Ysgol Harri Tudur - BREEAM Man 9 Case Study

A basic description of the project: This project involves a new build age 11-19 secondary school to replace the existing Pembroke School buildings.

BREEAM Rating and Score: Excellent / 74.1% (Design Stage)

Key innovative and low-impact design features of the building:

• Photovoltaic panels to generate electricity.
• Dedicated Combined Heat and Power (CHP) system.
• 30% Increase in levels of insulation throughout the building.
• The levels of glazing employed provides significant improvements in daylight penetration.
• Low impact environmental building materials are used where possible. Extensive use of "A" rated materials specified in accordance with the Green Guide to Specification lowers the buildings environmental impact.
• Building to be constructed with materials with a high recycled content contributing to a high "WRAP" score of at least a minimum of 15%.
• Due regard given to Life Cycle Costs ensuring building materials are robust and appropriate to client needs.
• A diverse range of transport options are promoted through the provision of cyclist's facilities and management of car spaces and promotion of public transport.
• Landscape retention and interventions are made to improve the bio diversity of the site ecology.

Basic building cost: £1,007/m²

Services cost: £483/m²

External works: £59m²

Gross Internal Floor Area: 13470m²

Total Area of Site: 14.334 Hectares

Area of Circulation: 1823m²

Area of Storage: 690m²

Function Areas (main hall and dining hall?): 982m²

Percentage of grounds to be used by the community: 28.5%

Percentage of buildings to be used by the community: 18%

Predicted electricity consumption: 534,840kWh/m²

Predicted fossil fuel consumption: 1,837,500kWh/m²

Predicted renewable energy generation: 7.9kWh/m²

Predicted water use: 6m^3/person/year

% predicted water use to be provided by rainwater or greywater: N/A

The steps taken during the construction process to reduce environmental impacts:

Innovative construction management techniques have been detailed within the Project Environmental Management Plan, the main aims and objectives are:

- To eliminate pollutants
- To minimise impact of any flora, fauna and local inhabitants
- To reduce energy consumption
- To maximise the re-use and recycling of materials
- To include environmental considerations in the selection of materials and components
- To promote environmental awareness amongst staff, sub-contractors and suppliers
- To accommodate any comments made following the further environmental assessments, any commitments agreed through discussions with local residents and/ or organisations.

A list of any social or economically sustainable measures achieved / piloted:

In addition to public and stakeholder consultations, a large amount of works was undertaken to engage the pupils and staff with the project to ensure that the school felt part of the whole project.

- Roosting boxes will be located around the site
- Low Water demand sanitary installations
- A school recycling policy is in place, which includes the recycling of organic food waste, paper and magazines, cardboard, plastics, metals, printer & toner cartridges etc.
- The development has been designed to incorporate the recommendations of ‘Secured by Design’.