Swanlea Secondary School, Whitechapel, London E1

For: London Borough of Tower Hamlets

Swanlea is the first new secondary school to be built in London for more than 10 years. From the outset the landscape design was to be an integral part of the school and to be an important contribution to the school environment providing a teaching facility.

The central position of the school building on the site divided the space into 2 main areas. To the north of the building, the large open space is intended for active play and is predominantly hard. It is, however, an irregular and interesting shape allowing pupils to congregate in smaller defensible spaces away from the main play area. To the south of the school building, contained by walls, is the ecological garden designed for quiet passive activities and teaching. Adjacent to the building, there is a break-out space allowing each classroom to extend into the garden. Within the garden is an amphitheatre for teaching and performance. The pool with its boardwalk and marginal planting is the focus of the ecological garden.

City sites are notorious for having difficult ground conditions and before any landscape construction could take place, it was necessary to remove up to 5 metres of fill from the site with the added complication that the site had also been recently fly tipped to a height of approximately 3 metres with contaminated material. This led to the necessity of having to remove the contaminated material to approved tips and the need for bored, cast in-situ piled foundations with a ventilated suspended ground floor slab.

The fabric of a school must possess many characteristics, some of which are not immediately obvious. The need for acoustic separation combined with robustness and fire resistance led to the extensive use of load bearing blockwork for stability and vertical support. The upper concrete floors being formed using precast shuttering with integral void formers to provide service routes and reduce dead weight.

The elegantly curved roofs to the teaching spaces comprise profiled metal decking carried on curved structural T sections. These are raised along the one edge to allow in daylight and here the curved T's are supported on struts pinned at their head and base to accommodate thermal movements of the steel. The system of precast concrete gutters provides the stability to the compartment walls under fire conditions.

A central mall draws the whole school together and this significant structural element went under considerable development in the early stages of the project. The final solution for the support of the curved glass roof is celebrated by a series of bowed circular columns which reduce in diameter as they rise. From the backs of these columns spring trios of slender struts which support tiny purlins running like tramlines the full length of the mall.

The overall stability of the mall and columns has been catered for by the provision of braced bays along the mall with local bracing in the plane of the column using stainless steel dyform cable. Erection was simplified by providing adjusters to each raking support to ensure good line and level.

AWARD

Architects:
Percy Thomas Partnership

Structural Engineers:
YRM Anthony Hunt Associates

Steelwork Contractors:
Custom Metal Fabrications Ltd

Main Contractor:s
Trafalgar House Construction (Regions) Ltd

Judges' Comments:

An elegantly designed row of steel tapered columns supports a glass roof successfully providing an exciting linear heart to the school.