Dalston Junction S5 & S6
London, UK

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Making your world a quieter place

Property Owner
Barratt Homes

Main Contractor
Barratt Homes

Structural Engineer
AKT

Architect
Goddard Manton

Acoustic Consultant
Rupert Taylor

OVERVIEW

The Dalston Square development includes several residential blocks. Along one side of the square the buildings are supported off the roof of the tunnel over Dalston Junction railway station.

Stravibase SpringBox, Stravibase SEB

- Pre-compressed spring bearings for structural isolation of buildings and structures (Stravibase SpringBox)
- Series of elastomer pads laminated to formwork (Stravibase SEB)

SOLUTION

Buildings S5&S6 are located directly over a turnout in the railway which generates vibration levels that required the buildings to be isolated on 3.5Hz spring isolation bearings.

The part of the building over the tunnel is supported on 3.5Hz Stravibase SpringBox bearings with the remainder of the building supported off Stravibase SEB bearings.

To achieve a 3.5Hz performance with a spring solution a 20mm deflection is required. For an elastomer solution static and dynamic tests were carried out to verify the natural frequency to the acoustic consultants satisfaction.

The Stravibase SpringBox spring bearings are pre-compressed in the CDM Stravitec factory in Belgium using a calibrated press to ensure that the pre-compression deflection matches the force applied. This ensures that the springs supplied are designed to meet the loads given by the structural engineer and give the required deflection.

The design of the Stravibase SpringBox pre-compressed spring boxes was slightly adapted to Dalston Square to incorporate a disproportionate collapse detail that ensures that the building will be stable even in the event of one of the columns being removed.

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