

The strange world of temporary HVAC



Big chillers and miles of piping kept the ice surface frozen for the Red Bull Crashed Ice competition in Quebec City.

Providing heating and cooling in a unique niche market

By Bruce Nagy

Eeek! If you've got spooks call the Ghostbusters, but for emergency or temporary heating, cooling, humidity control, or power; there's a whole industry to help panic-stricken customers with technology and personnel in a hurry.

The HVAC rental business is quickly expanding; a crazy world of movie studios, sports organizations, wildlife, or ordinary building contractors; who could need added equipment at any hour of any day. Industry veterans say they can try to take a day off, but they keep their phones on because customers don't have time for a voicemail message.

Hollywood North

In 2011 Universal Studios did a remake of "The Thing," with some scenes shot on an unsealed set in a Toronto film studio that had no HVAC system. In the movie a team of Antarctic scientists find something mysterious and bring it back to a research station still encased in ice.

"So in the middle of July we kept a four by four by six-foot (1.2 x 1.2 x 1.8m) block of ice from melting under movie lights for four days," says Dustin Hubert, operations manager for LM Temperature Controls in Toronto. "We used a glycol system and low temp air handler with defrost cycle so the coil wouldn't freeze. It kept the set around zero degrees Celsius so they could shoot these scenes."

Fighting terrorists

In 1993, eight years before the twin tower tragedy, terrorists tried to take out the World Trade Centre by detonating a 606 kg truck bomb in the underground parking lot. It killed six people and knocked out the mechanical system.

Carrier Rentals was soon called and asked if they could provide emergency conditioning for a 110-floor skyscraper. "We said yes, without really knowing how we would do it," says Steve Howe, area manager for Carrier in the Midwest and Canada. "We had 23,000 tons of cooling on the street, then had to figure out how to move it 1,300 feet to the top of the building. So we put tanks every 40 stories and pumped to them in stages."

Extreme sports

In March energy drink brand Red Bull will again sponsor its Crashed Ice Competition, held originally in Quebec City in 2006 (now also in St. Paul, Minnesota, Helsinki, Finland and Moscow). More than 100,000 screaming spectators line the street as 80 participants skate and elbow their way in groups of four to the bottom of a 600 metre urban ice track built with massive drops, hairpin turns, big-air jumps at about 60 km/h. For skaters it's clearly not for the faint of heart. It's also not for the unseasoned ice-making professional.

"We bring in pumps, chillers, boilers, generators... a lot of piping," says Luc Despatie of HVAC Rentals/Loue Froid of Laval, Quebec. "You need equipment in this business," he says. "We have 150 chillers. We have \$2 million worth of flexible piping... a lot of connectors."

"We have 8,000 pieces of HVAC equipment in stock

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This temporary HVAC equipment is flushing the HVAC system at a Halifax LEED project.



Carrier was called to Florida to heat the ocean so that manatees could survive.

Heating the ocean

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in a 150,000 square foot warehouse (about 14,000 square metres). HVAC systems on trailers, flatbed trucks, cranes,..." says Scott Brainard, marketing manager for Temp-Air, Inc. in Burnsville, Minnesota. "People call us at all hours with serious emergencies."

His company provides heat for schools and office buildings under construction, mining operations, even windmills in cold weather. "For a summer emergency we can provide 25 tons of AC on a roof very quickly. Those are routine jobs. We've also done work at the Vancouver Olympics, the Smithsonian portrait

“With LEED, you're not allowed to use a new building's HVAC system until construction is complete.”

gallery, the Super Bowl, Indianapolis 500 and the X-Games in Aspen, Colorado."

"Special events, TV and film are an important part of the business," says Hubert. "We did the World Figure Skating Championships in London. We do Big Brother and Holmes Make it Right. It looks terrible if the actors are sweating under the lights. We do tents for the Toronto International Film Festival (TIFF) and now we're planning

the 2015 Pan Am Games...But most of our business is construction sites and buildings, and LEED flushes."

Under construction

"For the Shangri La Hotel in Toronto they imported Asian hardwood for flooring. It was expensive and had to be stored for a few months before installation. Some was intricate hand-carved trim for the spa and dining room," says Hubert. "We controlled temperature and humidity to prevent warping and mold."

He explains that construction managers are increasingly careful about efficient construction schedules. Conditioning certain floors during the job helps with timelines. Workers are more productive, paint dries faster and drywall damage is reduced when it's warm and dry.

Wildlife rescue

"You might have heard a few times about warming up water for Manatees. That was us," says Howe. West Indian manatees are large cow-like sea mammals that live mostly along Florida's coast, part of a worldwide population of similar creatures that are threatened by extinction. One species was hunted to zero near Russia. They live in equatorial regions and often look for pockets of warm water when temperatures turn colder than usual. They often glide into the warm discharge canals of electric power plants.

In the 1980s the Tampa electric company created a Manatee Viewing Centre near its Big Bend power station.

Although efforts to grow the manatee population have had some success in the past decade, a record 803 or 16 percent of Florida's manatees died this year from cold water and other mysterious ailments. A few years ago a utility plant in Vero Beach, Florida shut down and the Manatees couldn't warm themselves in the discharge canal. Carrier brought in an 800 hp steam boiler and a heat exchanger. "Obviously this is rare. Our normal emergencies are overheating computer server rooms, or old hospitals without backup systems that need generators when the power goes out."

Supporting LEED

HVAC rental companies also get the call for LEED buildings. "With LEED, you're not allowed to use a new building's HVAC system until construction is complete," says Hubert. "They keep it sealed. They don't want the ducts contaminated with the VOCs from glue and paint. They don't want trapped moisture and mold. So we maintain temperature and humidity during the last stages of construction. Then before occupancy we do a LEED Flush. It's a

separate LEED credit requiring a certain number of air changes."

"We started doing LEED credits about 10 years ago with just four jobs," says Brainard. "Now we do 20-30 every year. We're like consultants. The formula calls for 14,000 CFM per square foot. We calculate the number air changes per day for a two-week period, if we have that long. Or we bring more equipment for less time... For moisture control before the flush, we set up the construction manager with a computer so during the job he can monitor temperature, humidity and air quality."

Who knew that HVAC rentals could be so complex, busy and glamorous? So the next time you need a Manatee warmed up, some Asian hardwood protected from moisture, or a movie set a little cooler, who ya gonna call? +



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