

Tower of London

Case study



Overview

The Tower of London is one of six historic buildings under the care of independent charity, Historic Royal Palaces (HRP). As one of Britain's most important historic buildings, and home to priceless treasures including the Crown Jewels, it is vital that any works commissioned by HRP deliver best value-for-money and reliability.

Principal contractor, EV Bullen, was responsible for the execution of the project from the design phase through to practical completion and handover. By convening the project team very early

on in the design stage and enabling effective communication between the critical stakeholders, including Airedale International, and the rest of the project team at every stage of the project, many of the potential risks typically associated with a scheme of this scale, involving multiple capital plant suppliers, were pre-empted.

As part of a major refurbishment programme, Airedale was selected to supply two Ultima™ twin circuit compact chillers to deliver comfort cooling to the building.

Airedale solution

- 2 x 237kW Ultima™ air cooled compact chillers
- Chilled water temperature sensor
- Evaporator flow switch
- Anti-vibration mounts
- Airedale commissioning and training



CHILLERS



In more detail

Tower of London

The unique nature of the building's design and fabric required Airedale to reduce the footprint of each chiller by just 75mm so that it could be moved into position through existing structural openings without damaging the building's structure. Reducing the dimensions of the chillers allowed fully assembled, fully tested units to be delivered to site, cutting time and cost in assembly and commissioning, and ensuring a smooth transition to the new cooling plant.



In addition to best value in capital and operational costs, other key considerations were quality, performance and reliability, and access to professional service and quality components at the end of warranty.

To maximise energy efficiency, four stages of cooling are available, enabling the units to closely match cooling demand and so minimise energy consumption. When components work at part-load, wear and tear is also reduced, improving reliability and extending unit life. Modulating head

pressure control also ensures energy-efficient operation of the condenser fans whilst protecting the system in low ambient conditions. Units are also designed to ensure easy access to components, simplifying maintenance.

To maintain acceptable sound levels, the compressor enclosure is lined with 40mm acoustic material.

To ensure performance to precise specifications, the units were commissioned on-site by Airedale engineers who also provided training.

“ We are delighted with the successful outcome of this project. A building as unique and cherished as the Tower of London requires the highest levels of quality, attention to detail and understanding of the complexities involved. Every member of the project team met and exceeded every expectation. ”

Ken Deal
Project Manager, EV Bullen



Authorised User No. 00007



Benefits

- Energy-saving four-staged cooling maximises part-load efficiencies, reduces water consumption and improves reliability
- EER 3.52 at 5.6°C /12.5°C supply/return at 45°C design condensing temperature
- Electronic soft-start delivers reliable start-up and reduces starting current by approx 40%
- Compressor acoustic jackets for further 10 dBA noise reduction
- Design adapted to minimise installation time and costs