

Case Study

University of Plymouth

RENEWABLE SOLUTION FROM ANDREWS FOR NANCY ASTOR BUILDING

Andrews Water Heaters, part of Baxi Commercial Division, has supplied two Queen's Award winning MAXXflo direct fired storage water heaters, together with a SOLARflo pre-heat system, which have been installed at the Nancy Astor Building, an £11 million development at the University of Plymouth. This building, named after the Plymouth Sutton MP who was the first woman to serve in the House of Commons, is at the centre of a major scheme connecting the campus with the Drake Reservoir and its adjoining parkland. The Nancy Astor Building is the new home of the Faculty of Health and Social Work.

The designers, Hoare Lea, selected the Andrews equipment as it fulfilled a number of important criteria: the University's policy on carbon emissions, Part L of the Building Regulations, the requirement for a 'very good' BREAAAM rating and, last but not least, the company's own policy of minimising the carbon footprint of its design projects. A spokesman for Hoare Lea commented, "A real benefit was that Andrews were able to supply the whole package, which made the design much more straightforward than combining water heaters and solar system from separate manufacturers."

The Andrews Water Heaters package is designed to provide abundant, virtually instantaneous, domestic hot water to the entire building. Outlets in the Nancy Astor Building comprise 17 showers, 28 wash hand basins and 10 sinks located within the sports facility, the academic teaching area, the café area and including all WCs, cleaners and tea point facilities for the four storey office accommodation. The two MAXXflo CWH120/300 storage water heaters are located in the Energy Centre on the lower ground floor, along with a 1500



litre stainless steel pre-heat unvented cylinder and the other components of the solar heating package. The 21m² of SOLARflo evacuated tubes for solar collection are mounted horizontally on the flat roof of the North Core plant room, some 28 metres above the Energy Centre.

The University of Plymouth's framework building services contractor and installer of the equipment, MITIE Engineering, commented, "Installation of all the Andrews equipment went well and the evacuated tubes were very simple to install. With outlets located throughout the building, programming required careful planning and co-ordination and the support and back up received from Andrews was excellent."

Water is preheated by the solar collectors, which have the evacuated tubes rotated to an



angle of 20° in order to optimise their efficiency. The heat is then transferred to the single coil unvented cylinder which in turn supplies the two MAXXflo water heaters, thereby considerably reducing consumption of natural gas. In addition to the solar collectors and cylinder, the complete SOLARflo package includes solar controls, pump station, expansion vessels, first fill of heat transfer fluid and collector mounting accessories. The entire water heating system is controlled via the on-site Building Energy Management System.

The MAXXflo range of gas-fired storage water heaters consists of nine models and a choice of four nominal outputs from 30kW to 120kW. The MAXXflo models selected for this project have a capacity of 300 litres, the largest in the range achieving an operational efficiency of 109%.

Project Requirements:

- Energy efficiency a priority, using LZC (Low to Zero Carbon) technology
- A safe, reliable and cost-effective source of hot water
- Straightforward commissioning, preferably with the entire heating and hot water system supplied by one manufacturer

Solutions:

- Two MAXXflo CWH120/300 direct fired condensing storage water heaters
- SOLARflo solar thermal water heating system including:
 - 21m² of evacuated tubes
 - Single-coil pre-heat cylinder
 - Solar controls unit, pump station, expansion vessels, first fill of heat transfer fluid and collector mounting accessories