

# Holliday Wharf

## Birmingham, UK

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## Case Study



### Property Owner

Charles Church



### Main Contractor

Charles Church



### Structural Engineer

Ove Arup



### Architect

Turner Woolford Sharp



### Acoustic Consultant

Arup Acoustics

## OVERVIEW

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.

## Stravibase SpringBox

- Pre-compressed spring bearings for structural isolation of buildings and structures
- Limits deflection of the building during construction



## SOLUTION

Initially the retained façade was temporarily supported. A concrete beam was then built which was supported by column stubs. The façade 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 [Stravibase SpringBox](#) bearings 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 poured elastomer layers at the top and bottom of each box.

**7 MN**  
Acoustic  
Design Load

