



Photo by Vincent Desjardins

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One of the World's Largest Dehumidifiers Hoisted Into Hilton Hotel Fun Center

Hoisting a 30-foot-long, 20,000-pound Dry-O-Tron[®] dehumidifier sideways into the semi-completed \$40-million Hilton Milwaukee City Center expansion was a rigging challenge for mechanical contractor, Downey Inc., and general contractor, Mortensen Construction.

The huge 50,000-CFM unit — one of the world's largest — will dehumidify the Hilton's new three-story, 20,000-square-foot indoor water theme park. Besides dehumidification, the Dry-O-Tron[®] will also air-condition and heat the space, while simultaneously heating the pool water through an efficient heat recovery process. When available, excess heat is rejected into the hotel addition's water source heat pump loop and extracted through a cooling tower.

Aside from the bulk and weight of the unit, Downey Inc. project manager Jim Scott's rigging crew and Mortensen's crane operators had their hands full maneuvering the dehumidifier sideways into the expansion's fourth level. Because mechanical room space is minimal on the project, the crew managed to squeeze the unit through a hole with only a few inches of clearance—all while it dangled perilously from a crane some 50 feet above Milwaukee's Wisconsin Street

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*Gerald Rappaport,
General Manager,
Hilton Milwaukee City Center*

"We've lifted a variety of large equipment ranging from chillers to air handling units, but this is certainly one of the largest pieces of equipment we've rigged and installed," said Jim Scott, project manager of 135-year-old Downey Inc., the third-oldest mechanical contractor in the U.S.

Consulting engineering firm, Arnold and O'Sheridan, Inc., Brookfield, Wis., took advantage of Dectron's peerless capabilities of building and factory-testing one behemoth unit with 110 tons of total cooling. While bulky to install, the single unit will save owner/franchisee, Marcus Hotels & Resorts, Milwaukee, tens of thousands of dollars in initial costs.

Instead of two or three smaller units, one large Dry-O-Tron® DS-482 (482 lbs. of moisture/hr removal capabilities) will require less duct fabrication and piping, but more importantly it will cut valuable mechanical room space allocated for dehumidification by half.

Titled Paradise, the planned water theme park was designed by Howard Fields & Associates, Sausalito, Calif., in conjunction with the hotel's architect, Kahler Slater, Milwaukee. The room simulates a South Pacific Island getaway right in the heart of Milwaukee's Midwest Express Convention Center district. Its features are: a 4,500-square-foot main swimming pool that emulates a lagoon; twin water slides of 75 and 125 feet in length; 100-square-foot hydrotherapy spa; a 600-square-foot children's pool complete with mushroom-shaped water sprayers, cascading wall of water, jungle gyms, bridges, slides and tunnels.

"Paradise is an exciting addition to Milwaukee's ever-growing list of attractions," according to Hilton Milwaukee City Center General Manager, Gerald Rappaport. "The 20,000 square-foot indoor water theme park is a first for the Midwest and a-one-of-a-kind facility for downtown Milwaukee."

While unique in character, designing an HVAC and dehumidification system for a room with so many evaporative variables was challenging for Arnold and O'Sheridan's project leader, Kevin Stefanczyk. Pools and spas are fairly predictable evaporative sources, however Paradise has a myriad of swim jets, sprays, swirl pools, water slides, a water cascade and other water toys. When combined with a varying amount of people using the pool plus the water and space temperatures, calculating becomes complicated. With the help of manufacturer's representative, Robert Burkhardt, sales engineer, CDP Inc., Waukesha, Wis., Stefanczyk calculated the space would need a maximum removal of 482 lbs. of moisture/hr.

It wasn't easy to get the gigantic dehumidifier into the hotel's expansion. But since the unit will save the facility tens of thousands of dollars in first costs, while providing patrons the most comfortable experience possible, it was certainly worthwhile. ■



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