

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.

EQUANS 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 Solution

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

The upgrade consisted of:

- 2 x 900kW Quantum Chillers utilising 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 minimise the amount of chemicals required
- Upgrade of the entire building BMS including central plant optimisation.

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 craning 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.

Operation results indicate savings of approximately 26% in electricity and at least 20% in gas per annum.



Built, Own, Operate & Transfer (BOOT) scheme



23% electricity saving in the first 2 months of operation