

Corridor Design Services

Case Study

Knight Architects





Corridor Design Services

A465 Heads of the Valleys Road

On major corridor projects, the responsibility for delivering promises secured through the planning process often lies with the contractor and its designers. This ranges from the detailed execution of strictly defined structures to the development of concepts which comply with broad planning conditions.

Critical aspects of buildability and budget control, including Value Engineering

opportunities, must demonstrate compliance with the wishes of the planning authorities and key stakeholders.

The A465 'Heads of the Valleys Road' improvement project is a corridor scheme defined by a landscape that is both beautiful and challenging. Knight Architects worked with Atkins Jacobs JV and Costain on the 9km-long Section 2 between Gilwern and

Brynmawr, which passes through the heavily designated environment of the Brecon Beacons National Park.

Our role included concept, scheme and detailed designs, community engagement and securing stakeholder support for the numerous bridges and visual structures, including an innovative 2.5km-long retaining wall between split-level carriageways.

1 Challenges

- Numerous environmental, scientific and historic designations, all set within a National Park, the UK's highest environmental protection
- Multiple stakeholders, including three local authorities, national and local interest groups
- Complex and varied topography, with the highway climbing at 5% through the narrow gorge, and highly constrained project footprint
- Diverse range of bridge typologies and spans

2 Strategy

- An approach guided by Stakeholder events and secured through independent DCfW Design Review
- A narrative approach based on the highway user experience, informed by direction and sequence of structures and landscape features, and celebrating the unique sense of place, both natural and man-made
- Redesigning a major insitu stone-clad retaining wall to a prefabricated concrete solution with discrete stone features expressing the underlying geology
- Optimising the structures into a family of distinctive weathering steel footbridges, with a landmark structure at Brynmawr, fulfilling the planning requirement for a 'gateway' feature

3 Outcomes

- An upgraded section of critical highway that respects its setting and brings opportunity for enjoyment of the wider landscape to all users, whether travelling along or across the corridor
- Improved Active Travel opportunities for local people to access Brynmawr school, bus services and recreational trails
- Improvements to construction safety and quality due to prefabrication and MMC

Corridor Design Services

Projects

We work at the heart of multi-disciplinary teams, to support the delivery of nationally significant transport corridors, from project initiation to construction.

Our creative team combines architecture, design, engagement and communication expertise to help deliver transport projects on time and on budget through proactive collaboration and strategic design.

Reduced **risk**
added **value**
better **outcomes**
from **design**
to **delivery**.

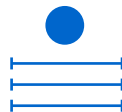
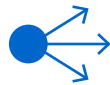
Projects which have benefited from our expertise include:

- [A417 Missing Link](#)
- [A465 Section II](#)
- [A303 Stonehenge \(Amesbury to Berwick Down\)](#)
- [A27 Arundel Bypass](#)
- [A82 Tarbet to Inverarnan](#)
- [A9 Perth to Inverness](#)
- [HS2 Phases 1 & 2](#)
- [Highways England Air Quality Barrier](#)
- [Lower Thames Crossing](#)
- [Mersey Gateway Crossing](#)
- [East Leeds Orbital Route](#)
- [A14 Cambridge to Huntingdon](#)
- [M2 Junction 5](#)
- [M4 Corridor around Newport](#)
- [Input to Highways England's Design Manual for Roads & Bridges](#)
- [Interstate Bridge Replacement \(USA\)](#)
- [Fehmarnsund Replacement Bridge \(DE/DK\)](#)
- [Duisburg Rhein Bridge \(DE\)](#)

Reimagining the Potential of Industry Design Standards

Having worked with National Highways and Network Rail processes for 15 years, we understand project risk and opportunity and address them from the outset.

We know how to bring creative flair to animate your vision, steering the project around familiar challenges which happen when design is considered too late. Our experience has given us a talent for spotting early design opportunities – both for efficiencies that reduce project cost, and to meet local needs. This builds trust with the communities and stakeholders that our projects serve, resulting in maximum buy-in, minimal risk, and a streamlined process for you.



Strategy & Engagement

PCF Stages 0-1 | PACE Stages 1-2 | RIBA Plan of Work Stages 0-1

As the project comes to life, it is vital to establish the objectives, hopes and fears of all those involved, and to clearly communicate these between parties. Knight Architects' keen sense of empathy bridges the gap between technical and lay audiences to align interests and smooth progress.

Options & Design

PCF Stages 2-3 | PACE Stages 3 | RIBA Plan of Work Stages 1-4

The defining stage of the project, where the Client's aims and the expectations of stakeholders come together and are transformed into architectural form through the creative judgement of Knight Architects.

Design & Delivery

PCF Stages 5-6 | PACE Stages 4 | RIBA Plan of Work Stages 5-6

The detailed design and construction stage is where Knight Architects' specialist experience adds value, ensuring the ambition secured by the planning process is realised authentically, efficiently and cost effectively.

Thank you

To discuss how we can add value to your project
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