



**Client** Lodha Developers  
**Type** Demolition, Sub & Superstructure  
**Location** Westminster, London

**Sector** Residential  
**Procurement** JCT D&B  
**Value** £20M

## 1-3 Grosvenor Square



1-3 Grosvenor Square is located in the Mayfair area of London and occupies a prominent position opposite the former American Embassy and next to the Italian Embassy.

The site is located in the borough of Westminster on the corner of 1-3 Grosvenor Square and 38-41 Grosvenor Street London W1. The existing structure is seven storeys tall with a basement below ground level.

### Brief

As part of the deconstruction of 1-3 Grosvenor Square it was a requirement to restrain the adjoining structures of 4 Grosvenor Square, 14 Three Kings Yard and 35-36 Grosvenor Street during the demolition phase.

The party walls were exposed and needed to be temporarily supported during demolition. Whilst the adjacent buildings are theoretically independent of the No 1-3 Grosvenor Square structure they could, with time and normal building movements, have derived some lateral support from the building to be demolished. Appropriate precautionary measure to employ temporary lateral restraint systems was undertaken.

Prior to the demolition phase we separated the structure from top to bottom including ground and basement slabs to minimize vibration transfer into the neighbouring properties. Following the isolation works a section of 1-3 GSQ

structure which abuted the party walls to 4 GSQ and 14 Three Kings Yard remained during the demolition phase down to ground floor. The remaining bay acted as a buttress support during demolition works to ground floor level. The remaining buttress structure was stiffened using a combination of columns and racking steel sections welded to the existing structure prior to demolition works. Once the demolition had progressed to ground floor level the buttress was replaced with a steel supported structure founded on piles at basement level. This allowed for the careful surgical demolition of the remaining bays structures against the Italian Embassy.



### Stage 1 – Retained bay structure; Stage 2 – Steel support towers – Stage 3 – Demolition of retained bays

The whole demolition operation was serviced by the tower crane. Initially the plant rooms were removed, then the roof slab. These initial areas were demolished with 5te excavators equipped with muncher and hydraulic breakers.

Demolition works commenced once all specified floors were propped as per the temporary works design. The plant rooms and main roof were stripped and removed from site. This created working room for the demolition of the remaining structure. The machines then continued on a floor by floor basis across the full footprint of the site, when a new slab was exposed a machine size hole was broken out and the excavator lowered onto the floor below. This then allowed that floor to be demolished using a hydraulic processor rather than a breaker.



In order to minimise transfer of vibration and as a Health and safety consideration our preferred methodology for mechanical demolishing the floors was from below. It is historically known from vibration monitoring data that the use of a processor attachment can substantially reduce noise and vibration compared with a traditional breaker attachment. Structural walls were demolished onto the existing floors whilst ensuring that the existing structure was not overloaded.

Once the debris had been cleared an opening in the slab was created again and the excavator lowered onto the floor below to demolish the slab using the hydraulic processor. One complete floor plate of structure was removed at a time, before moving to the next. However there were occasions when the floor removal was staged to aid demolition and progress demolition works ahead of the facade stone removal.

### Heritage Works

- Salvaging and storing of the facades to Grosvenor Square and Grosvenor Street (for future restoration).
- Careful dismantling, storing and re-building of a chimney serving no. 4 Grosvenor Square which is a Grade II listed building.

Following on from the demolition works, McGee Group successfully carried out basement and superstructure RC frame works.