BREEAM Credit M14 – Publication of Building Information

Sustainability at the City of London Academy Islington

A basic description of the project and building:

This new build Academy is a secondary school and sixth form, which is sponsored by the City of London Corporation and City University.
It is located on a constrained inner city site which has resulted in phased construction allowing the Academy to operate whilst building works take place.

The Richard Cloudesley School (special needs secondary school) will be co-located on the same site as the Academy but will be accommodated in a refurbished building. The whole site is integrated with the Richard Cloudesley School, for example raised site levels for better accessibility, Richard Cloudesley bus drop off in the car park, shared main entrance and dining and Richard Cloudesley students can use academy classrooms and sports areas.

The building has been designed sympathetically to the neighbouring residential area. It has been limited to 3 storeys and there is a simple palette of materials which are present in the area, including render, brick and cladding panels.

Green roofs have been installed on overlooked roofs (single storey) and provide a habitat for wildlife.

Many existing trees have been protected throughout the construction process and form part of the final landscaping.

The Academy building comprises three parts:

1) sports: sports hall and activity suite with changing rooms, which are also for visitor use. This part of the building can be isolated for out-of-hours use.

2) classroom block: single loaded corridor organises a three-storey block of classrooms.

3) marketplace: Three storey atrium ringed on three sides with open walkways and classrooms.

The key innovative and low-impact design features of the building:

The City of London Academy Islington will have a strong commitment to sustainability and has been designed with the latest environmentally friendly building practices.

The building will have many features which address sustainability:

- Natural ventilation in many rooms including 22 classrooms and the sports hall, along with mixed mode in the dining and activity areas.

- Ground Source Heat Pump to provide heating and hot water. This technology takes advantage of the near constant temperature just under the Earth's surface. This constant temperature provides an ideal medium to extract heat which can be upgraded via a Ground Source Heat Pump for heating buildings.

- Timed-flow showers and taps to minimise hot water use.

- Green roofs to dining hall, substation and changing rooms
- Brown roof to library which uses spoil and rubble from the immediate area saving transportation.

- Natural light to classrooms through large windows with low-e glass
- Natural light to marketplace (atrium) through large roof lights

- Photovoltaic panels to generate light into electricity to power ordinary electrical equipment, for example computers and lighting

- Retention of many trees

- Biomass boiler (located in the Richard Cloudesley school) to provide heating and hot water. This boiler produces less carbon and other emissions and uses renewable fuel sources such as wood chips or bark.

- Low maintenance and durable external materials including brick, render and Trespa.

- Sub-metering to allow monitoring of all energy uses

Innovative building features

The following table contains statistics relating to the performance of the building:

Predicted BREEAM rating and score	Excellent – 72%
Basic building cost	£3,075/m^2
Services costs	£670/m^2
External works cost	£200/m^2
Gross floor area	8,122m^2
Total area of site	1.28 hectares (12,797 m^2)
Function areas & their size	Sports Hall 594 m^2 Activity/Gym/Dance 154.5 m^2 Dining Hall 258.2 m^2 Library 125.4 m^2 Drama Hall 98.7m^2
Area of circulation	1,861m^2
Area of storage	187m^2
Area of school grounds to be used by community	64%

Area of school building to be used by community	16.9% - Ground and First Floor Sports areas as a minimum. The community may use other areas of the Academy in the future.
Predicted electricity consumption	**KWh/m^2**
Predicted fossil fuel consumption	**KWh/m^2**
Predicted renewable energy generation (from)	**KWh/m^2**
Predicted water use	**m^3/pupil/year**
Predicted water use to be provided by rain water or grey water	0%

The steps taken during the construction process to reduce environmental impacts

The main contractor, Galliford Try measure and monitor all water and electricity consumed along with the waste generated on site with the aim of meeting their Carbon Reduction Commitment.

A number of initiatives and techniques are used during construction to minimise the impact the activities can have on the environment:

- Site lighting is linked to timers and light sensors to reduce electricity
- Transport Management plans have been established to reduce the amount of deliveries required, with the aim reducing vehicular emissions for the site.
- Local companies were also incorporated into the procurement strategy to reduce the amount of travelling required.
- A cut and fill strategy (crushing on site of concrete from demolished buildings) for the ground levelling was introduced to minimise the need to import/remove fill to and from site, again reducing vehicular emissions and the need for material.
- The entire site hoardings were constructed with FSC accredited timber.
- High grade ply was used for the concrete formwork which could be re-used rather than having to be discarded after one use.

Social or economically sustainable measures achieved/piloted

- Local sourcing of materials – the concrete was supplied by a local company
- Community access - sports hall and activity suite with changing rooms, ICT areas and Library can be used by the community. Family learning helps build relationships with parents. Before and after school and holiday activities are especially beneficial for students in disadvantageous economic and/or family circumstances.

- Integration of a secondary school with a special needs secondary school – dining, classrooms and sports areas to encourage shared social and learning experiences. The reciprocation of expertise between staff at the Academy and Richard Cloudesley School offers opportunities to improve individual provision, particularly for those with complex learning difficulties. The relationship gives informal routes to speech, physio and occupational therapists linked to Richard Cloudesley.

- Community engagement and involvement – throughout the construction period the local community have been consulted and informed of the build progress and been invited to site tours
  Links with sponsors add to school provision.
  Academy ventures are an important interface with the community. They are judged on their community impact, as well as their commercial viability. Members of the local and business community act as sponsors and Chairs of these ventures.

- Using the Academy as an education resource for sustainability - a landscaped area will be used as a learning resource by the pupils
  A large display panel will be located in the main Academy reception to give an indication of the performance of the Photovoltaic panels. It will display instantaneous power, cumulative energy output and avoided greenhouse gas emissions. A web based display interface is to be provided to enable students and visitors to observe and interact with real time performance information such as that mentioned previously from the Photovoltaic array. Sunshine and temperature data will also be collected.

Project Team

Construction Project Manager	**CITY OF LONDON**
Lead Designer	**SWANKE HAYDEN CONNELL ARCHITECTS**
Constructor	**GALLIFORD TRY PLC**
Quantity Surveyor	**EC HARRIS**
Structural Engineer	**BURO HAPPOLD**
Services Engineer	**BURO HAPPOLD**