

# Case Study - Bearings & Bridge Jacking

## WESTERN BANK UNDERPASS BRIDGE - BEARING INSTALLATION & BRIDGE REFURBISHMENT



### Job Brief

**Scope:** Design, manufacture, installation of pot bearings and jacking equipment. Bridge jacking and refurbishment works. Waterproofing, drainage works and expansion joint replacement.

### Project Team

**Client:** Sheffield City Council/Amey  
**Main Contractor:** Henry Boot Construction  
**Sub Contractor:** Ekspan

### Background Information

The Western Bank Underpass bridge, which intersects the University of Sheffield campus, is located on a major Sheffield city centre road. The bridge's underpass is the university's busy pedestrian forecourt connecting students and staff between the campus buildings. The bridge also carries traffic travelling into the city centre, to Brook Hill on the A57 onto University Square roundabout.

As part of Amey's 'Streets Ahead' highways improvement scheme, for Sheffield City Council, Western Bank Underpass bridge had been scheduled for vital structural repair work (mainly below the bridge) to maintain its integrity and ensure the it's safe for public use. The bridge bearings and expansion joints had to be replaced as they well beyond their service life; leaking drainage within the structure needed replacing.

### Ekspan's Workscope

Ekspan were contracted by Henry Boot Construction (who work with Amey on the 'Streets Ahead' scheme) to carry out all works on the Western Bank Underpass bridge.

Site works on the bridge's north and south abutments included; site set-up and marking up for hydro demolition works; breaking out the concrete bearing shelf; installation of jacking equipment and bridge jacking; bearing removal and installation of 8 no pot bearings; replacement of waterproofing on the bridge deck; removal and replacement of expansion joints; concrete repairs to the bridge abutments, deck ends, parapet units, deck cantilevers and retaining walls.

Ekspan were successful completing all works on this comprehensive project to meet the set timescales and to budget, whilst ensuring any disruption or inconvenience to the university or the public were kept to a minimum throughout the whole works process. The bridge was always kept open with a contraflow on Western Bank installed on the bridge deck.



Water proofing applied to the bridge deck



Temporary jacks, hydro demolition and bearing installation



New installed pot bearing