

Hybrid chiller technology a creative solution for college

The first UK installation of Rhoss EXP hybrid cooling and heating technology from Klima-Therm has been completed at the new Creative Industries Centre at Kingston College, London

THE THREE-STOREY state-of-the-art art facility is designed to offer outstanding energy efficiency, and houses the college's programmes in art and design, fashion, photography, music and games design.

The heat pump-based chiller was installed by Lowe & Oliver, and specified by consultant Hamson JPA for its energy efficiency and ability to provide simultaneous chilled water and hot water, linked to whole-building energy harvesting.

Standing for excellence in polyvalent technology, EXP is a new type of hybrid chiller heat pump and heat recovery system that automatically balances simultaneous cooling and heating demands, optimising total energy use and heat recovery within multi-compartmented buildings, to deliver maximum efficiency and occupant comfort.

It is a combination of three technologies: a high efficiency heat pump based chiller, an energy recovery system, and a control system that regulates and optimises the functioning of the combined system across a building to deliver the lowest possible energy usage while delivering set conditions.

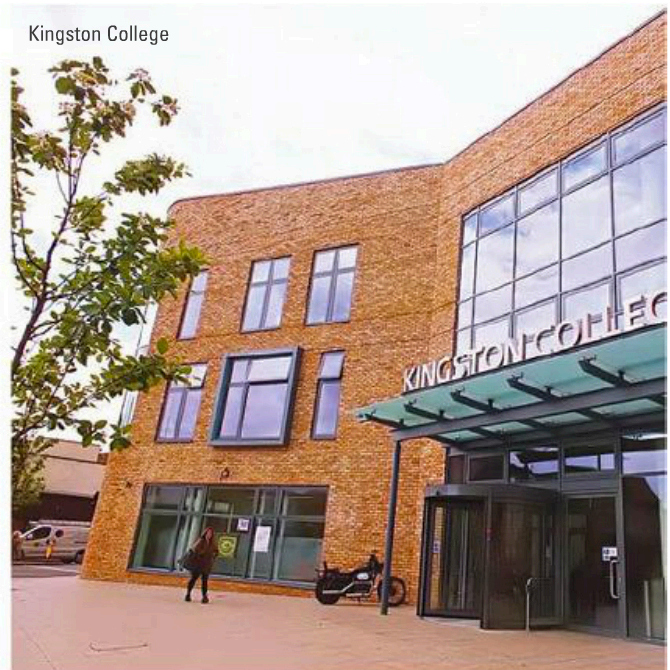
Predicted load profiles for the new college building suggested

EXP would provide a suitable solution, given the requirement for simultaneous heating and cooling across the building for much of the year. The unit specified, an EXP TXAETY 2100 with cooling capacity of 105kW and heating capacity of 83kW, has intelligent on-board controls to ensure delivery of heating and cooling to meet the building's changing demands with little BMS intervention.

The chiller has separate heat exchangers for chilled and hot water production, and unlike other heat pump-based systems these are connected separately to their respective hot and chilled circuits by dedicated pipe work.

Temperature sensors across the relevant evaporator or hot water production heat exchanger enable the chiller to sense changes in cooling and heating requirements. When demand is for cooling only or heating only, the air-cooled condenser section of the chiller is used to reject or absorb heat as required, boosting efficiency and improving overall system performance for the comfort of building occupants.

Andrew Latus, who headed the project for Klima-Therm said: "The building design and diverse use lends itself to EXP technology. This, coupled with the require-



Kingston College

ments for class leading efficiency to meet the building's green credentials, provided an excellent application for the technology."

Michael White, who headed up the project for Lowe & Oliver, said: "We have worked with Klima-Therm on previous occasions, and they were able to provide compre-

hensive technical documentation and proof of performance for the EXP system. EXP provides a good solution in situations where there is a simultaneous demand for cooling and hot water, and particularly in a building where there is significant potential for internal heat recovery."



The Rhoss hybrid chiller from Klima-Therm



Chiller pipework connections on the first UK installation of Rhoss EXP hybrid cooling and heating technology from Klima-Therm