

## CASE STUDY 8 - MIXED RENEWABLES, PUBLIC BUILDINGS

### Whitesands Bay Cafe & Public Conveniences, St. Davids

Between November 2003 and June 2004, Carreg Construction rebuilt the Whitesands Café and Shop for St. Davids City Council. The project used extensive innovative design, and the building has both solar hot water and photovoltaic solar panels as well as its own wind turbine, all of which supply the project with renewable power and hot water. The City Council has won an Award for the Outstanding Promotion of Sustainable Tourism through the cafe redevelopment.



The Renewables at the public conveniences were installed through the Pembrokeshire County Council and St. Davids Eco City Group.

#### RENEWABLE INSTALLATIONS ON WHITESANDS CAFE

Solar Hot Water Panels provide hot water to the kitchen and heating circuits. 4000kWh savings & 760kg CO<sub>2</sub> saved.

Photovoltaic panels provide electricity for lighting, and supply excess power to the National Grid. 1750kWh savings and 753kg CO<sub>2</sub> saved.

A Demonstration Wind Turbine is used to provide electricity to small power outlets and batteries that run the cold room extractor fan. 360kWh savings and 155kg CO<sub>2</sub> saved.

Other energy saving features include automated windows open in warm weather to ventilate the buildings, and heat recovery fans also draw waste heat away from freezers and into the café in winter months.



Live displays in the café show the amount of power being generated by the renewable energy systems



The Solar Hot Water Tank and Controls in the Cafe

## COSTS

Viessmanns Solar Thermal £4250  
 Viessmanns Solar PV Panels £9800  
 Air-X Marine Wind Turbine £4050

## GRANTS

Sustainable Development Fund  
*Low Carbon Buildings Programme*  
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 Sustainable Development Fund  
*Low Carbon Buildings Programme*  
 + Energy Saving Trust Funding

## RENEWABLE ENERGY SYSTEMS ON THE WHITESANDS PUBLIC CONVENIENCES



Solar PV Panels have been installed to provide electricity to lighting circuits. 1000kWh savings will be made and 430kg CO<sub>2</sub> saved.

Rainwater Harvesting. A 20,000 Litre underground tank has been installed to serve toilet cisterns. 500m<sup>3</sup> of water will be saved and 480kg CO<sub>2</sub> saved.

*Diagram of a typical domestic scale rainwater harvesting system*

## COSTS

Kyocera Solar PV Panels..... £7k  
 Polypipe Civils Tank ..... £7k

## GRANTS

New Opportunities Fund  
 New Opportunities Fund

## USEFUL CONTACTS

Low Carbon Buildings Programme ..... 0800 512 012  
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*Sustainable Development Fund*

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LOW CARBON BUILDINGS PROGRAMME - CASE STUDY 8 - MIXED RENEWABLES, PUBLIC BUILDINGS