SPOTLIGHT ON

CLEETHORPES ROAD OVERBRIDGE

STRUCTURAL STRENGTHENING AND REFURBISHMENT

Utilising industry-leading innovative solutions, VolkerLaser provided vital refurbishments to this vital transport link, which sees over 20,000 vehicles pass over the structure every day.

Opening in 1968, Cleethorpes Road Overbridge comprises 17 twin concrete spans supported on concrete piers. During an initial inspection undertaken, considerable decay and dilapidation to the bridge was discovered, particularly to its elastomeric bridge bearings. Prior to the works, the bearings were constraining the movement of the bridge, it was therefore deemed necessary for a refurbishment to be undertaken in order to expand the lifespan of the structure and prevent expensive ongoing maintenance issues.

Situated on the busy A180, over the main Grimsby to Cleethorpes railway line, the bridge is a valuable infrastructure asset to local communities and businesses, providing essential access to the seaside town of Cleethorpes and the Grimsby Docks. To ensure that the bridge remained open for the entirety of works, carefully planned contra flow traffic management arrangements were implemented on evenings, ensuring disruption to local residents and businesses was kept to an absolute minimum.

Traditionally when replacing bearings, extensive temporary works are required in order to enable the bridge deck to be lifted off the existing piers and abutments. However, when replacing the 512 bearings of Cleethorpes Road Overbridge, the geometrical arrangement of the tapered piers meant that the foundations were not directly beneath the bridge beams, so additional jacking foundations needed to be constructed. The process of excavation and exposing the existing foundations to form a tie-in arrangement would have run the risk of unforeseen ground conditions, and possibly required significant service diversions, all of which could have been disruptive to the project and potentially expensive.

An alternative solution, which allowed for the submission of a competitive tender, VolkerLaser had the innovative idea of constructing reinforced concrete corbels stitched to the existing piers from which to jack the bridge. The corbels were designed to provide support to the jacking system to lift the deck during the bearing replacement operation, thus eliminating the need for any works at ground level.

VolkerLaser was able to find practical efficiencies by the repetitive nature of the innovative scheme which also offered significant time and cost savings. The client was able to divert these cost savings to provide further enhancement works to the structure, whilst still remaining below their original budget for the scheme.

The project showcased VolkerLaser's structural capabilities, utilising in-house skills to deal with the corrosion of steel and repair through cathodic protection, carbon fibre wrapping, as well as structural repair and brick stitching techniques. Continual communication and problem solving between designers, contractors, client and consultants ensured the contract's delivery within budget and time constraints.

£1.7 M
CONTRACT VALUE

37 WEEKS
PROJECT DURATION

512
BEARINGS REPLACED

17
TWIN CONCRETE SPANS

THE CLEETHORPES ROAD OVERBRIDGE AFTER BEING STRENGTHENED AND REFURBISHED