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Case Study – California Hotel & Casino

EDUCATION / HEALTH CARE / LODGING / MANUFACTURING / OFFICE BUILDING / RETAIL / SPECIAL



Chiller and Cooling Tower Upgrade Delivers Seamless Comfort to Patrons at California Hotel & Casino

OBJECTIVES:

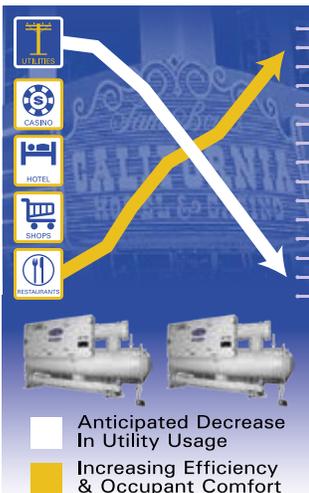
The California Hotel & Casino is a large, diverse property in Las Vegas, Nevada, providing lodging, multiple restaurants, specialty shops, catering space and gaming to some 800,000 patrons a year. The California's original Carrier chillers — after almost three decades of service — required replacement, and the facility's two cooling towers required a partial upgrade to better enable them to provide comfort to guests during the intense heat of a desert summer. The California sought to upgrade both the chillers and the cooling towers in a manner that provided seamless comfort to their year-round flow of visitors, while anticipating utility savings due to the impressive efficiency profiles of contemporary chillers.

SOLUTION:

To meet the California's guest comfort and efficiency targets, Carrier recommended the replacement of the facility's existing chillers with two EVERGREEN® 23XRV water-cooled screw chillers; replacement of the upper portion of the existing cooling towers; and updated chiller controls. The upgrade was completed during the cooler months so that the facility's plate and frame heat exchanger could provide guest comfort while the chillers were replaced and the cooling towers refurbished one by one.

Two new Carrier EVERGREEN® 23XRV chillers at The California Hotel & Casino will provide more efficient operation and reliable occupant comfort at this very busy and diverse facility. Thanks to a phased installation, guests enjoyed seamless cooling while the old equipment was retired and the new chillers and controls installed.

Chiller Replacement Yields Decreased Energy Usage and Increased Comfort





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SYNOPSIS:

The California Hotel & Casino, a Boyd Gaming property, is a diverse 85,000 square foot property in Las Vegas, Nevada. The facility offers 781 guest rooms and suites as well as five restaurants, three bars, several specialty and gift shops, catering space and the casino itself, with live gaming and over 1,000 video and reel machines. The California Hotel & Casino serves some 800,000 patrons a year.

After almost three decades of service, the California's original Carrier chillers and cooling towers were struggling to cope with that occupant load in the intense heat of a desert summer. Therefore, the California Hotel & Casino sought to upgrade both the chillers and the cooling towers in a manner that provided seamless comfort to the year-round flow of visitors, while anticipating utility savings due to the impressive efficiency profiles of contemporary chillers.

To meet the California's guest comfort and efficiency targets, Carrier recommended the replacement of the facility's existing chillers with two 500-nominal-ton EVERGREEN® 23XRV water-cooled screw chillers; replacement of the upper portion of the existing cooling towers; and updated chiller controls.

Carrier EVERGREEN 23XRV chillers provide excellent year-round efficiency, thanks in part to variable frequency drives (VFDs), which enable the equipment to perform well in the part-load conditions that characterize the vast majority of annual usage. The VFDs also increase efficiency by enabling the facility to run a simpler system. Jason Williamson, Sales Engineer at Mechanical Products Nevada, Inc., said, "The California Hotel used to run two sets of pumps to modulate the load on their cooling system. With the variable frequency drives on the 23XRV chillers, we were able to eliminate the secondary pumps entirely, saving that energy and maintenance cost."

Another feature that contributes to the efficiency of the EVERGREEN 23XRV chillers is the integrated microprocessor-based product integrated control (PIC) units. PIC units provide system integration and communication, and provide service personnel with historical and alert data to help with monitoring and maintenance of equipment.

Chad Green, Technical Project Manager at Boyd Gaming Corporation, said, "The chillers are fantastic — they've been running really well since installation. We look forward to high efficiency over their lifetime."

Efficiency comes with additional rewards as well. Like most areas, Las Vegas's utilities offer rebates for efficiency upgrades; the EVERGREEN 23XRV chillers qualified for the Nevada Energy "Sure Bet" Program in the custom retrofit category.

In order to attain seamless comfort for the California's guests and staff, the upgrade was completed during the cooler months so that the facility's plate and frame heat exchanger could provide guest comfort while the chillers were replaced and the cooling towers refurbished one by one. This process also lowered costs by making it unnecessary to rent supplemental chillers during the installation. Chad Green commented, "The installation went very smoothly. Our local Carrier contact, Jason Williamson, is very thorough and great to work with."

With the new chillers and refurbished cooling towers in place, the California Hotel & Casino is poised to begin another era of reliable, efficient facility comfort.

"The chillers are fantastic— they've been running really well since installation. We look forward to high efficiency over their lifetime."

Chad Green, Technical Project Manager, Boyd Gaming Corporation

Project Summary

Location: Las Vegas, NV

Project Type: Chiller replacement; cooling tower upgrade

Building Size: 85,000 ft²

Building Age: 1975

Building Usage: Hotel, casino, restaurant, catering and retail facilities

Objectives: Upgrade equipment for better efficiency and reliability; provide seamless comfort to guests at heavily trafficked property.

Equipment: Two 500-nominal-ton EVERGREEN® 23XRV water-cooled screw chillers; PIC units.

Major Decision Drivers: Needed to upgrade to new chillers and refurbish cooling towers without interrupting business at the property.

Unique Features: Refurbished one cooling tower at a time, and replaced one chiller at a time, using the plate and frame heat exchanger to provide guest comfort without the need for supplemental temporary chiller rentals.

Installation Date: 2013

For more information, contact your nearest Carrier Representative, call 1.800.CARRIER or visit our web site at www.carrier.com