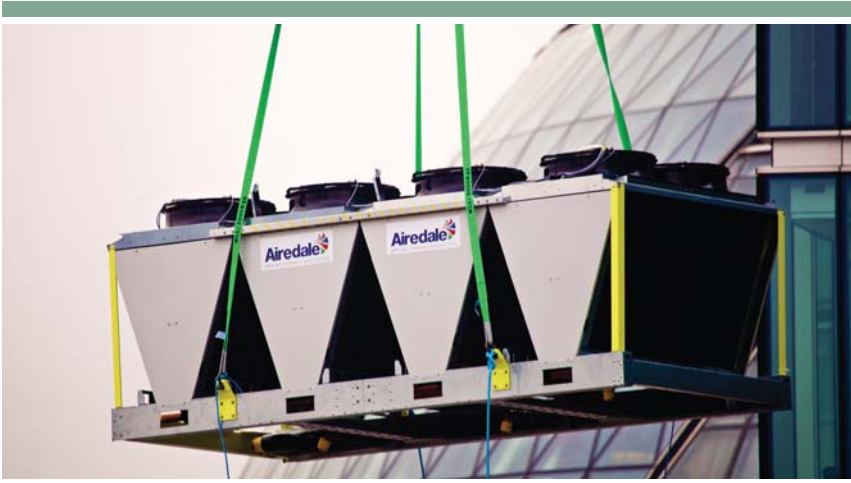


London chiller logistics

Case study



Overview

Airedale International’s design engineers, service and controls experts formed part of a multi-disciplinary team managing a complex chiller design, manufacture and installation project involving two 40-minute helicopter lift operations onto the roof of the London offices of a global professional services firm.

The team, comprising Norland Managed Services, Plant Movements and Helirig, called for high performance chiller design combined with meticulous planning to minimise disruption to business operations and manage risk during installation in the pedestrianised location close to other high rise buildings and important historic monuments.

“ Planned to perfection ”

James Buchan, Lead Project Manager, Norland

Airedale solution

- 8 x 405-778kW TurboChill™ extra quiet air cooled single circuit chillers (405kW, 630kW, 743kW & 778kW)
- Low noise solution featuring specially designed acoustic compressor enclosure and base panels
- Design and manufacture to meet complex logistical and stringent health and safety requirements
- Airedale chiller sequence manager
- Airedale ChillerGuard™ service & maintenance



In more detail

London chiller logistics

Complex logistics

The original chillers, which were approaching end-of-life, were dismantled and removed via the building in two phases to allow time for new concrete plinths, pipework and power supplies to be installed whilst maintaining 100% business continuity.

Eight Airedale TurboChill™ chillers were designed and manufactured in a total of 18 separate component parts to meet the 3.2 tonne weight limit per section. Further design considerations needed to take into account health & safety requirements and the need for rapid assembly and connection whilst maintaining Airedale's highest quality and energy efficiency standards in chiller design.

Once delivered to site, the chillers were positioned on aluminium track way laid to protect the paving before being airlifted onto the limited roof space in predetermined order to simplify assembly and connection by Airedale's specialist site team. The chillers were fitted with removable lifting lugs and guide plates to ensure the units could be lowered into the exact position required. Robust and comprehensive test lifts were conducted at Airedale's Leeds manufacturing site as part of the design process to anticipate and exceed the requirements of the operation.

Further design adaptations, including rationalisation of pipework connections, meant that the units could be reassembled on the roof with 50% less manpower and within a rapid timeframe of just one week of each airlift operation.

As the location was unsuitable for a crane, a Super Puma helicopter was drafted in. The two early morning operations which were capped at nine individual lifts per operation were successfully carried out in less than one hour each and involved working closely with the Civil Aviation Authority (CAA), police, local authority, environmental health and estate owners.

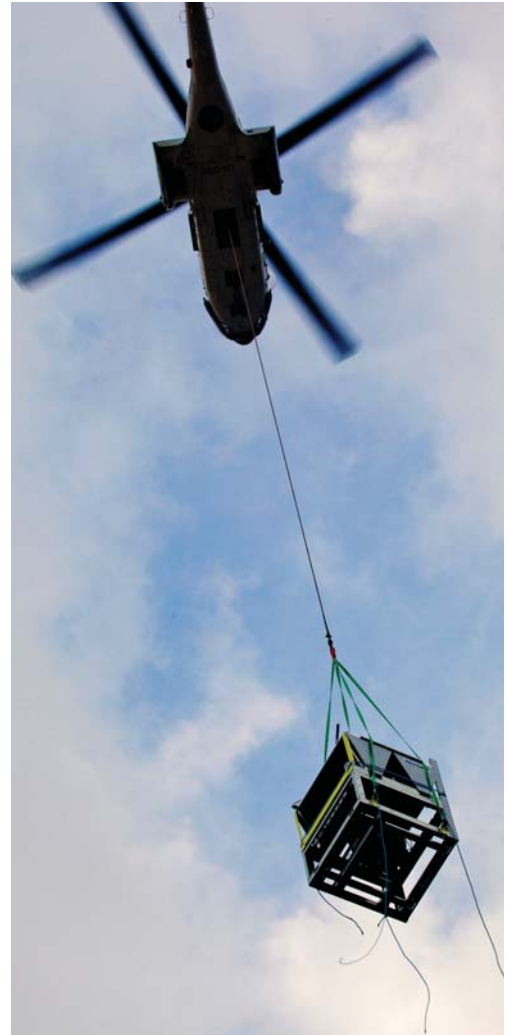
Energy-saving chillers

A total of eight Airedale TurboChill™ 8, 10 & 12 fan air cooled chillers were designed and manufactured in modular form to meet the 3.2 tonne lifting capacity of the Super Puma. The chillers which offer annual operational cost savings of up to 23%¹ were selected for their energy-saving properties and ease of maintenance, and were supplied with specially designed acoustic packs to ensure they meet stringent local authority noise restrictions associated with the building's proximity to other offices and hotels.

The TurboChill's modular 'V' frame coil arrangement (patent pending) vastly improves heat exchange, increasing performance and control particularly at part-load, and facilitates maintenance. The large surface areas of the polymer-coated microchannel heat exchangers increase cooling capacity and reduce condensing temperatures within a smaller footprint.

The TurboChill's oil-free centrifugal compressors provide very precise variable speed control between 15-100% for tighter water set point management which minimises power consumption with near silent operation.

An Airedale chiller sequence manager maximises the TurboChill's part-load efficiencies and ensures even wear of components.



Benefits

- Collaborative, fully managed service
- Rapid 15 week completion for each operation from receipt of order to on-site installation and commissioning
- Up to 23% savings on running costs¹
- Class A EER up to 4.35 (at 7/12°C water and 35°C ambient)

¹ Compared with leading competitor screw chiller based on part-load operation over an annual cycle in Leeds (UK)