

Factory for UOP Fragrances, Tadworth, Surrey

Brief

The programme required a first stage of 1570m² to include administration, laboratories, manufacturing and storage facilities for the production of fragrances, with expansion of 1860m² at a later date. Key requirements were speed of construction, ability to accommodate change, a high resale value, and minimum capital and maintenance costs as well as a pleasant working environment. Simple movement patterns within the building were an important requirement because of the close working relationship between departments of the company.

Solution

A single-storey, general purpose, optimum performance building capable of growth and change was evolved. Wide-span, purpose-designed tubular steel lattice structure achieves uninterrupted floor space, facilitates internal planning flexibility, and future expansion. Wet trades are virtually eliminated from the construction programme above slab level to achieve fast-build programme.

Prefabricated structure, decking and large grc cladding panel system, finished lime green, enable the basic envelope to be completely watertight in a short time allowing finishing and services trades to work under covered conditions. External views through large opening windows round the perimeter are supplemented by permanent high-intensity artificial lighting.

Use of steel

The building is 51.2m x 29.3m made up of structural bays 14.6m x 7.3m. The ceiling height is 3.7m to the underside of the roof trusses and 4.7m to the underside of the

decking.

Main beams are 0.9m deep lattices made up from welded rectangular hollow sections. Columns are 150mm square set on the diagonal axis to provide sufficient shear plate surface via a welded collar at the beam connections. Pre-coated ribbed steel decking is shot-fired to hot-rolled purlins at 2.8m centres. The large grc sandwich panels are self-supporting between slab and structure and wind forces are transferred into the roof plane by a triangular lattice around the perimeter.

This prefabricated steel structural package including all connections to receive the giant cladding panels was instrumental in meeting the client's requirement for a fast-build programme.

In the production and storage areas, the structure is left exposed, whereas an acoustic ceiling is introduced in the administration and laboratory zones, level with the bottom of the beams, and stopping short so that the bright yellow lines of the steel frame are emphasised throughout the building.

To relate to the main structure, a 4.9m x 3.7m loading bay platform has been designed as a lightweight prefabricated latticed steel box decked with steel treadplate, and supported on levelling jacks. This platform can be instantly relocated when phase 2 of the project materialises.

Purpose designed lighting and service trunking, spiral ductwork and roller shutter doors are all in steel.

ARCHITECTS

Piano + Rogers

STRUCTURAL ENGINEERS

Anthony Hunt Associates

STEELWORK CONTRACTOR

Tubeworkers Ltd

Judges Comments

An excellent small building which demonstrates the attainable lightness of steel construction. Clad in storey height panels of glass fibre reinforced concrete the steel structure is only apparent within where, under a single steel deck roof partly concealed by a false ceiling, three operations of storage, manufacturing and administration are carried out divided only by clear glass partitions.

