

COOLTHERM SUCCESSFULLY INSTALLS 8TH CHILLER INTO CENTRAL SQUARE, CARDIFF



Having installed 6 chillers into Central Square, Cardiff in 2015 and 2017 Cooltherm were once again tasked with providing an innovative solution for buildings 6 and 7.

Formerly the central bus station, Central Square is now part of a major cutting-edge transformation plan with energy efficiency and low environmental impact at the core of the design, the site will soon be home to several prestigious organisations including the likes of Cardiff University, HMRC and the BBC.

CMB Engineering Ltd enlisted the help of Cooltherm to provide reliable, efficient and quiet chillers that would deliver comfort cooling for the building as well as the ability for the units to fit the limited plant space available. The chillers also had to be suitable for a coastal application due to the site being located so close to the sea.

Two ultra energy efficient 1500kW turbomisers will deliver lower running costs due to savings in energy usage and lower noise during operation at 60 dB(A) at 10 metres, and efficiencies above 5 ESEER.

Creating 3.0mW of air-cooled chillers with a combined length of over 30 meters that operate with a peak noise of only 60dB(A) without external attenuation is no easy feat. The BAM condenser surface area was optimised to fit within the chillers maximum permissible frame length, and the compressors were housed within specifically developed boxes to minimise the noise breakout from the already quiet Turboacor compressors. The biggest challenge was removing the high frequency noise present in the hot gas discharge line, (because chillers of this scale are normally reasonably loud this high frequency noise which is present on most machines is drowned out by the lower pitched sounds generated and therefore goes undetected).

We took steps with the factory to tune the construction of the discharge pipework to minimise the frequency being created in the first place, then specific attenuation was applied directly to the pipework itself in specific locations to eliminate noise transmission.



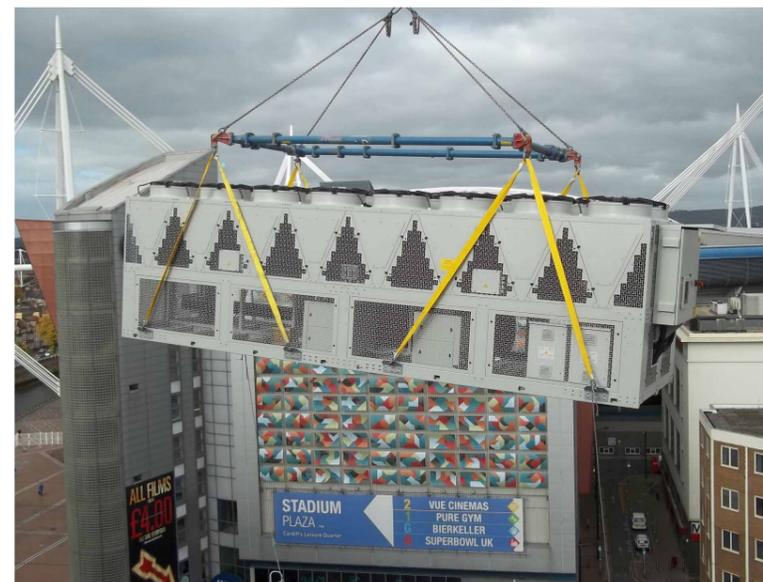
Due to the size of the chillers and with very limited plant space available on the roofs of each plot, the chillers were the first items to be installed and lifted into place by tower crane. The two units installed on plots 6 and 7 proved a little more challenging than normal as each chiller came in two sections due to their enormous size at close to 16 meters in length each (assembled). Time is precious on a building site and "Crane Time" comes at an even higher premium. To minimise the time taken to assemble



each chiller Cooltherm devised an alignment bracketry arrangement that allowed the second section of chiller to swiftly align with the first with ease, then a series of pin guides ensured the chilled water pipework and cable containment met within a tolerance of 2mm of each other between chiller sections.

"It's been a fantastic project to work on and to witness the incredible transformation that is taking place at Central Square. We are already working on plans for the Central Quay project where we already have 2 machines specified".

John Cole Cooltherm Sales Manager.



cooltherm.co.uk

E enquiries@cooltherm.co.uk

T 0117 961 0006

Bristol Office:
Unit 5, Trubody's Yard,
121 London Road,
Bridgeway,
Bristol BS30 5NA

Cardiff Office:
Unit 5, Maritime Court,
Bedwas House Industrial
Estate, Bedwas,
Caerphilly CF83 8DW

Reading Office:
Unit 26, Easter Park,
Beynon Road,
Aldermaston, Berkshire,
Reading RG7 4QB