

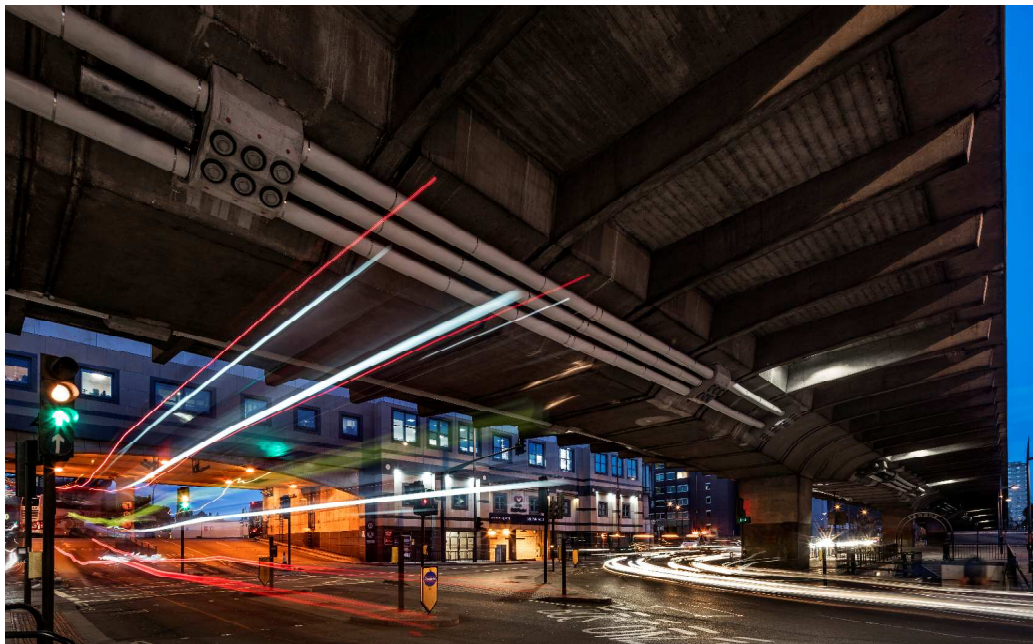


Hammersmith Flyover – Strengthening of a Prestressed Segmental Bridge

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Phase 2 Strengthening Hammersmith Flyover – Short Tendons

Abstract

Hammersmith Flyover is an early precast segmental bridge. The original prestress was found to be deteriorating seriously in early 2012 requiring emergency strengthening to critical sections later that year. The bridge owner, Transport for London (TfL), decided in anticipation of further deterioration that new prestress should be installed to make the structure independent of the original and allow for the possibility of it eventually becoming completely ineffective. The project is believed to be unique in fully replacing the prestress in a bridge where it was not possible to remove the original. The design, approach and challenges are described. The project made use of innovative materials such as Ultra High Performance Fibre Reinforced Concrete (UHPFRC). Major project constraints included the form of the bridge which left little space for the new prestress and the requirement to keep the bridge open to traffic and minimise disruption to traffic below.

Keywords: Post-tensioning; strengthening; Ultra High Performance Fibre Reinforced Concrete; anchors; corrosion protection.