

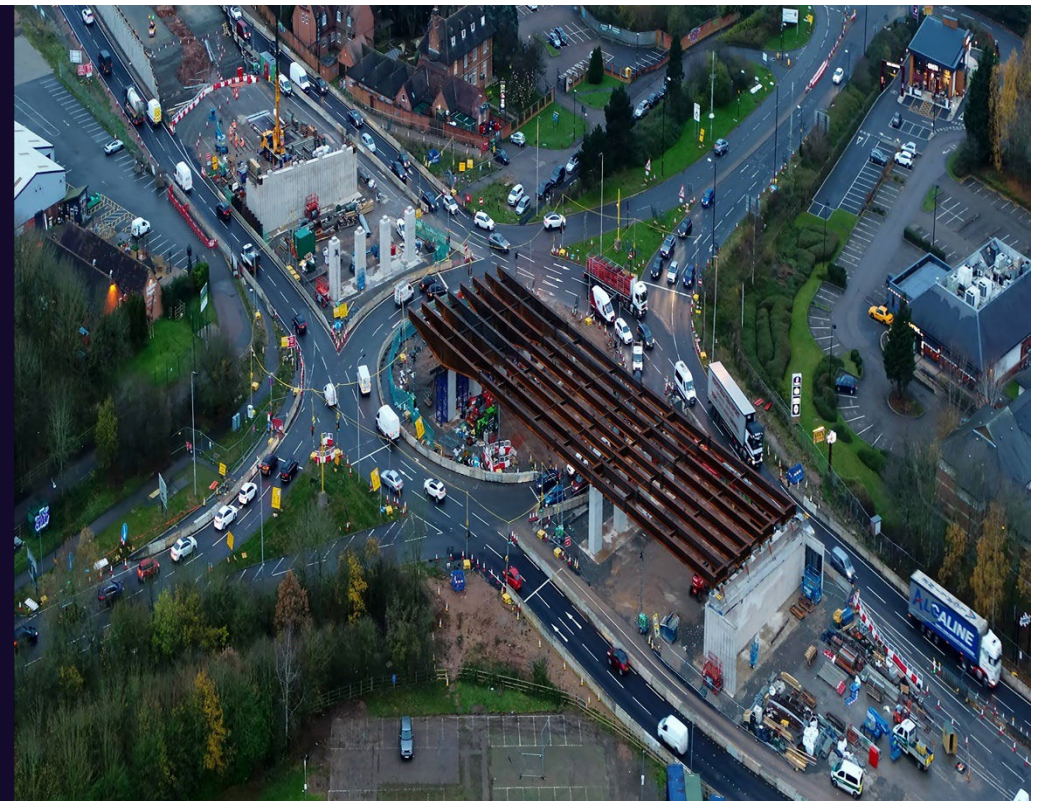
A new four lane, 135m flyover on the A46 at Binley is a great example of an integrated approach to design and build delivering £3.8m of added value.



### Case Study

## A46 Binley Junction – Integrated Design and Build Adds Value

PROJECT	A46 Binley Junction Improvements
CUSTOMER	National Highways
LOCATION	Binley, Coventry
CONTRACT	Delivery Integration Partnership
COMPLETION	2022





## Need

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The new four lane, 135m flyover on the A46 is a great example of how this holistic approach delivers the best outcomes. When finished the project will help alleviate a bottleneck on the strategic road network at the A428 Binley Junction in the West Midlands.

## Solution

A specialist team was formed to take the outline design forward into detailed design and build. Led by our delivery experts and JV design partners COWI and SWECO, the team integrated the expertise and knowledge of National Highways and our specialist suppliers into the proposals. The result was a design that simplified construction and released efficiencies.

### Flyover

The weathering steel bridge was designed for crane installation as logistics prevented fully off-line methods. The outline design was a 135m five-span bridge with two rows of piers positioned in the existing roundabout. Three significant efficiencies arose during detailed design:

- 1) The number of spans reduced from five to four which eliminated a row of piers from the roundabout.
- 2) The number of beams reduced from ten to eight.
- 3) Steel diaphragms replaced concrete diaphragms for ease of installation.

A significant impact of these changes was the reduction in activities in the roundabout with a knock-on reduction in cost, time, and disruption to road users.

### Junction

The layout was reconfigured to re-use of the existing roundabout. This meant there was more overlay and less full-depth construction saving cost and time.

Using the BIM Model and the traffic flow data we were able to phase the works to improve segregation from the traffic.

### Utilities

Utility diversions add risk on every project. One solution was to install shared corridors under

the roundabout. This delivered efficiencies and reduced the long-term maintenance liability.

### Reinforced Soil Embankment

Piled abutments replaced the design for bank-seats on the reinforced soil embankment. The main benefit was that it removed programme interdependency for the bridge works and approach works. A further benefit was the elimination of potential differential settlement between foundation types.



## Outcome

Together the integrated team have generated over 77 efficiencies to date with a potential value exceeding £3.8m

Safeguarding the budget has not been the only benefit. The project milestones dates have been met and the project is on target for completion in 2022.

National Highways have created the right environment to generate these outcomes and improve the road user experience.