

# SCHEELS® ALL SPORTS LEVERAGES MODULAR SOLUTION

**Overview:**

Scheels All Sports is an employee-owned sporting goods retailer headquartered in Fargo, ND. The company has a significant presence in the Midwest, but is now expanding to other locations around the U.S. It chose Chandler, Arizona, as the site for its 32nd store, which involved renovating and expanding an existing retail space at a local mall.

The cooling demands for the family-friendly retail concept are challenging. Much of the space is open, but it encompasses 220,000 square feet. It will also house a 16,000-gallon saltwater aquarium, a wildlife mountain, 75 specialty shops, boutiques, a Ferris wheel, arcade games, sports simulators and a restaurant.

The store's design did not lend itself to packaged equipment and mall utilities could not support the associated load. Moreover, the store's only location for a mechanical space was on the roof over its loading dock. Two of the customer's concerns were minimizing noise and keeping the equipment hidden from view.

**LOCATION:**

Chandler, AZ, USA

**AREA SERVED:**

220,000 Square Feet

**CHALLENGE:**

Provide a quiet but efficient cooling solution in a discrete footprint for an open-concept retail environment

**SOLUTIONS:**

Daikin modular central plant (MCP) using two Magnitude® WMC magnetic bearing chillers, pumps, Evapco cooling tower, and steel support structure with service access

# SCHEELS ALL SPORTS CHANDLER, ARIZONA



## Solution:

For selecting and sourcing heating and cooling systems and solutions, equipment manufacturer representative SVL, an expert in commercial HVAC design, engineering and installation for the Chandler store, supports Scheels All Sports. SVL is an expert in commercial HVAC providing design, engineering, and installation services. After analyzing the project requirements, SVL determined that a modular solution could be ideal. Accordingly, it approached Daikin's Modular Solutions team to explore options. The team provided a drawing of a similar installation that met many of the project's requirements, which inspired a collaborative effort to design and build the perfect solution.

The construction team for Scheels All Sports, which included SVL, KFI Engineers, Plenium Builders and RLE Architects, met at the nearby Daikin Applied Modular Solutions facility in Phoenix to review the project requirements and determine the final solution. Some guiding conditions were redundancy, efficiency and a discrete envelope. Given space considerations, the cooling towers would also need to be installed on the roof of the construction. This would also require a steel support structure with service access.

The solution was a complete Modular Central Plant (MCP) with two Magnitude WMC magnetic bearing chillers. An MCP is a prefabricated solution designed and manufactured to meet specific central plant performance and installation requirements. It is particularly appropriate for fast-track schedules. The modular design lends itself to installation, where access and space are limited.

The two 325-ton capacity centrifugal chillers feature magnetic bearings for oil-free operation, integral variable-frequency drives and direct drive technology for enhanced efficiency. The advanced compressor design provides increased power with decreased electrical requirements for up to 40% more energy savings than fixed-speed centrifugal chillers. The advanced magnetic bearing compressor technology also eliminates the oil management system, reducing the risk of costly downtime. Additionally, it offers reduced maintenance costs compared to more conventional designs.

The chillers are quiet, with sound pressure ratings as low as 76 dBA (per AHRI Standard 575). At reduced loads, the noise level becomes increasingly softer. The noise levels were an important consideration for Scheels All Sports, as were the chillers' compact footprint which helped minimize the envelope size of the MCP. Daikin designed the MCP so the cooling towers could be installed on its roof, further enhancing the discrete appearance. Following Scheels All Sports request to minimize its presence on the rooftop, RLE Architects and Plenium Builders collaborated to design, build and install a curtain wall to surround and disguise the equipment. The attractive addition does not affect the MCP's performance.

Customers or their service teams typically use a ladder to access equipment on top of an MCP. Yet, Scheels All Sports preferred access that would be easier and safer. Accordingly, the Daikin MCP team designed and installed a complete set of permanent stairs to enhance access to the service platform.

## Outcome:

The Daikin Applied modular central plant (MCP) gave Scheels All Sports an elegant solution to meet complex requirements. The two 325-ton capacity centrifugal chillers are highly efficient. Together, they provided the required redundancy. The MCP is also compact and could fit into the limited space on the rooftop, where it is shielded from view by its location. Plenium Builders added a special curtain wall to minimize its visibility.

To enhance safety, Daikin designed and installed a complete set of permanent stairs to improve access to the service platform. No other solution would fit Scheels All Sports needs as well as the MCP. Scheels All Sports was delighted with the result and spoke with Daikin about potentially using this solution in a future project: a solid endorsement.

