

The western extension creates a feature backdrop to the park at Exchange Square.

FACT FILE

One Exchange Square, London

Main client: LaSalle Investment Management

Development Manager: M3 Consulting

Architect: Fletcher Priest Architects

Main contractor: Multiplex

Structural engineer: Heyne Tillett Steel

Steelwork contractor: Bourne Steel

Steel tonnage: 1,300t

Retain and remodel

Keeping 90% of the original structure, new steelwork is aiding the redevelopment of One Exchange Square into a premium 13-storey commercial building.

Throughout the UK, city centre refurbishment schemes that involve the retention, [reuse](#) and extension of existing structures are on the rise, as the construction industry plays its part in meeting the Government's net zero target.

Planning departments, wary of schemes involving large-scale demolition programmes because of the associated embodied carbon, view refurbishment as an environmentally-friendly alternative.

Where developers are looking to add valuable extra floor space to existing [office buildings](#), steel-framed structures have proven to be ideal.

Moreover, [steel-framed floors](#) can often be added with minimal strengthening of the structure's original foundations and superstructure, creating a cost-effective [construction](#) solution.

This is the case at One Exchange Square in the City of London, where the 1980s-built steel-framed office building is being revamped into a modern 13-storey development.

Designed by Fletcher Priest Architects and being delivered by Multiplex, the completed building will comprise 39,948m² of premium workspace and 1,579m² of ground floor retail, fronting both

Bishopsgate and the newly re-landscaped park at Exchange Square.

Gary Moore, Head of International Accounts, Europe, at LaSalle Investment Management says: "Once completed, One Exchange Square will be a truly landmark office development in London. It will boast top-notch environmental performance ratings in a conveniently central location, and is poised to be highly sought after for years to come. We are integrating state-of-the-art design and sustainability features to cater to the needs of its future tenants."

As sustainability is high on the design agenda, the project is targeting a [BREEAM](#) 'Outstanding' rating, NABERS 5* and WELL Platinum certification. Additionally, by retaining 90% of the existing structure, the building will have 50% less embodied carbon than a typical new build office of comparable size, saving approximately 7,600 tonnes of CO₂e compared to the [GLA 2030 target](#).

"At One Exchange Square, we are committed to exploring [circular economy](#) strategies to uncover and create new opportunities," says Fletcher Priest Architects' Senior Project Architect Luca Tesio.

"Retaining and reusing structural components is a crucial step toward sustainability, reducing

embodied carbon while preserving structural integrity."

Much of the 10% of the structure that was not retained was on the roof. Following a demolition programme, some existing plant levels were demolished, making way for four new steel-framed floors to be added to the building.

The uppermost parts of the building are stepped, creating terraces, with the middle portion topping out at the 13th floor and other areas extending up to the 12th and 11th floor levels.

Following the same 6m × 13.5m [column grid](#) as the retained structure, the new floors are compositely formed with steelwork supporting metal decking and concrete topping.

Overall, Bourne Steel is erecting 1,300t of new steelwork for the project, approximately 19t of which is reused material sourced from other donor projects. Around 85% of the remaining steelwork has been sourced from [electric arc furnace](#) (EAF) production facilities, as this method is considered to be much greener and more efficient in terms of energy consumption than the more traditional [Basic Oxygen Steelmaking](#) (BOS).

However, before any additions to the retained structure could begin, the existing foundations and [steel frame](#) had to be surveyed. This determined that the piled foundations had sufficient capacity for the proposed scheme, but some areas of the existing steel frame needed to be strengthened with [steel plates](#).

"Overall, we have more than 1,000 new steel-to-existing-steelwork connections," says Bourne Steel Project Director Kevin Springett. "Most are bolted, but we also had to make some welded connections due to their locations and the positions of existing bolts and stiffeners."

Looking at the building from street level, the standout steelwork addition to the project is along the western elevation, overlooking Exchange Square. Here, a 7.5m-deep × 42m-long extension, which starts at second floor and extends up to floor 12, has been added to the structure.

However, due to the proximity of Liverpool Street Station and the building's ground floor slab being a transfer structure spanning over railway lines, no new columns could be installed in this area to support the extension.

The solution has both structural and architectural merit, as the new steelwork is hung from a four-storey triangular exoskeleton that transfers the additional loads back into the existing frame.

A series of large beams, positioned at the underside of sixth floor, connect the triangular system to the existing core.

The lower part of the exoskeleton is supported by two raking [columns](#) that connect back to the retained structure at the underside of level four,

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Two raking columns support the underside of the western extension.

while further restraint beams connect into the second-floor.

Within the extension, the floors are supported by a series of lattice [trusses](#), mimicking the design of the retained structure.

All of the new steelwork will be left exposed in the completed project. While the exoskeleton, which sits outside of the [cladding](#) line, will form an architectural feature of the building.

The exoskeleton, which was installed in sections weighing up to 9t each, had to be temporarily propped during the [erection](#) sequence.

Once the sixth-floor steelwork for the extension was completed, the props were removed, as the exoskeleton was sufficiently supported in its permanent state.

Elsewhere on the project, a sizeable amount of

new steelwork has been installed at ground and first floor levels. [Atria](#) have been partially infilled throughout the building, while existing mezzanines have been enlarged.

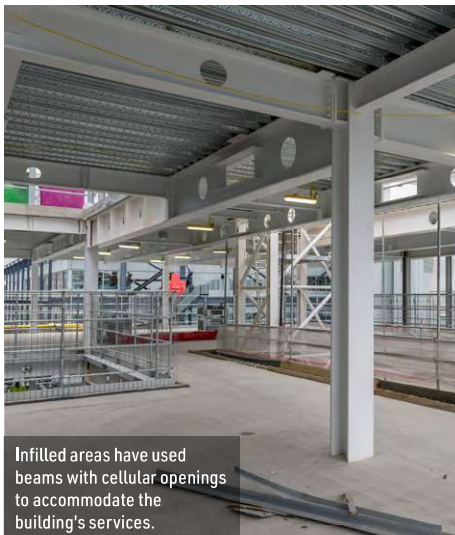
Summing up, Mr Tesio, adds: "The steelwork plays a fundamental role in the project's success, unlocking the full potential of the existing asset and giving a second life to the retained frame. A 'sartorial stitching' between the old and new steel frames has created the extension along the western elevation, where the exoskeleton showcases its striking cantilever supporting 12 floors. More than just a striking visual statement, the exoskeleton sets the benchmark for next-generation sustainable workspaces."

One Exchange Square is due for completion in early 2026. ■



The project's new steelwork additions are highlighted in blue.

The new composite floors are supported by lattice trusses.



Infilled areas have used beams with cellular openings to accommodate the building's services.

The western elevation is supported by raking columns and beams that connect back to the existing core.

