

One Crown Place, London

PROJECT TEAM

Architect: **KPF**
Structural engineer: **AKT II**
Steelwork contractor: **Severfield**
Main contractor: **Mace**
Client: **AlloyMtd**



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One Crown Place is a true 'city within a city block'. It is located at the boundary of the historic City of London, just within the London Borough of Hackney, and occupies almost all of an island site. The scheme principally introduces a new office block that's topped with two new residential towers, while variously refurbishing and repurposing the site's existing and historic buildings to deliver a diverse mixed-use development.

Positioning two residential towers directly on top of a mid-rise office podium requires a truly bespoke design solution to ensure that each of these two differentiated uses offers an optimum spatial and architectural functionality for its occupants. The six-storey office block is framed in steel up to the start of the upper residential volumes, which are then framed in reinforced concrete.

The change in structural material between the oblique and dense residential column grids above and the larger open-plan office grid below, with spans of up to 12 metres, was achieved using a compact transfer zone of 15 steel trusses.

They accommodate two inhabited floors within their depth – the lower floor provides high-end amenity spaces, while the upper floor is the first of the residential levels. Not only do they support the two residential towers above, but they also form part of the interior architecture. The trusses are up to 25m-long and are supported at each end on 600mm x 600mm double-webbed mega-columns, each of which is fabricated from four plates.

To facilitate construction, all the project's steelwork, including the trusses and mega-columns, had to be broken down into components weighing less than 9t, in order to stay within the lifting capability of the site's tower cranes. To reduce the required number of lifts, as well as the risk of additional bolting at height, the flange splice plates are profiled with rounded ends, and were partly bolted prior to transit. This allowed them to be simply 'swung' into place to form the spliced connection when the truss section was lifted into position half-way up the building. The web splice plates were then bolted on the remaining, alternate sides to complete the connection. Each of the trusses was trial

assembled at the fabrication yard prior to delivery to site to ensure their construction would proceed smoothly.

Throughout the office floors, cellular beams span outwards from the centralised core to the perimeter, creating the column-free floorspace, while also accommodating the M&E services within their depth.

Judges' comment

Two 28 floor concrete-framed residential towers are, remarkably, supported on a steel-framed office block. A two-storey transfer structure of 15 steel trusses transfers the dense residential column loads over the largely column-free workspace floors below. This compact zone also imparts a bold theme to the interior architecture of amenity areas, and of the first of the residential levels.