101 Moorgate
London, UK

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Making your world a quieter place

Case Study

Property Owner
Aviva

Main Contractor
Mace

Acoustic Consultant
Watermans

Structural Engineer
Watermans

Structural Steel Suplier
BHC

OVERVIEW

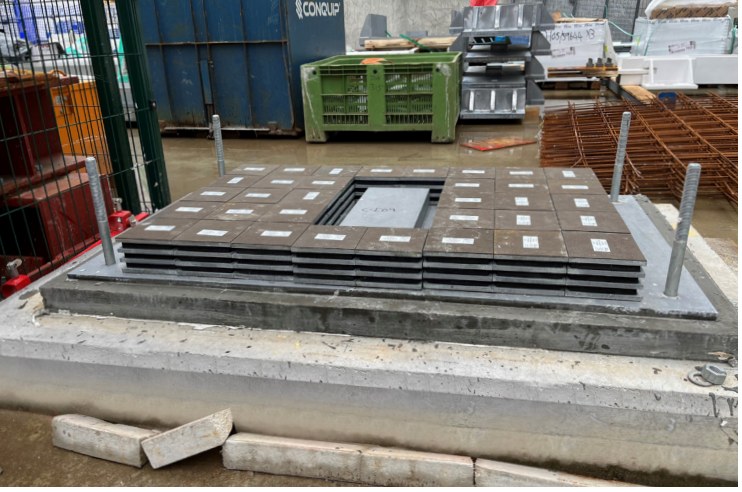
The new 101 Moorgate building in London is an exciting 10-storey over-station development that will sit above Moorgate station's Hammersmith & City line, at the heart of the new Elizabeth Line complex. This state-of-the-art structure is set to become a prominent landmark in the heart of the city's financial district. 101 Moorgate aims to provide an exceptional work environment for its occupants. The building will offer high-quality office spaces, boasting cutting-edge technology. Additionally, it will feature a range of amenities, including retail spaces, restaurants, and communal areas, creating a vibrant and dynamic atmosphere. Situated in a prime location, 101 Moorgate will offer excellent connectivity and accessibility to transport links and nearby amenities.

Stravibase VHS

- Isolate building structures from vibration and noise generated by external or internal sources
- Designed to support very large loads whilst being significantly smaller in plan dimensions than traditional elastomer bearings

Stravibase Fix

- Mass-Spring-Mass system
- A bespoke system which can be designed to accommodate any size or acoustic load and is compatible with any type of construction



AT A GLANCE

CHALLENGES

- We accounted for the load at each bearing group during the different construction/erection phases of the building as well as during its lifetime
- Lateral isolation was welded to the bottom plates
- 12Hz isolation frequency

BENEFITS

- Long-lasting and maintenance free solutions
- Concrete to steel decoupling
- Use of the Stravibase VHS bearings allowed for a small footprint for the bearing assemblies without the need to increase the size of the structural steel column plates

109,549 kN
Acoustic Design Load

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SOLUTION

This project involved the installation of a comprehensive range of structural noise and vibration isolation solutions.

To ensure optimal performance, we implemented 32 elastomeric bearing assemblies above the level 01 plinths and T.O.S, as well as 6 elastomeric bearing assemblies at pile cap level. These bearings, specifically the Stravibase VHS (3 layers) type, were equipped with failsafes and steel top and bottom plates, providing enhanced stability and safety. With a natural frequency of 12Hz across the load range, these bearings effectively mitigate noise and vibration disturbances.

Additionally, we supplied Stravibase Fix isolation and stabilizer bearings for the façade and staircase. This structural elastic fixation is designed to isolate substructures from superstructures while resisting uplift forces. The implementation of Stravibase Fix further enhances the overall structural integrity and acoustically decouples the facade and staircases from the rest of the building, ensuring a comfortable and stable environment.

Our comprehensive approach to noise and vibration isolation solutions ensures that the 101 Moorgate building maintains a high standard of comfort and functionality for its occupants.