

Holliday Wharf



Structural Isolation – Retained Facade CDM-ISO-CHR-BOX, Pre-compressed Springs



Client Charles Church
Main Contractor Wates Construction
Architect Turner Woolford Sharp
Structural Engineer Arup Structures
Acoustic Consultant Arup Acoustics
Weight 7MN



Artists impression of finished building with retained façade to the left of the picture

Holliday Wharf is a £17 million contract for a mixed use development in the heart of Birmingham City Centre.

Part of the planning conditions included retaining the Grade II listed façade of the Wharf building which in turn is located directly above the proposed route of a tunnel. Due to concerns about structural damage to the retained façade during construction of the tunnel, it was a requirement to support the façade off pre-compressed spring boxes.

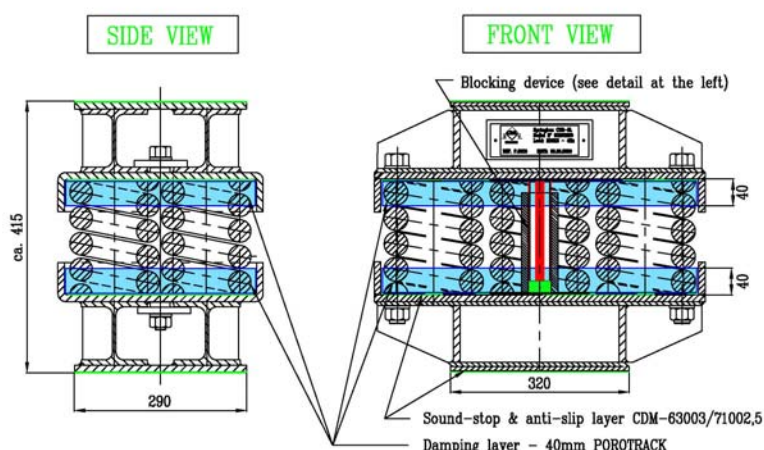
Initially the retained façade was temporarily supported. A concrete beam was then built which was supported by column stubs. The facade was then jacked by a couple of millimetres and then lowered back onto the spring boxes.

When the façade was dropped onto the springs there was a differential deflection of 1mm and the pre-compression bolts were loose.

There were 30 spring boxes in total, comprising B3 and B6 boxes, with springs and nested springs chosen to take the individual loads at each point.

The springs had a cylinder device in the centre of the spring-box which restricted the differential lateral movement of the isolated structure to 2mm without compromising the natural frequency of the system

The springs also had >5% resonance damping which was created by 40mm Porotrack layers at the top and bottom of each box.



CASE STUDY – CDM-ISO-STRUCTURE

CDM-UK
 PO Box 7035
 Melton Mowbray
 Leics LE13 1WG



T: + 44 (0) 1664 482486
 F: +44 (0) 1664 482487
 E: info@cdm-uk.co.uk
 www.cdm-uk.co.uk