

Okehampton Business Centre, Exeter Road, Okehampton



Building Summary

The new Okehampton Business Centre was opened in September 2008. The building provides work space for start up and growing businesses in the market town of Okehampton.

Situated in a prime location in the 10 hectare business park owned by the South West of England Regional Development Agency, the building is managed by the owners, West Devon Borough Council.

The 1,200m² building provides space for 13 offices and 3 workshops complete with communal reception, kitchen, training and meeting facilities. The site servicing and building were completed in June 2008 for approximately £5M.

The delivery team were charged with delivering a low impact building to meet an excellent standard and be within the upper quartile of performance.

Funders: South West of England Regional Development Agency, Government Office for the South West (EU Objective 2 ERDF), West Devon Borough Council.

Client: West Devon Borough Council

Architect: SMC Penrose

Civil & Structural: Pell Frischmann

Mechanical & Electrical: Halcrow Yolles

Landscape Architects: Halcrow

Planning Coordinator: Robinson White Partnership

Project Managers: Cyril Sweett

Principal Contractor: ROK

Photo: SW RDA – Okehampton Business Centre

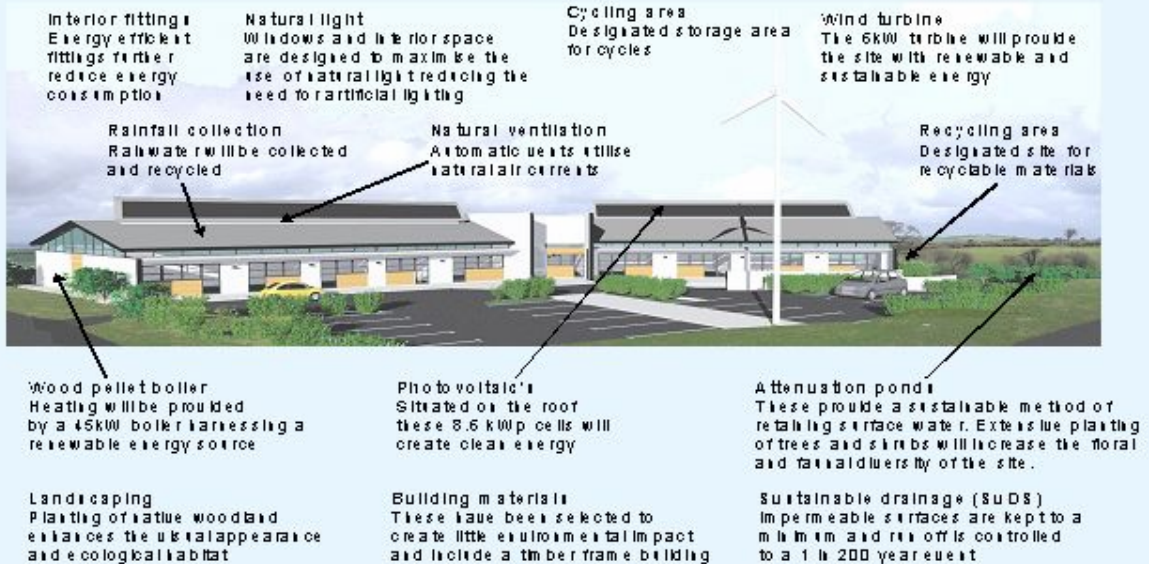
Climate Change Adaptation measures

- *Orientation* – the building is orientated to take advantage of the natural contours and the north facing aspect for the major windows, including glazing to reduce solar gain
- *Lighting* – use of high levels of natural lighting using north lights, sun tubes and large aspects of high performing windows. The potential for solar gain and glare has been addressed with the use of structural shading with wing walls, deep eaves and brise soleil. The limited amount of light fittings used are highly efficient
- *Ventilation* – the building is designed to naturally ventilate with automated and manual opening windows. The north light is used to draw air flow through the building as a linear chimney effect
- *Rainwater harvesting* – rainwater collection meets the needs of all the non potable water applications, which is approximately 50% of the buildings needs or 450 m³ per year
- *Heat* – hot water and space heating requirements are met by a 45kW biomass boiler burning wood pellets. This unit will meet the buildings heat demand for 90% of the year. This unit is complemented with a LPG assist / backup unit
- *Electrical power* – the building is fitted with a 6kW wind turbine and 8.6 kWp of photovoltaic cells. These units should meet all of the electrical needs for the regulated emission items (approx 60% of the buildings needs)
- *Surface water attenuation* – the park has been constructed with a flood attenuation pond designed to restrict pass forward flows from the site to below the green field rate. This offers a benefit to the downstream catchment which has a history of flood risk. The ponds also provide a diversification of the local ecology
- *Planting* – extensive natural planting to the area provides greater opportunity for bio-diversification. Particular attention has been made to the needs of the local bat populous

