



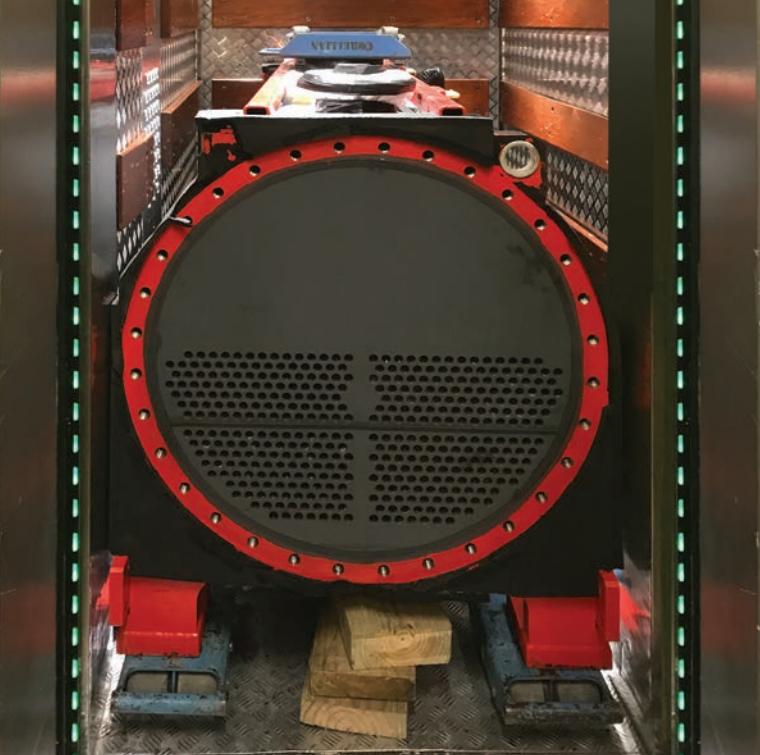
CHALLENGE THE NORMS TO REDUCE PROJECT RISK AND COST

David Odd and Jack Siwek from ENGIE Services proposed a BOOT (Build, Own, Operate and Transfer) scheme to upgrade Four Seasons plant room with energy efficient equipment and systems. This is how they did it ...

Cyril Uboldi knew he needed to upgrade the Four Seasons Hotel plant room. The Director of Engineering was challenged with maintaining outdated and inefficient mechanical equipment that dated back to 1981 - when the landmark Sydney hotel was built.

A major obstacle for Cyril was convincing the building owners to invest \$2m + on a new plant room. When it came to capital allocation, comfortable beds, a great restaurant and modern fittings - things guests pay for - take precedence over a hidden room full of pipes, chillers and boilers.





Chillers designed to ride the elevator 35 floors up

The ENGIE Services team designed 2 x 900kW Quantum Chillers that were transported 35 floors up to the plant room via the goods lift. Each chiller, designed with a vessel length of 1.9m, was re-assembled by OEM trained ENGIE technicians.

“This was the world’s first Turbocor non-split vessel chiller of this capacity to be transported up 35 floors without a crane”



David Odd
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BOOT scheme solves capital expenditure constraints

ENGIE Services designed, built, and now own the upgraded plant room. They will operate and maintain the plant for 12 years.

Four Seasons Hotel spent \$0 upfront in capital costs. They transferred project risk to ENGIE and got fixed maintenance fees with guarantees for equipment reliability and efficiency over 12 years. At the end of the term, Four Seasons will obtain ownership of a well maintained, optimised plant room.

CONVENTIONAL COST STRUCTURE	VS.	BOOT SCHEME
High initial CAPEX		Fixed construction fee
Energy costs		Variable fee (w/ efficiency guarantee)
Maintenance and renewal costs		Fixed maintenance fee

“The BOOT scheme proposed by ENGIE Services was a unique approach for this type of project. It allowed us to gain the energy savings from installing new equipment and systems without having to make a big capital investment upfront”

Cyril Uboldi
Director of Engineer
Four Seasons Hotel - Sydney

Four Seasons on track to achieve 26% reduction in electricity costs

The hotel has already saved 23% off their electricity bill after the first two months of operating the new plant room. Once system optimisation is complete, the team expect a 26% annual energy savings.

Whilst the two 900kW Quantum Chillers with Open Flash Economisers are a major factor driving the energy efficiency, other energy efficient equipment and systems installed by ENGIE Services included:

- Heat Recovery from the Chillers via the Condenser Water Loop
- 2 x Rendamax Condensing Boilers for Heating Hot Water (HHW) and Domestic Hot Water (DHW)
- Kamstrup Ultrasonic Thermal Energy Meters
- Cooling Tower Refurbishment
- Side Stream Filtration
- Building Management System (BMS) Upgrade and Plant Optimisation

“The chillers have a direct connection to the manufacturer in Germany. This provides Four Seasons with remote diagnostics, troubleshooting and automatic software and firmware upgrades”



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