Repairs

Bearing Replacement and Concrete Repairs

A1260 Pier Refurbishment, Peterborough

FREYSSINET
SUSTAINABLE TECHNOLOGY

Client
Peterborough City Council

Principle Contractor
Osborne Ltd

Consultants
Atkins

Value
£700,000

Contract Duration
26 weeks

Works Completed
March 2011

The A1260 is a dual carriageway that serves the city of Peterborough in eastern England. The road, also known as the "Nene Parkway", serves as major trunk road from the southern end to the Northern end of Peterborough circumventing the city centre.

Freyssinet Ltd were selected by Osborne Ltd to carry out refurbishment works to a total of 7 bridge structures. This involved the complete replacement of 12no pier crossheads on each of 4 bridges at two interchanges on the A1260 trunk road, and also associated concrete repair works. Concrete repairs were also carried out on 3 other nearby structures concurrent to the main works.

The purpose of the works was to reconstruct the concrete bridge piers and replace the bearings in order to both prolong the life of the bridge structures and enable them to continue to cope with increasing levels of traffic. The works were considered essential by Peterborough City Council; if the bridges had deteriorated further the stability and integrity of the structure could have been compromised.

Each bridge was a 4 span simply supported structure, with the deck being constructed from 28 inverted 'T' beams, supported at each end on 28 elastomeric pads. The elastomeric pads were due for routine replacement and Peterborough City Council decided to re-design the pier crosshead and change the support arrangement at each span end from 28no elastomeric pads to 12no elastomeric pads and 1no mechanical shear key.

This re-design would enable any future jacking of the deck to be carried out from the pier top removing the need for extensive steel temporary works.

During the works extensive traffic management was put in place. Concrete repairs were carried out by Freyssinet Ltd to strengthen the piers at locations identified as sub-standard.

Bespoke steel trestles were then erected on either side of the pier to be strengthened. The trestles incorporated 8no 250Te pot jacks with mechanical bearings on top of them to enable the deck to move and rotate during the works. The top 1.5m of the pier was then removed using hydro-demolition and re-cast to the new design.

New elastomeric pads were installed on the newly formed plinths. Once the new concrete pier head had achieved the required strength, the deck was de-jacked onto its new supports and the temporary works were relocated to the next pier so that the process could be repeated.

The works were completed to a very tight schedule and on budget, to the satisfaction of Osborne Ltd and Peterborough City Council.

Freyssinet Ltd. Innovation House, Euston Way, Town Centre, Telford, Shropshire, TF3 4LT
Phone +44 (0) 1952 201901 Fax +44 (0) 1952 201753 Email info@freyssinet.co.uk