

# Award

## 21 Moorfields, London

### PROJECT TEAM

Architect:  
**WilkinsonEyre**

Structural Engineer:  
**Robert Bird Group**

Steelwork Contractor:  
**William Hare Limited**

Main Contractor:  
**Sir Robert McAlpine**

Client:  
**Landsec**

Consultant:  
**Gleeds**



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21 Moorfields is a steel-framed commercial and mixed-use development in the heart of the City of London, suspended above Moorgate Station at the intersection of the Circle, Northern and Elizabeth Lines. The project spent five years in development and a further five years on site and accommodates Deutsche Bank's UK headquarters. It delivers 550,000 sqft of prime office space, arranged as two buildings on a podium above a live rail interchange. The structure is a remarkable feat of engineering and architectural collaboration, transforming a site that had stood vacant for 15 years into a vibrant, connected urban destination.

The building's entrance is located on the first floor, above the station's ticket hall, accessed via a dramatic three-storey escalator lobby, visible from Moorgate. With 85% of the site perimeter occupied by the station, the design required a column-free span across the entire footprint. This was achieved by placing 16 perimeter piles, each 2.4m in diameter and 60m deep, making them the highest-loaded individual piles ever constructed in London. The office floors were then slotted into a multi-storey bridge. These foundations support a series of 55m-spanning steel trussed arches and triangulated trusses, which define the building's expressive architectural language.

The structural design was driven by the constraints of building over a live station. Composite steel floor beams with lightweight concrete slabs enabled long spans and reduced weight. A sequence of over 60 construction stages was developed to manage force distribution and ensure safety. Lightweight steel-braced cores, supported on transfer trusses, provide lateral stability, while primary elements were designed with alternative load paths and blast resistance, including over 200 element removal cases assessed using non-linear dynamic analysis. Something which could not be achieved with any other construction material.

Fabrication and erection required extensive temporary works. A steel grillage was constructed to support piling rigs and cranes, later reused for superstructure works. Six 7m-deep launching trusses were installed to span the station, providing temporary support and becoming permanent structural elements. These facilitated the construction of 10-storey mega arches, minimising internal columns and maximising open floorplates. Large 20 tonne nodes were positioned on-site with precision, and connection detailing was coordinated across disciplines to meet architectural and logistical constraints.

Delivery was shaped by the retained deck of Moorgate Station, which imposed strict loading limits. Steelwork was lifted through temporary openings, and geospatial monitoring confirmed predicted movements. Two ballasted base tower cranes were supported off the existing structure.

The scheme successfully met its objective of delivering a world-class headquarters for Deutsche Bank on one of London's most complex sites. The design team worked seamlessly with contractors to overcome engineering and logistical challenges, integrating the new building with the Elizabeth Line and revitalising the surrounding public area.

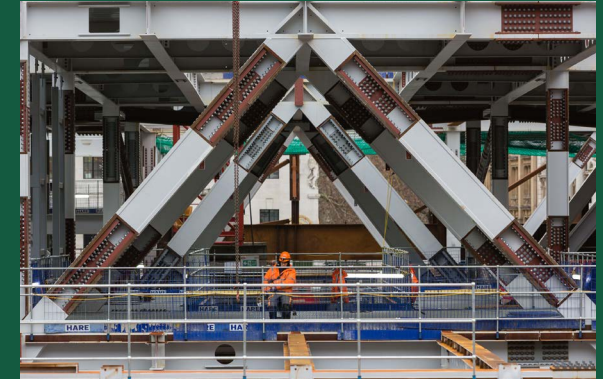
Environmental performance was a key focus. The reuse of the station roof and foundations maximised material efficiency, with the smaller west building entirely supported on existing structure. The absence of a basement, a typically carbon-intensive element, was offset by using ground level for mechanical, electrical, plumbing and logistics. High-capacity monopiles reduced concrete requirements, and topology optimisation reduced steel tonnage by 20%. S460 steel and plate girders further enhanced material efficiency.

A whole lifecycle carbon assessment was conducted in line with RICS methodology, with the final figure at post-completion stage showing a 25% reduction from initial estimates. The predicted Energy Use Intensity (EUI) was 69.1 kWh/m<sup>2</sup> (Landlord). Water conservation strategies included low-flow fixtures and rainwater harvesting, saving nearly 400,000 litres annually. A biodiversity area and blue roof enhanced ecological value.

The project achieved BREEAM 'Outstanding', LEED Gold, and WELL Enabled certifications. It was a pilot for the Design for Performance Initiative, contributing to the launch of NABERS UK. The new green Highwalk connects to the Barbican, catalysing regeneration and improving pedestrian access.

Collaboration was central to the project's success. Architects, engineers, contractors, and suppliers worked together over several years, sharing parametric and 3D models. Specialist suppliers were engaged early under Pre-Construction Services Agreements, securing 75% of contract costs before main contractor tender.

21 Moorfields is a landmark achievement in urban engineering and design. It demonstrates how steel can unlock complex sites, deliver architectural ambition, and support sustainable development. Floating above a live station, it is a bold and elegant addition to London's skyline and a model for future infrastructure-integrated buildings.



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## “ Judges' comment

**A project of global significance with an immensely challenging site above the operational rail interchange and new station box. Only 16 pile locations were available to found the ten-storey development supported on a bridging structure which spans the entire width of the station. The elegant solution underplays the complexity involved in the design and sets a new benchmark.**