

# Chiller Installation for University of Bath Sports Village



The £35 million Sports Training Village at the University of Bath provides facilities to accommodate over 50 sports as well as being a world class multi-discipline training environment, and regularly hosts major international competitions such as the Fed Cup Tennis and Modern Pentathlon European Championships.

Cooltherm were brought in to replace the existing chiller as it was reaching the end of its economic life, proving very costly to repair and operate. The chiller was significantly oversized for the original cooling loads, but a new modern extension to the building was also integrated into this chilled water circuit which led to an overall increase in required cooling capacity.

The original brief was to supply a smaller chiller to match the original lower thermal loads, Cooltherm were able to monitor usage and collect historic data from the site energy meters to establish the peak cooling capacity of the original installation was around 300kW, taking into consideration the additional building extension.

**Cooltherm was tasked with designing a chiller capable of delivering a total capacity of 450kW and still fit within the restricted roof area.**

As the university constantly monitors its carbon footprint it was also stipulated to select a chiller with the best capacity turn down for low

load winter operation, as well as operating as efficiently as possible across all ambient and load profiles, the final request was for the selection to be operating on the lowest possible Global Warming Potential refrigerant.



The project was a full turn-key package which included removing the existing chiller and single fixed speed pump and replacing with a new chiller and inverter pump set for redundancy should a pump require maintenance. All this had to be carried out in the shortest possible time frame to reduce the chilled water downtime as to not affect the Olympic athletes. To minimise the shutdown Cooltherm suggested the work was carried out over 2 short shutdown periods rather than one extended one.

The position of the roof top chiller created its own challenge, the car park location for the crane to enter was very restrictive and the largest crane that could get into the car park was unable to lift the chiller to its final position.

With the help of Cooltherm's specialist lifting contractor Terranova a solution was found by using 2 cranes, the first crane to lift the chiller from the car park into a building well, then a smaller crane which was able to fit in the building well to position the chiller into its final position.



**The chiller was the first of the smaller Turbocor TG210 model installed with 2 compressors allowing incredibly low capacity turndown, lowest stable running load is 50kW (ambient dependant) which is perfect for those cold winter days where the load is low).**

As a 2-compressor machine it can also deliver the higher capacity required by the customer in the summer months and offers the client in built redundancy of their chilled water system in one unit.

Justin Fisher, UK Senior Projects Manager for Cooltherm said:

*“ We have carried out several projects with the University of Bath over the last few years, this one was very exciting to be involved in and is testament to the team at Cooltherm for always striving to overcome challenging briefs to deliver world class products and services. ”*

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