



Four Seasons Hotel Sydney Boot Scheme Upgrade

The Brief

The Four Seasons Hotel Sydney Energy Efficiency Upgrade (BOOT Scheme) comprised the upgrade of the hotel's mechanical plant room that dated back to 1981 - when the landmark hotel was built - with modern, energy efficient equipment and systems delivered via a 'Build, Own, Operate and Transfer' (BOOT) scheme. ENGIE designed, built, and now own the upgraded plant room, which they will operate and maintain for 12 years. At the end of the term, the client will obtain ownership of a well maintained, optimised plant room.



The Benefit

The two chillers were reportedly the world's first magnetic bearing screw chillers of this capacity and length to be loaded via a goods lift, saving a huge cost for cranes in Sydney's CBD. The innovative chiller design allowed the evaporator and condenser vessels to be transported in the lift, without the need for split vessels, removing the risk of costly repairs for leaking gaskets during the life of the chillers.

Results indicate a saving of 23% in electricity within the first two months of operation, which is expected to increase to 26% per annum once system optimisation is complete.

The Solution

The solution comprises the design and delivery of a facility upgrade, ongoing operation with full equipment warranty, delivering 100% operational availability and guaranteed energy savings to the client.

- 2 x 900kW Quantum Chillers utilizing magnetic bearing, oil-free Turbocor compressors

- Heat recovery from the chillers via the condenser water loop

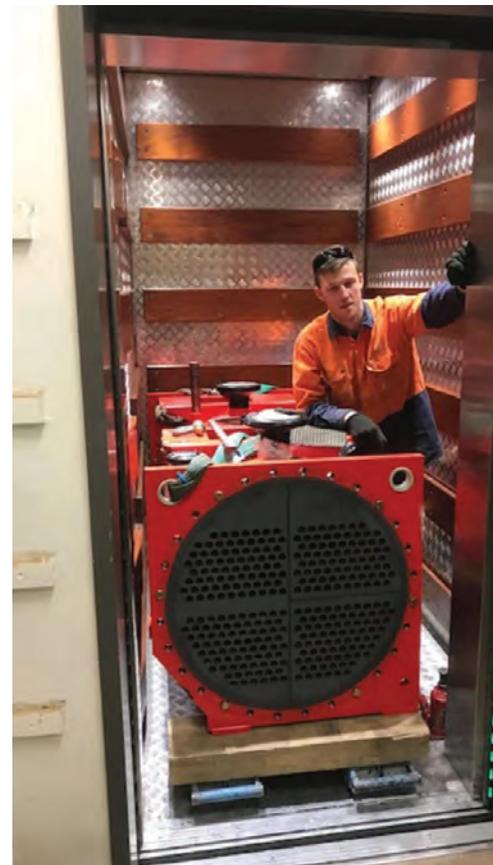
- 2 x Rendamax fully condensing boilers for Heating Hot Water and Domestic Hot Water, controlled at independent set points for maximum efficiency

- Kamstrup Ultrasonic Thermal Energy Meters to monitor, control and measure the hotel's secondary energy demand and consumption

- Existing fiberglass cooling towers were refurbished with all-new fill and fans

- Side stream filtration was installed on the condenser water system to minimize the amount of chemicals required

- The entire building BMS was upgraded including central plant optimization and energy management system



Built, Own, Operate & Transfer (BOOT) scheme



23% electricity saving in the first 2 months of operation