



CASE STUDY: BLACK MOUNTAIN RECREATION CENTER/AQUATIC COMPLEX

New Chiller Technology Produces Multiple Benefits

The 41,000-square-foot Black Mountain Recreation Center/Aquatic Complex in Henderson, Nevada, serves the community seven days a week through an array of programming and special events for people of all ages. Its features include a fitness center, game room, gymnasium, indoor cycling area, meeting/classrooms, multi-use room, racquetball/volleyball courts, tennis courts and a seasonal aquatic complex.

Effective heating and cooling is essential for maintaining a comfortable and safe recreation complex; it also comprises a large portion of the typical energy costs. Since the equipment carries a significant purchase price, it is important to maximize efficiency from the start. When the city was ready to upgrade to a more efficient chiller, it took advantage of an incentive of nearly \$13,000 from NV Energy to offset the cost.

The new chiller is expected to produce 226,300 kWh of electricity savings each year. In addition to measurable energy savings and maintenance benefits, the staff and members at Black Mountain Recreation Center are enjoying quieter operations and improved comfort. The maintenance department reports more stability in setting and maintaining temperatures throughout the facility as well.

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Project Summary

The City of Henderson, which owns and operates the complex, capitalized on an opportunity to save energy by replacing the existing 200-ton water-cooled chiller with a 150-ton chiller equipped with Turbocor compressor technology. This new technology created benefits for multiple points of operation—from energy and maintenance costs to occupant comfort.



Energy-saving Equipment

Turbocor technology features a compact, oil-free compressor design with impellers and shaft suspended on magnetic bearings. Because the rotating shaft and attached impellers are the only moving parts in the compressor, this design improves reliability and minimizes maintenance.

The compressor operates at low noise and vibration levels and, at full capacity, draws less than half as much current as the old chiller. Onboard digital electronics enable the compressor to self-correct, allowing nondestructive slow-down in the event of a power interruption. The new equipment will save more than 225,000 kWh annually.



Project Results

Building Type: Municipality

Project Type: Retrofit

Measures: 150-ton Turbocor technology chiller

Incentive: \$12,844

Projected Annual kWh Savings: 226,300