

## Sunnyhill Primary School - Volumetric Classroom Extension

### Client information:

#### London Borough of Lambeth

Lambeth Town Hall  
Brixton  
London  
SW12 1RW



<b>Administered from:</b>	Head Office
<b>Form of contract:</b>	NEC 3 with Design - Design & Build
<b>Contract location:</b>	Sunnyhill Primary School, Valley Road, Streatham, London SW16
<b>Value:</b>	£500,000.00 (one off)
<b>Duration:</b>	February 2011 to May 2011
<b>Sector(s):</b>	Civil Engineering, Education, Public sector, Sustainable
<b>Short description:</b>	New School Extension - Bespoke Permanent Modular Offsite School Extension with Innovative Sustainable Design Features

In January 2011, H.A. Marks Construction were appointed by Lambeth Education Authority to design and build a new school extension at Sunnyhill Primary School.

The conceptual design was developed by Shepherd Epstein and Lambeth Education, the full design and build project was awarded to H.A. Marks for best innovation, value and technical ability.

The construction program was very tight and included critical milestones. The most innovative solution was to design and build the project using off-site volumetric/modular units. This allowed us to commence groundworks while simultaneously working off-site to construct the bespoke, individual steel framed modular units.

Fantastic program savings were achieved, estimated at 12 weeks, this meant that the project was completed much quicker than by using the traditional construction approach which minimised disruption to the school.

The carbon footprint of the build process was substantially reduced as deliveries to site were minimal. Less deliveries also meant less disruption, noise and traffic issues as the volumetric units were delivered and installed over the half term holiday.

Due to a high water table, the project presented a unique challenge in the sub-structure. Our Structural Engineers, Checkel Dalton designed the CFA piled substructure which was installed by Van Elle. Sustainable, innovative underfloor heating powered by an Air Source heat pump was designed and installed along with Passiv Vents.

Concrete, screeded composite floors were installed providing a robust and substantial floor mass. Exceptional, through the wall, u-values were achieved with an insulated render system while the front elevation near the original brick built school was clad in individual brick slips to compliment the visual effect.

A highly collaborative approach was adopted with the School and Lambeth Council which resulted in a very successful project, ahead of time and on-budget.

## Project Team

**Client;** London Borough of Lambeth  
**Contract Administrator & Quantity Surveying;** Appleyards  
**Conceptual Design;** Shepherd Epstein

### H.A. Marks Construction

**Construction Director Responsible** - Tim Crowe  
**Surveying/Client Liaison Director Responsible** - Adrian Crowe  
**Chief Planner/Programming** - Martin Hughes  
**D&B Architect** - Architype  
**D&B Structural Engineer** - Checkel Dalton  
**Contract Manager** - Mark Phillips  
**Surveying** - Martin Hughes  
**Off-Site Production Manager** - Tony Goff  
**On-Site Project Supervisor** - Steve Archbutt

**Piling** - Van Elle  
**Off-Site Volumetric Units** - H.A. Marks Off-Site in partnership with Powerwall  
**Facades** - H.A. Marks Facades & Cladding Division  
**Electrical** - H.A. Marks M&E Division



## Contract Evidence

### Added value:

This project offered excellent value to London Borough of Lambeth. We provided an additional classroom area in a very short time frame at a very affordable price. As part of our package, we offered underfloor heating, passive vents and managed to secure an excellent price and lead time on the windows.

### Best practice:

The entire design and construction is extremely sustainable. All manufacturing and site works are controlled by our ISO 9001 Quality Assurance and ISO 14001 Environmental Management Systems.

### Carbon reduction initiatives:

A key carbon reduction initiative was the use of H.A. Marks/Powerwall off-site technology in the production of off-site Pods/Space Frames to form the superstructure. Transport deliveries to site were reduced by 85% while site waste for this project was reduced by up to 90%.

**Client comments:**

Lambeth Education were extremely pleased with the progress made and the Head Teacher was very happy with our low key, non disruptive manner of working which ensured the continued smooth running of the school throughout the project.

**Design team/consultants:**

H.A. Marks had a very good working relationship with the client and the consultants Appleyards/Shepherd Epstein.

**Environmental management arrangements:**

H.A. Marks operate an ISO approved and audited 14001 Environmental System of Management.

**Health and Safety:**

As the majority of the project was pre-fabricated off-site, the use of the H.A. Marks Volumetric System substantially improved health & safety by reducing incidents of working at heights and risks associated with working in bad weather.

**Innovative techniques:**

The most innovative solution was to design and build the project using off-site volumetric units. This meant that we commenced ground works whilst simultaneously working off-site to construct the bespoke, individual steel framed modular units.

**Local labour and CSR:**

H.A. Marks employed a substantial amount of local labour on this project. We view employing local people as an important part of managing and resourcing the projects we do.

**Modern methods of construction used:**

H.A. Marks are a licensed manufacturer and installer of Powerwalls patented off-site, Volumetric System of construction. The superstructure was manufactured off-site in 12 Pods, brought to site and craned into position onto prepared foundations. We commenced ground works whilst simultaneously working off-site at the factory to construct the bespoke, individual steel framed modular units.

**Prefabrications:**

H.A. Marks manufactured the entire superstructure in hot rolled, engineered Steel Framed Pods in our factory.

**Recycling figures:**

Off-site construction and in particular volumetric resulted in 90% less waste on site (source: WRAP survey). H.A. Marks managed to significantly reduce waste using this technique. Our ISO 14001 Environmental Management System also produced a very higher level of re-cycling on site.

**Risk management:**

Any potential risk for the client, in terms of program and budget over run were effectively eliminated.

**Specialist contractors used:**

A specialist contractor was employed to install the piling and the green sedum roofing. These specialists were engaged early, in order to allow us to collaborate on design, queries to prepare and program the work efficiently.

**Standardisation of components:**

The superstructure pods can be standardised to increase savings and efficiency as required.

**Supply chain involvement:**

Our supply chain was instrumental in achieving the tight delivery program. We liaised early with key suppliers, e.g. windows and mechanical elements to ensure the job stayed on program.

**Sustainability:**

Sustainable, innovative underfloor heating powered by an Air Source heat pump was designed and installed along with passiv vents.

Concrete, screeded composite floors were installed providing a robust and substantial floor mass. Exceptional, through the wall, u-values were achieved with an Insulated Render System. The front elevation near the original brick built school was clad in individual brick slips to compliment the visual effect.

**Value engineering:**

Our design and construction package offered added value in the substructure and superstructure elements, we allowed for and included underfloor heating and reinforced concrete retaining walls in our package.

**Zero defects / defects handover:**

H.A. Marks operate an ISO 9001 Quality Assurance Management System and PAS 2030 standards to ensure zero defects handover on our projects.