



Case Study



Property Owner

Gosvenor



Main Contractor

Multiplex



Structural Engineer

Arup



Architect

PLP Architects



Acoustic Consultant

Arup

OVERVIEW

65 Davies Street is a commercial building in London's Mayfair district, offering 67,568 sq ft of office space divided over six floors. The development is located over Bond Street West station which will be on the new crossrail line, connecting Canary Wharf in the east to Heathrow Airport in the west.

The site is an urban block bounded by streets with retail outlets, historic buildings, offices, and embassies.

Stravibase VHS, Stravibase SEB

- Isolate buildings from vibration and structure-borne noise caused by trains or trams running nearby or underneath buildings (Stravibase VHS)
- A bespoke structural elastomeric bearing for the structural isolation of buildings and other structures (Stravibase SEB)

Stravibase Fix

- A general elastic isolation fixation principle which guarantees total vibration decoupling from a non-isolated structure (suspended) to another isolated structure (supporting) which it is connected to in order to provide stability (Stravibase Fix)



SOLUTION

Because the project integrates the new office building with the infrastructure of the Crossrail Station below, this development was particularly challenging in terms of acoustics and vibration isolation.

To prevent groundborne noise and vibration disturbance within the office spaces, **Stravibase VHS** structural bearings designed with four layers of natural rubber, steel plates, and integrated failsafe mechanism were installed. Lateral bearings and floating slab bearings complement the design and help shield the building from rail induced vibrations.

AT A GLANCE

CHALLENGES

- Located over Bond Street West station
- The specification called for the building to be isolated on 12Hz bearings
- Need for stabilizing bearings and lateral buffer isolation

BENEFITS

- Custom made isolation system optimized to the technical specifications
- Made of alternate layers of high-resilience elastomeric pads and steel plates
- Stravibase VHS bearing include an integrated failsafe

79,490 kN

Total Acoustic
Design Load
(vertical bearings)

1,576 kN

Total Unfactored
Design Load
(horizontal bearings)

