

RIVERSIDE VIADUCT - A5189 ST. PETER'S BRIDGE BEARING REPLACEMENT



Project Brief

Bridge jacking and temporary works design and installation.

Design, manufacture, and installation of 19 no. stainless steel free, guide and fixed spherical bearings.

Project Team

Client: Staffordshire County Council
Main Contractor: CLM (Curral Lewis & Martin Construction Ltd)
Sub Contractor: USL Ekspan

Background Information

Riverside Viaduct (consisting of 8 piers between the abutments) is one of the five structures that forms part of the St. Peter's Bridge. The Viaduct crosses over the River Trent and lies east of Pumphouse Viaduct (another of the five structures). St. Peter's Bridge carries the A5189 over a flood plain and the River Trent to the south east of Burton Upon Trent town centre.

The bearings on Riverside Viaduct and St Peter's Bridge articulate on a combination of fixed, free and longitudinal guided spherical bearings. Several of the structure's original bearings, with severe corrosion and excessive condensation were recorded as being irreparable. Some of the bearing stainless steel sliding surfaces had delaminated causing distortion; rotation and in some positions, over-rotation had given way to bearing displacement, in addition to rotation of PTFE wear. These findings collectively hindered and inhibited correct bearing functionality essential for the damp environment they were designed to operate in.

USL Ekspan's Workslope

As part of the £6.1 million scheme investment secured for the essential strengthening and refurbishment works on St Peter's Bridge, CLM (Curral Lewis & Martin Construction) contracted USL Ekspan to replace the bearings on Riverside Viaduct.

USL Ekspan designed (to EN1337 standards), manufactured and installed 19 no. stainless steel spherical bearings. The programme of works for this installation was completed in two phases with careful planning of temporary works, bridge jacking and bearing removal sequencing with Mabey Hire to constrain and monitor the structure. Works on this project included: design and installation of temporary works and bridge jacking; hydro demolition of the top piers and abutments; removal of old spherical bearings; installation of new bearings; recasting of concrete; shuttering and grouting of new bearing beds and final de-jacking of the bridge.

The project's location had been exposed to unpredicted snow and periods of flooding, despite this USL Ekspan successfully completed the bearing installation ahead of schedule.



Super props temporarily support the bridge deck during bearing installation



Hydraulic jacks mounted on the bearing shelf prior to bearing installation



New installed stainless steel spherical bearing

Head Office

Kingston House, 3 Walton Road, Pattinson North, Washington, Tyne & Wear, NE38 8QA, UK
t: +44 (0) 191 416 1530 e: info@uslekspan.com www.uslekspan.com