



The award-winning Orlando Science Center showcases HVAC chiller innovation.

## Magnetic Bearing Chillers Decrease Energy Spend by 50 Percent

### ISSUE:

Eight water-cooled screw chillers operating at the Science Center since its 1996 opening were failing, leaving the center's visitors suffering from insufficient and unreliable cooling. At one point, the Science Center offered free bottled water to visitors to keep them more comfortable.

### SOLUTION:

Three new 250-ton Daikin Magnitude® magnetic bearing chillers replaced the aging chillers. These chillers can easily run on part-load capacity which extends the life of the chillers. The chillers were then integrated with a Siemens building automation system (BAS) using LONTALK® protocol.

### OUTCOME:

With operational efficiencies achieved through the BAS, the Daikin chillers are estimated to reduce the Science Center's electric bill by 50% compared to the old system. Water utility costs were also greatly reduced by capturing the condensing water from the system's fan coils, which are then pumped into two new zero-bleed cooling towers. Additional savings were achieved by a solar panel system on

the roof, creating enough hot water to eliminate the need for two natural gas boilers.

Visitors to the Science Center can see the actual chillers in operation and view a cutaway of the magnetic bearing compressor in the exhibit area. Signage and monitors explain the chillers' energy saving technology.



#### NAME:

Orlando Science Center

#### LOCATION:

Orlando, FL, USA



#### FACILITY SIZE:

207,000 ft<sup>2</sup>



#### ISSUE:

Water-cooled screw chillers were failing, leaving visitors suffering from insufficient and unreliable cooling



#### SOLUTION:

(3) 250-ton Daikin Magnitude® magnetic bearing chillers