

M4 Winnersh Interchange



The distinctive bridge design is repeated in a number of structures along the M4

Major Interchange Refurbishment

The Winnersh Interchange is at Junction 10 of the M4 where the A329(M) connects just to the East of Reading. The project involved refurbishment and strengthening works to two of the 3 span reinforced concrete post tensioned bridges that carry the slip roads, known as numbers 7 & 8, over the M4.

The bridges had been the subjects of a full assessment that had revealed a number of deficiencies in respect of the current design assessment requirements. In particular the run on slab bearing shelves at the half joints failed the assessment and were to be strengthened. One abutment bearing shelf was extensively repaired and the 18 bearings replaced.

An innovative temporary support system was installed to support the run on slab and maintain the traffic flow on the carriageway above throughout the works. In addition there were extensive repairs to one of the run on slabs during replacement work.

Remedial Duct Grouting

The special inspection of the post tensioned bridges had revealed some voids in the grouting within their bonded tendons, a

Client

The Highways Agency

Consultant

Parsons Brinckerhoff

Principal Contractor

Balvac

Value

£505,000

Programme 18 weeks completed August 2000

condition that may allow corrosion of the tendons and the resultant loss of pre-stress should the tendon wires corrode through.



Coloured grout shows the filled void

The location of the voids was further evaluated in the contract and a trial grouting of four simulated tendon arrangements was carried out to prove the methodology. Vacuum assisted grout injection was carried out using colour-tinted grout so that the efficacy of the treatment could be evaluated.

Successful grouting of the trial arrangement was then translated into grouting of the tendons in the structures and invasive inspection confirmed a successful treatment.