

Project Profile - Civil Engineering & Infrastructure



PROJECT

**Centenary Way Viaduct, Burnley,
Lancashire**

SUMMARY

£1.65 million viaduct refurbishment
involving concrete repairs

PRODUCTS

**Monopour PC6, Fastfill, Monomix
HD**

CLIENT

Lancashire County Council

MAIN CONTRACTOR

A E Yates Ltd

SUB-CONTRACTOR

JDF Restoration Ltd

BACKGROUND ▶

The Centenary Way viaduct is a critical part of Burnley's road network, supporting movement in and out of Burnley. The seven-span continuous viaduct is 193 metres in length and carries the A682 which provides the most direct route from the M65 motorway to a number of key sites in the town centre. The structure was constructed in the 1960's, to celebrate the 100th anniversary of Burnley's borough status.

Bridge inspections identified numerous defects, in particular that the sliding bearings supporting the bridge superstructure on the intermediate piers had seized up. Lancashire County Council subsequently imposed a bridge monitoring status in accordance to the DfT guide BD 79/06 - Management of Sub-Standard Highway Structures. The viaduct was assessed as having a capacity of zero tonnes and consequently a restriction on abnormal loads vehicles using the viaduct was implemented. If the maintenance scheme wasn't undertaken, the bridge would have deteriorated further and the required repair work would have become more severe. A £1.65 million refurbishment scheme was carried out, including concrete repairs, work to the bearings and joints, parapet repainting, deck waterproofing, carriageway and footway resurfacing, to enable the viaduct to be reopened to abnormal loads vehicles.

THE SOLUTION ▶

The major problem that needed to be rectified was the defective bridge bearings and **Monopour PC6** micro-concrete was specified to fill the voids. **Monopour PC6** is a high performance, polymer modified cementitious formulation which is specially designed for heavy duty applications and for large areas of concrete repair, with the ability to be pumped, poured or trowelled. Fully compliant with Highways Agency Standard BD 27/86 for the repair of Highway Structures, it is supplied as a single component system and is simply mixed with clean water to achieve a rapid hardening, high strength, non-shrink material.

As a result of chloride ion ingress from de-icing salts, the concrete on various elements of the viaduct was spalling away, leaving exposed corroded steel reinforcement. **Fastfill**, a rapid setting repair mortar, was used for repairs to the deck of the viaduct and to fill in any holes. Ideal for rapid reinstatement of heavily trafficked areas which cannot be taken out of service for long periods, **Fastfill** allows foot traffic within just 45 minutes of application and vehicular traffic within 2 hours. It cures normally even at temperatures as low as -10°C. which was an important factor, as this project was carried out in the winter months. Applied at 5mm - 300mm when bulked out with aggregate, just 7.5mm of **Fastfill** is equivalent to 1000mm of typical concrete.

Monomix HD, a high strength, waterproof repair mortar, was specified for repairs to the underside of the deck. With outstanding abrasion resistance, it is easily trowellable, has excellent low sag properties and can be applied up to thicknesses of 80mm in a single application. The high bond strength of **Monomix HD** exceeds the tensile strength of concrete and its dense matrix offers low permeability to water, even at 10 bar pressure, and very high diffusion resistance to acid gases and chloride ions. The rapid and easy application of Flexcrete materials was important for this project, so as to cause minimal disruption to the road network.



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