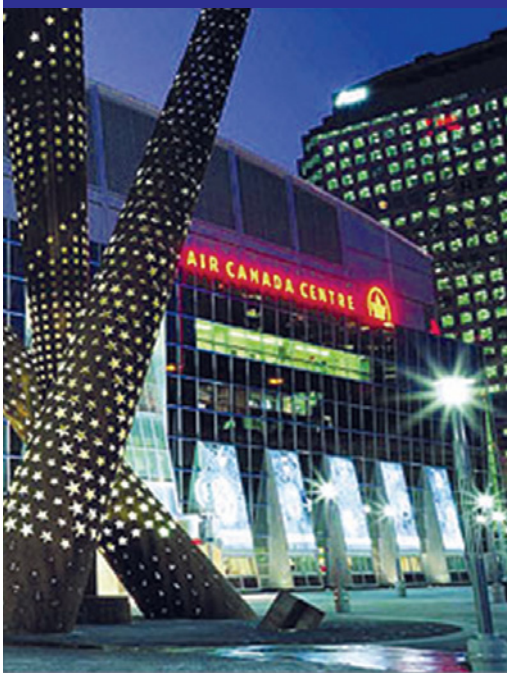
Struggling to overcome humidity issues, the Air Canada Centre (ACC) in Toronto, Ontario underwent a $4 million retrofit project for the 2007-2008 ice hockey season. Renovations included a Munters desiccant dehumidification system to improve humidity levels in the arena and on the ice. Shortly after the installation of the dehumidification equipment, the ACC's ice surface was ranked fourth amongst NHL arenas; compared to its 20th place ranking last year.

The Faceoff

Home to the Toronto Maple Leafs, the ACC originally opened its doors to 20,000 spectators in February 1999, but had since faced the challenge of creating a safe and comfortable indoor ice arena environment for skaters and fans. The arena's toughest opponent, humidity, jeopardized the quality of the ice rink's surface.

In the summer of 2007, two Munters dehumidifiers were installed at the Air Canada Centre to successfully treat the air to meet NHL ventilation requirements.

CASE STUDY:
Air Canada Centre



BENEFITS

- High-Quality Ice Surface
- Reduced Energy Costs
- Increased Player Safety
- No Fog
- Reduced Maintenance Cost
- Improved Occupant Comfort

Munters

In highly humid arenas, moisture continuously condenses on the rink, ice softens to form puddles until the arena's refrigeration system freezes the condensation. Additionally, condensation "slows down" the ice and the hockey players' skate action, leading to an excess accumulation of snow, uneven ice and a low-level fog, all of which dangerously compromise skater safety. Conventional methods to remove moisture include a promoted sub-cooling of the supply air. However, cooling to a temperature of 55°F (13°C) creates a "cold and clammy building" making it uncomfortable for spectators. With these potential issues at hand in the ACC, hopes of a successful season for the Maple Leafs looked lost.

"We wanted to be the best on the ice and have the best ice." says Toronto Maple Leafs' former VP and General Manager, John Ferguson.

Complaints about the rink sent the Maple Leaf Sports and Entertainment (MLSE) Ownership Group looking for answers to better regulate the arena's indoor conditions. An MLSE consultant approached EI Solutions in 2004 to research the possibility of adding desiccant dehumidification to their NHL venue.

The Game Play

MLSE and EI Solutions spent two years working to create a better ice environment. To balance spectator comfort and acceptable ice conditions, NHL recommends hockey games to begin with indoor conditions of 60ºF-db and 40% RH (31 gr/lb). At the end of the game, conditions should not exceed 65ºF-db and 40% RH (37 gr/lb). The challenge for the proposed ACC dehumidification system was to provide adequate ventilation while supplying a sufficient flow of air dry enough to offset the latent load of 1,500lbs/hr of moisture released by spectators.

The dehumidification requirements called for two Munters systems with desiccant rotors (140"dia x 400mm deep) that could deliver 60,000 cfm per unit of conditioned air below 6 grains. The desiccant rotor works like a sponge, adsorbing the moisture and releasing the dry air into the arena. Each unit, which is equipped with chilled water pre and post-cooling coils, has the capacity to remove over 4,300 lbs. of moisture from 100% fresh air and maintain the space within NHL Guidelines.

Directly Above: The dehumidification system had to be hoisted on to the roof of the ACC by crane in three pieces.
Right: One of the two units installed.
Top Left: Low-level fog obscures the ice action and leads to safety problems.

The Victory

Enthusiasm was high as the installation was completed in time for the start of the new 2007-2008 season.

"We were anxious to get the season started to show what this equipment and we as a team can do," says Diego Roccasalva, Vice President of Building Operations, Maple Leaf Sports & Entertainment Ltd.

With the new dehumidifiers in place, the ACC is kept at an optimal 40% rh, making the rink's temperature warmer to not only create a smoother, faster and safer skating surface for the Maple Leafs, but also a more comfortable environment for spectators.

"It's better for our players, better for the quality of ice and better for our fans," remarks Ferguson.

The units allowed the ACC to achieve the appropriate dewpoint and humidity levels more efficiently than before, even during the off season in the spring and fall.

As other large venues witness the success achieved at ACC, interest will peak with those also struggling to overcome the same humidity issues as those at the original ACC.

Munters Corporation
Tel: (800) 229-8557
E-mail: drycoolinfo@munters.com
www.munters.us

Munters

CS0029-00 06/08