

Kennet Bridge - Reading



River Kennet Bridge is located on the main rail line from Paddington to Reading. In 1987 it became clear that the bridge required stabilisation of the north side wing wall and to the adjoining spandrel wall, secondary work was also required for stitching and filling of cracks in the brickwork. Under the control of the regional engineering projects manager, Mr W G Grant of the Civil Engineering department - British Railways Board, Western Region, engineering analysis was carried out and a proposal put forward which involved tying the north side wing wall to an original buried wing wall with anchors 9.5m long. The spandrel wall would be anchored to the corresponding buried spandrel wall.

Two test anchors were installed made out of 25mm diameter high tensile reinforcing bars with separate grout feed pipes for the both the rear and front lengths of the anchor. These were installed into 76mm diameter drilled holes with the intention of testing both the anchors capability and to ascertain the load capability of the buried wing wall. A rotary drag bit with percussive rotary drilling produced the holes through the saturated fill material. A typical section through the wing walls and fill material is shown in Fig 1. The anchors were installed manually without difficulty and the rear 5m was grout injected. The required test loads of 10 tonnes were achieved and satisfactorily monitored for 24 hours. Loading and reloading the anchors at lower loads had shown essentially elastic behaviour.

The successful tenderer for the remedial works adopted the Cintec Anchor System in preference to a resin alternative. The anchors used were high tensile 25mm diameter, 10m long bars, surrounded in a mesh fabric sleeve and grout injected following installation. The anchors within the ring wall were required to penetrate the buried wing wall so that grout plug was formed at the back of the wall. The remedial stitching anchors were 15 x 15 x 1000mm long stainless steel SHS anchors in a sleeve. With the use of a steam driven compressed-air auger, a 10m hole could be drilled every 40 minutes enabling the project to be completed ahead of schedule.

