

## Holbein Gardens, London

### PROJECT TEAM

Architect: **Barr Gazetas**

Structural Engineer: **Heyne Tillett Steel**

Steelwork Contractor: **Cleveland Steel and Tubes Ltd**

Client: **Grosvenor**

### Judges' comment

Sustainability and circular economy were key drivers in this two-storey extension. To avoid strengthening the existing structure, a lightweight steel frame with CLT floors was used. The incorporation of re-used steel demonstrates how old sections and timber can be exposed and still work effectively together, creating a harmonious blend of materials.



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Holbein Gardens is a retained and extended 1980s commercial building in Belgravia, London. The finished building is a modern, sustainable workplace with increased floor area, achieved by adding a two-storey upward extension, along with a new roof terrace over the existing four-storey building, as well as a basement level.

The project champions circularity and prioritises retention over demolition, through reuse, recycling, innovative practices such as material passports, and efficient procurement and waste management.

An impressive 93% of the existing structure was retained, facilitated by extensive investigation and justification of the existing frame. This enabled an efficient structural design, with most of the new mass being added requiring minimal strengthening. Alterations to the existing frame were minimised, with only one column being transferred at the reception space, and load transfers back to the original load paths in the basement, avoiding the need for foundation strengthening.

The building avoided the need for significant changes in loading on the surrounding infrastructure, including the Thames Water sewer running under the site, Sloane Square Station and neighbouring properties.

Designing with reclaimed steel and the sourcing of the specified material has demonstrated that reuse steel in projects can be achieved within a standard procurement route.

Nine tonnes of steel came from the client's other sites and the remaining 16 tonnes of reclaimed steel stock were from the supplier. The steel had to be inspected to confirm surface conditions and existing coatings had to be removed. The sections were then re-dimensioned and tested to establish its quality, strength and grade. When completed, the steel was returned to site and installed as new where required.

The exposed structure, including the existing concrete elements, cross-laminated timber (CLT) floors and walls for the upward extension, has demonstrated how the structure can be part of the detail to create an elegant finish.

The framed nature of the building allows for future flexibility, whilst maintaining the existing structural grid, with this increased on the upper floor where transfers could be more easily accommodated.

The project is a pioneer for the direct reuse of structural steel in London, incorporating 25 tonnes of reclaimed steel. It is also one of the first commercial developments to go through the journey of including reclaimed steel in the country. The project provides approximately 2,460m<sup>2</sup> of 100% net zero and sustainable workspace to the local area.

The project achieves an embodied carbon figure of 300kg CO<sub>2</sub>/m<sup>2</sup>, surpassing LETi targets of 500kg CO<sub>2</sub>/m<sup>2</sup>, in addition to accreditations including BREEAM 'Outstanding', WELL 'Gold' and NABERS '5 Star'.