

30 CROWN PLACE, LONDON EC2



The project at 30 Crown Place is a £60M 18 storey high commercial office development offering 17,500m² of grade A office space in the City of London.

By adopting a lightweight composite steel superstructure and steel substructure, the project team was able to reduce the foundations and reuse piles where possible. The floors act as a diaphragm between the two cores, formed from composite beams. The structural system incorporates the building services within the same depth increasing the efficiency of the system.

The larger lower floor plate rises to ten floors, above this point a smaller floor plate continues to high level. The change between the two is facilitated by a high level steel transfer truss which is used to suspend the column hangers to the southern facade, minimising the number of columns required at the lower levels of the building.

Alan Bunting, Ramboll Project Engineer, says: "The column transfer was integral to the scheme and provides an open plan reduced column office space."

Constructing a frame with this roof truss created a challenge. The hangers needed the truss and the truss needed the floors to be in place, which in turn, relied on the hangers. The solution was to build a temporary truss, between the 8th and 9th floors, from which the hangers could be constructed and supported until such time as the permanent truss was ready to receive their load.

The building loads were transferred from the temporary truss to the roof truss by pushing the column hangers and all nine floors, up to meet their connections. Large hydraulic jacks were used to push against the lower truss, while monitoring stations on three floors reported its movement.

"Without the inherent capabilities of steel the project could not have been achieved," says Mr Bunting. "Steel was the only cost effective material to allow the integration of the structure and services within the floor zone, while providing minimal columns."

Fact file

Architect:
RHWL Architects
Structural engineer:
Ramboll
Steelwork contractor:
Rowen Structures Ltd
Main contractor:
Skanska
Cost consultant:
Davis Langdon LLP
Development manager:
City Offices Real Estate
Client: Greycoat
Crown Place Limited
Partnership

30 Crown Place image courtesy of Ramboll

40 PORTMAN SQUARE, LONDON W1

One of the main client objectives for 40 Portman Square included delivering a first class office development to attract financial tenants to a traditionally unfashionable London location.

Steve Peet, Arup Project Engineer, says this has been achieved in style with a building providing almost 9,300m² of office space over seven floors and two storeys of residential accommodation above.

"A total building cost of £36.5M and all offices pre-let six months before completion at average rents of more than £100 per square foot demonstrates the market's reaction to the development and its cost effectiveness," says Mr Peet.

The quality of the office accommodation has been described as exceptional. The building contains some of the largest floor plates in the West End, providing column free space with abundant natural daylight in all sides.

The structure is a steel frame of long span fabricated beams and composite floors about a central braced steel core. The central core and long span floors allow for all office levels to be free of internal columns. A novel suspension system within the dry lined walls of the residential floors permits the 42m wide northern elevation of the sixth floor office to be entirely unobstructed by columns.

Steel was the only realistic choice for the long span floor beams in order to integrate the services, while the weight saving determined that single piles for each column were feasible with the consequential saving to cost and programme.



Fact file

Architect:
Squire and Partners
Structural engineer:
Arup
Steelwork contractor:
Graham Wood
Structural Ltd
Main contractor:
BAM Construction Ltd
London
Clients: Delancey,
Standard Life
Investment Funds

