VolkerLaser

# Fast Beam on the M1

VolkerLaser was contracted by National Highways 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 adjustable hydraulic platform was mounted onto kentledge blocks, designed as part of the temporary works, allowing the team to access the parapet walls from the motorway's hard shoulder with minimal disruption to traffic.

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, marking project completion on time and to budget.