

Commendation

Structural Steel
Design Awards 2024

Paddington Square, London

PROJECT TEAM

Architects: **Renzo Piano Building Workshop,
Adamson Associates**

Structural Engineer: **WSP**

Steelwork Contractor: **William Hare Limited**

Main Contractor: **Mace**

Client: **Great Western Developments Limited**



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The 23-storey mixed-use building revitalises the space between Paddington Station and St Marys hospital, with a spacious piazza at its forefront. It features adaptable office space, a large lobby, four retail and restaurant floors, London's highest rooftop restaurant and a 30m tall mast, all totalling around 6,000m².

Paddington Square faced a unique set of challenges, contending with two sets of national strategic tunnels, a new tube station entrance, accommodations for a Grade I listed station, and a rerouted road excavated to create a sunken public square that necessitated extensive services diversion, including a major sewer adjustment.

While the exterior of the building may appear straightforward with its 'cube' shape, it disguises an intricate steel frame, which relocates the primary building columns by 4m, transitioning from a smaller footprint at ground level to a perimeter column grid starting from level 6 and upwards. The cantilevering beams, starting at 4m on the third floor, progressively decrease in length on each subsequent floor as the raking columns ascend to the sixth level.

Ascending from a robust four-level deep concrete substructure, the steel framework encloses a double-height reception area and approximately 33,400m² of spacious office space. The steel frame incorporates three

significant trusses, which are 18m long, positioned at level 2 to create the entrance for the retail mall.

Making the extensive canopies surrounding the building as light and slender as feasible was fundamental in the architectural design. To achieve this, a system of hanging rods were implemented and rainwater pipes and gutters were integrated within the structural depth.

A scenic lift, attached to the exterior of the building, provides access to the upper public spaces. Its shaft is a series of horizontal E-frames and tension rod bars, anchored to three supporting columns, which are connected to the building's main steel frame.

Taking the blended tonnage of the steelwork frame over the Gross Internal Area (GIA) as the comparison metric, it reflects an efficient design achieving 85kg/m² of steel GIA, excluding connections and temporary works.

Steel was chosen deliberately for its capacity to convey a transparent frame aesthetic, revealing exposed beams and columns within the building's interior. Additionally, an articulated exoskeleton is prominently visible through the glazed elevations of the structure. It is on track to attain a BREEAM 'Excellent' rating for both office and retail space.

Judges' comment

This elegant mixed-use building features a 19-floor office 'cube' suspended above four retail and restaurant levels addressing a new public space that has revitalised the area between Paddington Station and St Mary's Hospital. An improved environment for both the travelling public and office users is complemented by a landmark structure visible through layers of diaphanous steel and glass elevations.