

CAPITA SYMONDS

STRUCTURES

G. Park Blue Planet Project at Chatterley Valley

Capita Symonds Structures provided civil, structural, highway and geotechnical services for this warehouse development for Gazeley UK.

The project has won several awards, notably the Leading European Architects Forum (LEAF) Best Sustainable Development Award 2009 and is the first ever project to receive the BREEAM (Building Research Establishment Environmental Assessment Method) "Outstanding" (design stage) rating.

The 52 acre park in Newcastle-Under-Lyme is the culmination of Capita Symonds' and the design team's ongoing 'eco-template' sustainable development work with developer Gazeley UK. It features a variety of renewable and sustainable power sources with enough capacity to support the park and export power and heat to the neighbouring residential development. Buildings within the park have a thermal efficiency far exceeding current UK Building Regulations. They are designed to maximise daylighting and feature solar power generation, energy efficient artificial illumination and roof lights that eliminate night-time light pollution.

The main warehouse and office accommodation is shrouded by a vast low pitched roof, from which rainwater drains directly into ponds and streams on the landscaped site. Additionally, a 20,000 litre tank stores some of the rainwater for flushing WCs. Providing 385,000 sqft of storage space, the steel framed warehouse is clad in insulated composite panels and features ETFE roof lights with inbuilt photovoltaic cells. Its south wall is designed as a solar attractor. Dark in colour, it absorbs the warmth of the sun, which is then fed into a plenum and redistributed throughout the interior as free heating. The offices are over-clad with FSC approved Western Red Cedar.

On site power sources include the solar technology installed onto the warehouse, highway kinetic plates and a planned biomass plant which will provide heat and energy for the completed buildings and future planned developments on the site, with enough left over to export to 3100 nearby homes.

The design achieves lighting and power savings of 49% when compared to a conventional distribution building; heating energy savings of 68%; and water savings of 60% (some 726,000 litres per annum).

More than half of the site is landscaped, creating green park space for workers and the public, with links to local public footpaths and canal-side walks.

The GPark Blue Planet sustainable features:

- Rainwater harvesting for WCs and wet landscaping
- ETFE roof lights with inbuilt photovoltaic cells
- Southern facing solar attractor wall
- Airtight construction 75% better than statutory requirements
- Use of timber from approved sustainable sources
- Bio mass plant
- Exportation of power to nearby homes and the grid
- Kinetic plate technology to harvest energy from vehicles entering the site
- Green space for workers and the public
- Diverse planting to attract native flora and fauna
- 100% of energy and heat is supplied by renewable sources
- Prefabrication and recycling maximised and 40% of materials supplied from within 35 miles of the site

Capita Symonds Structures Team

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Project Team

Client - Gazeley (UK) Limited
Architect – Chetwood Associates
Civil/Structural Engineers – Capita Symonds Structures
Project Manager – Lysander Associates
Main Contractor - McLaren Construction
Services Engineer – Kelly Taylor Associates
Cost Manager – Davis Langdon

