Aberdeen goes big on solar

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Aberdeen City Council is to install one of the largest solar installations in the UK to heat the swimming pool at the Academy in Bridge of Don.

The 180 square meter installation, designed by solar heating specialists Riomay of East Sussex, will cover the entire roof of the pool with 60 evacuated tube solar panels. Despite Aberdeen being further north than Moscow, Aberdeen City Council is one of a number of local authorities turning to solar heating for swimming pools.

Further South Bridgnorth Council are installing solar heating on a specially built pergola beside their public pool at Highley while on the South Coast Brighton University is among several organisations considering the solar option for heating pools.

Kevin McDonald, Energy Engineer, Energy Management Unit with Aberdeen City Council says: 'Statistics show that, though not the warmest, Aberdeen is officially Scotland's sunniest city and the new solar panels on the roof of the swimming pool at Bridge of Don Academy will make best use of this clean, renewable energy resource.

The solar collector installation will be one of the largest in the UK and the investment will save on energy costs in the long term.

”A display unit is to be located in the community area showing present and cumulative output of the panels and a film is being made by Riomay of the installation from manufacture through to completion to be used as an educational aid for schools and the community,” Mr Mc Donald said.

Although based on the South Coast of England, Riomay has been responsible for solar installations on a number of major development and regeneration sites around the UK and Europe. Recent projects include Gatwick Airport, Windsor Castle, HM Cardiff Prison, Fife Council, Habinteg (Ulster) Housing Association and a primary school in Warsaw. Riomay has also provided solar systems for numerous schools, hospitals, medical centres and private developers.

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Technical notes
There are two main types of solar panel. Some convert sunlight into electricity, while others convert it into heat. Riomay Suntubes generate heat and use that heat to raise the initial temperature of a hot water system.

Riomay Suntubes are an advanced form of evacuated tube collector. Each panel has six high transmittance glass tubes which are virtually transparent to solar energy. Inside each tube a selective coating on the absorber plate maximises the solar energy absorbed and minimizes heat energy loss by radiation. Each tube is evacuated, the resultant vacuum virtually eliminating any heat loss by convection or conduction.

Riomay Suntube panels use an indirect system to heat water. A heat transfer fluid, a solution of water and non-toxic anti-freeze, absorbs heat as it passes through the Suntube. It is pumped to a heat exchanger in the hot water tank where the heat passes into the water. The heat transfer fluid is them pumped back to the solar panel.

An electronic device, which controls the pump, detects the difference in temperature between the solar panel and the hot water. When the temperature in the panel is lower than the temperature in the tank, the system remains on standby. When the sun raises the temperature in the panel to 4oC higher than the temperature in the tank, the differential temperature controller switches on the pump.