



partnerships for schools
building schools for the future

This case study explores how Big Wood School in Nottingham is supporting the sustainability agenda through its innovative approaches to carbon and water reduction, waste management and energy monitoring.

It also outlines how the team behind the school has ensured that students and the wider community have had an input into the sustainable development of the new buildings through consultation exercises.

Key project information

Local authority: Nottingham City

BSF wave: Wave 2

Type of school: Business and Enterprise College (ages 11-16)

Project cost: £18m

Number of students: 750

Project leads: *Inspiredspaces* (Carillion), Capita Architecture

Zero carbon schools in a zero carbon city: the vision of Nottingham City Council

Project description

Big Wood is an 11-16 School built on the edge of Bestwood Country Park, with approximately 750 pupils currently on roll. The school is part of the first phase of Nottingham City's BSF project and will move into its new buildings in September 2009. The development of the new school buildings is taking place next door to the current facilities so that students can work with minimal disruption until the day of the move to the new school.

Big Wood school was designed by Capita Architecture who were concerned with sustainability issues given Nottingham City's vision to become a zero carbon local authority. As such, the school has a number of interesting green credentials. This case study will highlight some of the more inventive tools helping Nottingham to achieve its zero carbon vision. These tools are not restricted purely to design features, but methods of engaging and teaching students and residents in Nottingham about sustainability.

Carbon and water reduction

Inspiredspaces embraced Nottingham City's vision to become a zero carbon local authority within 10 years by developing a carbon efficient school. This was done not simply through low carbon heating, which is the basis of many renewable energy schemes in schools, but by establishing a renewably fuelled combined heat and power (CHP). The CHP plant substantially offsets the demand for grid energy, leading to dramatic carbon savings - in excess of 60 per cent reduction against current building regulation standards, and in excess of 80 per cent against the DCSF carbon calculator.

The approach to water saving is similar to that for energy. Firstly, the demand for water is reduced by features such as low-volume, dual-flush cisterns, automated spray taps and low-flow shower taps. Secondly, a rainwater harvesting system will collect rainwater from building roofs to be used to flush toilets. This will significantly reduce the need for water from the mains supply.

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Waste management

The first step to a sustainable school is to minimise the amount of waste produced in the design and build of the facilities themselves. Inspiredspaces has worked very carefully with its supply chain to reduce, reuse and recycle as much waste as possible, with supply chain contracts specifying that minimal packaging is to be used on materials used on site. Where packaging is necessary, suppliers are encouraged to recycle it.

Another tool that has been adopted to encourage recycling is an electronic surplus materials pin board - suppliers that have surplus materials can use this pin board to advertise their goods, and other organisations can then purchase these materials for use on other sites.

Technology to reduce/monitor energy use

Rather than being a passive part of the sustainability agenda, Big Wood School will become a dynamic player in the energy market. It will have the ability to sell electricity to the grid and to create revenue through green certificates.

The school's energy consumption and production will be monitored on a display panel in the entrance area. As there is evidence to suggest that such systems can positively influence the behaviour of occupants, it is hoped that the monitor will help to educate school staff and pupils on environmental issues.

Inclusion and participation

The team behind Big Wood School believes that the community must be involved in the development of a school in order to create and maintain a sustainable establishment. As such, a vigorous consultation period was employed, with the community involved in a "visioning process" and students taking part in a variety of activities, including researching how the sustainable qualities of different types of buildings in Nottingham could be applied to a school environment.

A representative group of staff and governors engaged in a robust design process with architects, with students giving feedback at each key stage of the design process. A combination of these consultation exercises means that overall satisfaction with the final design is high.

Key contact

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Further information

More information about Nottingham City's BSF project is available at: www.nottinghamcity.gov.uk/bsf

The DCSF carbon calculator can be downloaded from the Teachernet website: www.teachernet.gov.uk