GROUND-AIR HEAT EXCHANGER SYSTEMS
CARCLAZE COMMUNITY PRIMARY SCHOOL, ST AUSTELL, CORNWALL
REHAU AWADUKT THERMO
AT CARCLAZE COMMUNITY PRIMARY SCHOOL

The REHAU AWADUKT Thermo ground – air heat exchanger which is making such an impact in the new build education sector has been chosen for another new school at St Austell in Cornwall.

Carclaze Community Primary School is a new build project for Cornwall County Council which is an amalgamation of the separate infant and junior schools which were previously on the site.

Being delivered under a design and build contract by Kier Western, the school has been designed by architects Poynton Bradbury Wynter Cole, and takes advantage of a sloping site to create a two-storey building with far reaching views.

An innovative ‘Heart’ area on the lower ground floor is a shared space for practical and creative learning but it has limited natural ventilation so M&E consultants EIC specified the REHAU AWADUKT Thermo to provide 3,457m³/h of pre-tempered air.

The AWADUKT Thermo system works by drawing fresh air through the pipework array and allowing heat transfer to take place between the air and the ground which is a fairly constant 8-12°C all year round at this depth. During the winter, this has the effect of pre-warming the air by up to 9°C and in summer it can be pre-cooled by as much as 14°C before it is delivered into the building via a series of floor grilles.

With a COP approaching 50, AWADUKT Thermo is being used extensively in BSF projects across the UK to deliver the necessary renewable energy performance. Recent installations have taken place at the Joseph Rowntree School in York, Tuke School in Southwark, Queen Elizabeth School in Dorset and Wembley Manor School in London.

Carclaze Community Primary School incorporates a number of sustainable features alongside the REHAU ground – air heat exchanger, including a biomass boiler and roof mounted natural ventilation on the upper ground floor. It is scheduled to open in September 2010.

The optimised polypropylene pipework for the AWADUKT Thermo system has been laid in a 16m x 30m array 1.5m below what will eventually be the new school’s playing fields. 16 runs of 30m of 250mm pipework and 500mm header pipe were installed by main contractors Kier Western who received training and technical support direct from REHAU.