

## Bearing Replacement A316 Country Way Viaduct



**FREYSSINET**  
SUSTAINABLE TECHNOLOGY

**Client**  
Transport for London  
**Principal Contractor**  
Carillion  
**Specialist Contractor**  
Freyssinet Ltd  
**Contract Value**  
£1.9 million  
**Contract Duration**  
45 weeks  
**Work Completed**  
Feb 2009

The A136 Country Way Viaduct in Richmond, West London is a 768M long structure built in 1975. The structure which takes the A316 over the Feltham Interchange is a post tensioned concrete box deck supported at two abutments and at twenty two piers with on and off slips at approximately mid-point of the structure. The structure is fixed at its mid point, Pier 12.

During routine inspections, it was identified that the existing 124no bearings were corroded and showing signs of distress. It was also thought that the existing articulation of the deck prevented it from moving freely and significant 'locked in' forces were present.

Freyssinet were approached by Principal Contractor, Carillion PLC and asked to submit a technical solution for the replacement of all 124no bearings whilst causing minimum disruption to the traffic above and below the viaduct. The sequence of the replacement works was also to 'free' the deck and release any locked in forces.

Freyssinet were awarded the contract based on the innovation and suitability of their proposed method of working. Working alongside RMD Kwikform Engineers, Freyssinet designers engineered a temporary propping system capable of withstanding loads in excess of 8724kN and which also lent itself to a rapid cycle time to minimise programme duration.

4no 250Te hydraulic jacks sat atop of the temporary props and an 800Te temporary bearing completed the system allowing the deck to rotate and move under thermal expansion whilst in its temporary propped condition.

In excess of 20 types of sliding mechanical bearings capable of withstanding loads up to 800Te were designed in-house and manufactured by Freyssinet for installation during the works.

As the existing bearings weighed up to 2.5Te, a bespoke lifting table was designed and manufactured by Freyssinet to enable safe removal / installation of the bearings.

The scope of works for the project included the following activities, temporary works design and supply, design, manufacture and installation of new mechanical bearings, hydraulic jacking, high pressure water jetting, grit blasting and concrete repairs.

All works were carried out to the satisfaction of the client and all parties involved, on programme and within budget.



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