Weather is no match for Aermec's a/c solution at Wimbledon

When it comes to applications requiring critical control of their internal environments, Aermec are the experts, from commercial buildings to mission critical data centres Aermec can deliver. Wimbledon is no exception where Aermec provided a bespoke air conditioning solution that comes in to play when the retractable roofs over Centre Court and No.1 Court are closed.

Aermec's relationship with The All England Lawn Tennis Club (AELTC) began when it was asked to supply chillers for Centre Court's retractable roof. Now its chillers and AHUs are being used for the first time this year on Court No 1 (the championships were not held last year due to the pandemic).

Twenty-six super quiet chillers and 12 very low noise air handling units (AHUs) were specified. Twenty chillers and AHUs are positioned at a high level within the stadium and had to be extremely quiet as spectators in the higher tiers sit very close to the plant rooms which are located above the seats.

The uniqueness of the project, the location of the venue – surrounded by housing – required considerable planning and innovative designs. Aermec worked on a totally customised approach which addressed an unusual combination of criteria - noise, comfort of spectators, safety of the players and the moisture levels of the grass.

Prototypes were designed and built at Aermec's purpose-built AHRI and Eurovent certified test facilities in Italy. Extensive acoustic tests were carried out in Aermec's climatic chamber.

Super low noise slim chillers were used each with a capacity of 300kW and fans capable of 320Pa ESP (External Static Pressure). Six of the chillers are located in the basement and 20 chillers were designed to fit within physical constraints of the court. To address acoustic requirements, they were enclosed in five special acoustic pods, each containing four chillers in a 2x2 double-deck arrangement. The pods are designed to accommodate air intake on one side only.

EC direct drive fans were used to ease commissioning and set design air volumes without the need for pulley and belt changes. Inverter pumps were also used to ensure a constant flow rate as the quantity of chillers in operation increases and decreases.

The AHUs were arranged within custom-designed steel framework. Acoustic housings were unnecessary as the AHUs were designed appropriately to meet the noise specifications. Each unit has 50mm thick panels with mineral wool insulation 100kg/m^3

and 1.2mm thickness galvanised steel internally and externally. The fan section has 150mm panels of extra insulation to reduce the radiated noise of the fan.

Four AHUs were situated on the east side of the court, four on the west side and four on the south side. The units were installed on the roof in sections and Aermec carried out the final connections once all sections were in place.

Aermec collaborated closely with the AELTC and ME Engineers to deliver a robust solution completed on time and ensures that play on both courts continues regardless of the weather.

-ENDS-

AERMEC UK (Head Office)
The Capricorn Centre,
Unit 6,
Cranes Farm Rd,
Basildon
Essex SS14 3JJ
Tel: +44 (0) 203 008 5940
www.aermec.co.uk