



Hotel Miramar (Singapore) Ltd

A Well-rounded Solution to Enhance Hotel's Green Initiatives

Hotel Miramar Singapore accommodates 342 rooms, as well as meeting facilities, recreational and social amenities. It is located in the Central Business District (CBD) near high-traffic tourist attractions.

The existing plant configuration consisted of 2 (360RT) and 1 (400RT) centrifugal R123 water-cooled chillers. The chiller equipment and air-side equipment have been operating for more than 16 and 20 years respectively, with chiller plant performance guarantee.

Background

In 2017, Carrier's Singapore AdvanTEC team was selected to upgrade the building's air-conditioning system. A conventional chiller plant retrofit and air handling unit upgrading was also planned, as part of the AdvanTEC team's all-rounded and one stop solutions strategy.

More significantly, this was also an identified opportunity to achieve the Singapore Building and Construction Authority (BCA) Green Mark certification. This green building rating system initiated by Singapore's government is designed to evaluate a building's environmental impact and performance. This increases the building's asset value, instills a positive image in environmental saving initiatives, and supports the national target of having 80% of buildings in Singapore be green by 2030. In order to secure this certification, a level 3 energy audit assessment was conducted to evaluate optimal solutions and its impact.

Technologies & Solutions

- Carrier AquaForce® 30XW-V variable-speed screw chiller provides high energy efficiency, a variable frequency for green building design and, R-134a (non-ozone depleting) refrigerant
- 350RT 30XWV368 x 3 sets
- 39CQ Air Handling Unit c/w i-Vu® building automation system (BAS) control, demand ventilation control and variable speed drive (VSD)
- Carrier i-Vu® chiller plant system manager with optimization and remote monitoring supports full integration capabilities and quick responsiveness for optimization
- Connected service to Smart Building Operating Centre (SBOC) for real-time monitoring and operations uptime with predictability technology

Customer Feedback

"The upgrade of the chiller system has been critical in improving Hotel Miramar's power efficiency and minimizing our carbon footprint, leading to us successfully clinching the BCA Green Mark (Gold) Certification."

Albert Tan, Chief Engineer,
Hotel Miramar (Singapore) Ltd

Summary



Singapore

Annual Energy Savings: 0.5 mil kWh

Average Efficiency: 0.62 kW/RT

Carbon sequestered by:
462 acres of U.S. forests/year

Savings for Chiller Plant: 28%

Greenhouse Gas Emissions Savings equivalent to:
18143 kg of waste recycled

*based on USD 0.08/kWh electrical tariff