Benefits of adapting

- Creating a pleasant and healthy place to work
- Meet the funding requirements
- Provision of a low carbon footprint building – the buildings emissions for both regulated and non-regulated are reduced by 80% compared to the SAP standard building
- Enhanced protection of vulnerable downstream catchment from flooding
- Enhancement of the natural landscape to further the diversity of the ecology, flora and fauna of the local area
- Reduction in running costs
- Generating a pride and enhanced conscientiousness among the delivery team resulting in a high quality build
- Building Research Establishment Environmental Assessment Method (BREEAM) Offices 2006 – excellent rating
- Civil Engineering Environmental Quality Assessment and Award Scheme (CEEQUAL) – excellent rating
- Local Authority Building Control Awards for sustainability – Devon winner, National final 6, result pending (Oct 08)
- Best Small Renewable Energy Scheme at the South West Green Energy Awards
- High levels of sector, press and media attention.
- Ability to attract higher value tenants
- Winner of the National final of the Local Authority Building Control (LABC) awards in its category, 'Best Sustainability Project'

Rural Business Centre, Okehampton is using the latest environmentally sustainable technology to reduce the carbon footprint of West Devon Borough Council



Additional Features

- *Cycling area* – the building has an underground secure parking area complete with wash down facilities to encourage cycling
- *Recycling area* – a designated area has been built to house re-cycling and waste storage facilities for the building
- *Building materials* – the building is designed to promote well being and comfort. It is based on a timber frame structure with high levels of glazing and natural materials. The carpets are made from recycled wool and the walls are painted in natural paints. We have tried to minimize the use of uPVC and materials are locally sourced where possible. 84% of our construction waste was diverted from landfill to be reused or recycled
- The building will be subjected to a post occupancy evaluation to assess the benefits to the tenants and any issues arising to inform lessons learnt
- The building has been fitted with a energy monitoring system and the SW RDA have commissioned their consultants to undertake a year long initial study to determine the actual performance of the renewable energy solutions installed
- The SW RDA will be undertaking further case studies of this project to determine its in use whole life cost to better inform its decision making

Overcoming barriers to implementation

- *Costs* – whilst many of the “sustainable” features of this project come at no or little additional capital expenditure the overall project, costs have exceeded by 18% the cost of a building that merely meets the Building Regulations. Some of these costs are site specific such as the attenuation ponds but the cost for the renewable heating plant is a direct additional capital cost as we have installed a back up LPG system. However the running costs of the boiler are about $\frac{2}{3}$ of the LPG
- *Risk* – whilst these individual technologies have been in existence for some time in the continent and parts of the UK, there is not a great deal of published verified performance material. We have therefore taken a risk in using the manufacturers data on the performance and return of these technologies. However, the risk of not taking this approach and delivering a poor building which is not sufficiently future proof was not acceptable
- *Design* – the client must show clear leadership from the outset and work with the designers to determine the brief before commitments are made and changes become expensive. This project was let after a complete design had been undertaken to remove the time pressure of a design and build approach. The client maintained control on the outputs and outcomes of the project. When it comes to the energy systems for the building a key lesson carried in to this project from previous projects was to get the M&E designers into an integrated team from the outset and spend a greater proportion of time on the design of the building management systems. Often these plant items work perfectly well in isolation but fail when connected together with poor quality management software
- *Planning* – a range of planning applications were submitted. Initially for the site in total and then two for the building - one with the wind turbine and subsequently one without in case the planning authority or national park would object. Our intention had been to submit for a larger 55kW turbine (sized to meet all of the electrical needs of the building) but were dissuaded on visual impact grounds as the blade diameter was 6 metres higher
- *Grants* – these are time-capped and the experiences of applying and going through the process of the Low Carbon Building Programme grants from the DTi was poor. The need to obtain quotations and use their framework suppliers led to complications for the principal contractor. The suppliers approach to health and safety and modern construction working was poor and, with the arrangements for engaging the various suppliers, the supply chain ended up at several levels and a handling charge of approximately 15% on the cost if we had engaged the suppliers direct. This also leads to complications in obtaining warranties through the supply chain
- *Utility companies* – the power companies are reticent about enabling connection of renewable energy solutions to the grid. It took a long time to be able to find suitable inverters and meters to enable connection to occur. This led to a delay in the programme. The water company, South West Water, would not entertain the adoption of the surface water attenuation system. This leaves us with a maintenance issue
- *Long term management* – it has been a challenge obtaining suitable warranties for the supply equipment and establishing a management company to maintain the grounds and attenuation ponds

Contact:

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Relevant links:

www.westdevon.gov.uk - www.westdevon.gov.uk/upload/public/attachments/817/opp_oke2.pdf
www.southwestrda.org.uk - www.southwestrda.org.uk/news/release.asp?ReleaseID=1890