



Gateway Sixth Form College, Leicester, UK Sustainable Design Solution

Client:
Gateway College

Contractor:
ISG

Role:
Masterplanner,
Architect

Value:
£23.9m

Completion:
August 2009

Procurement / Contract:
Two Stage Design
and Build

Energy conservation and creation was one of the top priorities for the building, and its fabric was designed to exceed current statutory requirements wherever possible.

- **Maximising daylight** – Lighting is supplemented using intelligent lighting controls and low energy fittings wherever possible. The central glazed atrium acts as the hub and heart of the college, and is protected by brise-soleil on the southern façade. Solar control glass is employed on the rest of the south facing glazing.
- **'Visible sustainability'** – The energy centre is placed in a prominent public location at the front of the building, with large glazed panels allowing good views of the Biomass boiler. An LCD display resides in the main entrance to display and monitor the performance of the PV panels and wind turbine, also linking this to its website.
- **Photovoltaic glass** – The front entrance is almost fully glazed with photovoltaic laminate. In combination with the solar control glazing, the dense arrangement of the PVs also contributes to limiting solar gain on this elevation.
- **Natural ventilation** – The building is predominantly naturally ventilated, and windows and equipment linked to the building management system control heating and cooling.

Most of the teaching pods off of the main atrium have exposed precast concrete plank ceilings. These provide thermal mass to help to moderate temperature changes. Night-time cooling is achieved via high level windows linked to the BMS system.

- **Wind turbines** – A considerable amount of research had been conducted into providing a wind turbine that took advantage of the site's elevation. The turbine and PV's between them generate a respectable amount of power for the college. In between term times, these installations will continue to provide energy back to the National Grid, thus building up an additional saving on energy costs for the College.
- **Sustainable drainage** – Due to the impermeable clay soils allowing little absorption and poor surrounding drainage infrastructure, a large number of attenuation tanks and swales have been installed to keep the water on site. Permeable paving beneath the car parking is lined to act as an attenuation tank.

The building has a carbon footprint of less than half of a new build college and has an energy performance score (EPC) of 28, compared with 46 for a similar new building. The college has annual CO₂ emissions of 17.3kg/m².