



Case Study: Kingsmead Primary School

"...a unique and replicable building product designed for the 21st century yet fitting within the key parameters of cost effectiveness, whilst being both environmentally and aesthetically pleasing..."

'CLASSROOMS OF THE FUTURE'

In Spring 2003, Cheshire County Council took the decision to provide a new Primary School to serve the Kingsmead area of Northwich which was to encompass the principles of sustainability whilst providing an exemplar design to meet the 'Classrooms of the Future' vision.



Project Partners

Client: Cheshire County Council
Main Contractor: Willmott Dixon
Consulting Engineers: ARUP
M & E Contractor: Mitie Group

Above: The proposed Kingsmead Primary School's West Elevation.

Below Right: Kingsmead North Elevation.

This 'Intelligent' building fully considers minimising energy use and its principles of sustainable design and construction are apparent at every level. The building design concept incorporates super-insulating properties and natural ventilation through to the use of renewable energy technologies such as photovoltaic cells, solar hot water panels and a Talbot's C1-B Biomass boiler heating system and fuel storage bunker. Rainwater is harvested for flushing toilets and the site uses sustainable urban drainage systems, recycled materials, locally sourced products and materials.

By installing the Talbot's Biomass C1-B Series boiler, Kingsmead Primary School has moved away from fossil fuel to 'locally sourced' biomass fuel, which assists in achieving the Council's targets for Carbon emissions and renewable energy. The boiler provides the heating and domestic hot water for the school. The energy efficient 50kW unit includes a 10m³ storage bunker which offers flexible fuel loading from an integrated bunker fill vacuum system or inlet for a blower delivery vehicle.

The system is fully integrated with the comprehensive Building Management System which co-ordinates the energy sources from the biomass boiler and the solar heating panels. The boiler will tolerate any biomass fuel, but the system is currently configured to burn processed wood pellets, with the aim to move to locally produced wood chip at a later stage. The boiler is over 80% efficient and has full modulating capacity to meet the variable heating load of the building.

The concept created at Kingsmead provides a unique and replicable building designed for the 21st century while meeting the exacting requirements of cost effectiveness, environmental awareness and aesthetic impact.

