

Case Study

Rugby School
Modern Languages Building



Project Value – £95k

Completed – September 2012

Challenge

With a total build cost of £2.3million the new modern languages building at Rugby School is state of the art construction project incorporating various forms of sustainable technologies including a breathing building system, green sedum roof, underfloor heating and air source heat pumps. The main contractor ISG employed Envirogen Renewable Solutions as specialist renewable contractor to supply and install the air source heat pump system. As a renewables specialist we set about the design to provide 80kW of sustainable heat to the building via the bespoke underfloor heating system. The requirement was to supply a sustainable heating system with an SCOP of more than 3.5.



Solution

Our design team at Envirogen opted to use a modular monobloc system supplied by Mitsubishi Electric. The two CAHV-P500YA-HPB units provide a nominal 86kW of heating and a predicted SCOP of 3.7. The system was designed to operate at a flow temperature of 45°C in conjunction with the underfloor heating system to offer optimum performance and substantial running cost savings over conventional fuel boilers.

The air source heat pump units are located in a bespoke plant area at the rear of the site and connected to the internal plumbing system via 65mm specialist underground pre insulated flexalen pipework supplied by Flexenergy Ltd. The underground piping is installed in a specially constructed trench which stretches over 35m before entering the buildings main plantroom to be joined to the internal services.



The systems are controlled via the buildings bespoke BMS system and interlocked with PIR room sensors and window switches to offer overall building comfort and efficiency.