A452 Kenilworth Road Overbridge

Customer: BBV JV, HS2 & Galldris

Location: Berkswell, UK

Products: Alform Beams & Superslim Soldiers

Case Study

ALTRAD RMD KWIKFORM PROVIDES TEMPORARY WORKS FOR HS2 KENILWORTH ROAD OVERBRIDGE CONSTRUCTION

Temporary works specialist Altrad RMD Kwikform (Altrad RMDK) has partnered with HS2's construction partner for the Midlands, Balfour Beatty VINCI (BBV) and leading civil engineering and groundworks contractor, Galldris, to support the realignment of the A452 road over the new HS2 rail line.

Project Overview

The A452 Kenilworth Road Overbridge is a fully integral box structure with in-situ concrete base, abutments and wingwalls, spanning 184 metres in total. This project is part of the vast HS2 landscape realignment of the A452 road over the new high speed rail line.

The structure was one of the highest concrete pours undertaken by Altrad RMDK in Europe to date with a pouring height of 13.7 metres to one of the main wingwalls.

The Challenge

The project presented a multitude of challenges due to the complex shape and weight of the bridge. One of the main challenges was overcoming the complex geometric patterns used for the wingwalls. These wingwalls tapered in height along their length and also along their width across the base. Not only this, but the external shutters lean into the internal face to taper in width across the height.

Where the wingwalls met the abutment walls, there was a complex movement joint that was required to allow for the expansion of the respective elements whilst still retaining the backfill that would eventually encapsulate the structure. The project demanded meticulous planning, coordination, and execution, with the additional pressure of adhering to a tight schedule.

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The Solution

Altrad RMDK and Galldris worked in partnership, bringing together expertise and resources from both organisations, which proved instrumental in overcoming the complex challenges posed by the project's scope.

The contractor needed a solution that could be configured into various shapes and sizes, and so a custom specification was engineered using Superslim Soldiers and Alform Aluminium Beams to meet the complex requirements.

Superslim Soldiers are designed to handle high loads, making them an ideal solution for a pour of this stature, as they were able to ensure that the formwork was able to remain stable under the pressure of the concrete. The beams helped maintain the structure's shape and integrity during the entire pouring process, which was crucial in preventing deformities and ensuring the accurate formation.

The Alform Beams provided a quick, durable and lightweight solution, allowing for simple installation, which was particularly advantageous on this high pour as moving and positioning formwork can be time and labour intensive.

Despite being lightweight, Alform Beams withstood the substantial pressure from the concrete, working alongside Superslim Soliders to ensure that formwork remained intact and stable throughout the pour. This was important as it was essential that the solutions maintained the tapering shapes and dimensions of the wingwalls throughout the pouring process.

Stuart Grant, Senior Sales Representative at Altrad RMD Kwikform, said: "The A452 Kenilworth Overbridge project highlights Altrad RMD Kwikform's engineering capabilities and innovative solutions. Through partnerships, careful planning, and the use of advanced equipment, the project demonstrated the effective collaboration needed for this infrastructure development."