

Man 9. Publication of Building Information - Case Study Information

<p>A basic description of the project and building</p>	<p>The building of a new school/Academy as part of the Building Schools for the Future programme. The scheme comprises the construction of a large three storey main block which houses admin, LRC, dining, auditorium and drama class room. This block abuts an existing sports hall which is to be refurbished and retained including refurbished changing rooms.</p> <p>Three two storey teaching blocks join up to the main block and lead onto the sports fields. The existing school will be demolished upon completion of the new school and the area will then be remodelled and landscaped.</p>
<p>The key innovative and low-impact design features of the building</p>	<ul style="list-style-type: none"> • Natural Ventilation over new build and refurbishment where possible to achieve. • High performance glazing on south facades to limit solar gain. • Brise Soleil to classrooms/clusters on south elevation to reduce heat gain and solar glare • Thermal mass exposed in the concrete frame area and where concrete ceilings area exposed to aid in cooling • Integrated outdoor learning areas including Nurture horticultural garden, LRC external space, Peace garden, External amphitheatre and dining and external edible garden and Maths/Endlish teaching space etc. • Daylight dimming with first row of artificial lights to provide energy savings • Absence detection lighting controls to reduce energy consumption. • Energy efficient gas boilers to assist with peak loads. • Energy efficient lighting and controls to reduce energy consumption. • New biomass boiler to provide baseload heat across entire site. • U values for new school to be 20% better than Part L 2006. • Comprehensive metering and monitoring strategy for lighting, power, heating and hot water. • Heat recovery air handling plant • Local temperature control • Plant controllability through Building Management System • Biomass boiler and heating controls connected to IT system for student monitoring and teaching opportunities throughout the school. • Use of sustainable building materials wherever possible.
<p>Basic Building Cost - £/m2</p>	<p>£827.87m2</p>
<p>Services Costs - £/m2</p>	<p>£409.33m2</p>

External Works - £/m2	£69m2
Gross floor area - m2	7880 m2
Total area of site - hectares	4.2 hectares
Functional areas and their size - m2	<ul style="list-style-type: none"> • Teaching Areas – 3319.8m2 • LRC – 141m2 • Main Hall – 184m2 • Sports Hall – 596.1m2 • Fitness suite – 95.7m2 • Activity Hall – 145.6m2 • Dining – 201.2m2
Area of storage - m2	124m2
% area of school grounds to be used by community	Approximately 60%
% area of school buildings to be used by community	Approximately 70%
Predicted electricity consumption - kWh/m2	358,348kWh/year – 45.3kwh/m2 (based on Watts /meter)
Predicted fossil fuel consumption - kWh/m2	15kWh/m ² - (figures used are taken from CIBSE TM as RoT)
Predicted renewable energy generation - kWh/m2	1,030,914kWh/year – 135kwh/m2 (Estimated annual kWh for Biomass Boiler to deliver 90% of annual load for heating and HWS)
Predicted water use - m3/pupil/year	3.9m ³ /pupil/annum
% predicted water use to be provided by rainwater or grey water	No rainwater or grey water utilised
The steps taken during the construction process to reduce environmental impacts, i.e. innovative construction management techniques.	Constant monitoring of; <ul style="list-style-type: none"> • CO2 emissions from site plant, site deliveries and records of CO2 from site activities.. • Site noise • Site dust. • Site materials i.e. sustainable timber and recycled materials / aggregates • Waste handling • Environmental monitoring
A list of any social or economically sustainable measures achieved/piloted.	<ul style="list-style-type: none"> • Bio-mass Boiler • Petrol / Oil Interceptors • Attenuation Pond and teaching space. • Concrete frame elements of the construction. • 90% recycled waste. • Recording the Carbon footprint created by the construction processes of the project and targeting a reduction.
BREEAM Rating and score	Very Good 55+

* BREEAM (Building Research Establishment's Environmental Assessment Method) used as an environmental assessment method for buildings to ensure best practice in sustainable design and used to measure a buildings environmental performance.