

CONSTRUCT Award for a Project Over £2.5m

Laing O'Rourke Construction Ltd
Winners of the Award for a Project Over £2.5m
(Kindly sponsored by Ischebeck Titan Ltd)

Laing O'Rourke Construction Ltd are the winners of the 2017 Award for a Project Over £2.5m, winning the Award for the Two Fifty One Project London



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Two Fifty One project, Southwark

Two Fifty One is a mixed use development comprising a two level basement box, 41storey residential tower and an adjacent eight storey commercial building.

The Two Fifty One site was typical of many inner city island sites, occupying a parcel of land set between Newington Causeway and the oneway streets of Southwark Bridge Road and Gaunt Street.

The team has applied digital engineering (BIM), engineering excellence and design for manufacture and assembly (DfMA) to implement innovative offsite construction techniques and gain the benefits of greater certainty and improved cost, programme, quality, safety and logistics.

Application of DfMA principles to Two Fifty One

Of the 41storey superstructure, 72% of the reinforced concrete frame and façade is being delivered using 7,282 prefabricated precast concrete elements. The vertical structure is formed using three principal components; precast concrete columns, a twinwall core, solidwall stair and lift shafts. The horizontal structure is then constructed using a combination of solid balcony slabs, lattice slab and Laing O'Rourke patented E6H system, whereby a virtually prop free and dry construction is achieved.

Two elements of the structure are particularly noteworthy in their application at Two Fifty One. Firstly, the precast concrete columns are

manufactured to tight tolerances and the Eurocodes allow designers to take advantage of this through the utilisation of partial factors in design. Therefore, the factorycast elements require substantially less steel reinforcement compared to equivalent insitu columns. Hence, it has been possible to reduce their steel content, and consequently cost and embodied CO₂.

Secondly, the Two Fifty One project is the first ever to be built using the E6H flooring system, the latest iteration of Laing O'Rourke's drive towards DfMA, incorporating the highest ever proportion of manufactured components to maximise the advantages available.



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