SPOTLIGHT ON

M1 JUNCTIONS 21A-23A

CONCRETE REPAIRS TO PARAPET

VolkerLaser was contracted by Highways England to carry out concrete repairs to a series of parapets between junctions 21a and 23a of the M1 motorway.

The team was required to complete repair works on three structures over an eight week period, all of which were suffering from alkali silicate reaction. Commonly known as concrete cancer, this is a reaction which occurs over time between the highly alkaline cement paste and the reactive non-crystalline silica, found in most aggregates. This reaction causes expansion of the aggregate and results in spalling and a subsequent loss of strength to the parapet walls.

The project had logistical challenges as, due to watercourses and heavy growth below the bridges, access was extremely restricted and a previously installed cathodic protection system was in place, which needed to be preserved. In order to overcome these issues and without compromising the integrity of the bridge, the team developed a workable solution with the brand new and innovative access system - Fast Beam.

The system, which is an adjustable working hydraulic platform, was mounted onto kentledge blocks, designed as part of the temporary works solution, allowing the team to easily access the parapet walls, working within the hard shoulder area of the motorway, causing minimal disruption to the busy section of road.

The scope of works saw the team temporarily remove the existing parapet railings and break out areas of affected parapet wall, on each of the three structures. The team then treated and replaced existing reinforcement, installed new parapet post bolt cradles, and cast new sections of parapet wall where needed. The railings were then reinstated before Fast Beam was uninstalled.

£227, 955
CONTRACT VALUE

8 WEEK
PROGRAMME

3
STRUCTURES

1ST PROJECT
FOR FAST BEAM

Paul Dittman, contracts manager for VolkerLaser, said:

"Utilising Fast Beam on this project meant we could undertake the works needed without compromising any of the challenges highlighted on this scheme. It was a pleasure to be involved in the first full project installation of this new system and I'm excited to see the other opportunities Fast Beam will open up for us moving forward."

The project was completed on time and to budget at the end of 2019 and provided a case study for the CN Specialist Awards, where Fast Beam has been shortlisted for Innovation of the Year.

FAST BEAM INSTALLATION ON M1 JUNCTIONS 21A - 23A.