

Client: Cadent  
Location: Birmingham  
Completion: 2025



# Saltley Viaduct pipeline diversion project

Working in close partnership with Cadent



# Project overview

To facilitate the construction of a major transport infrastructure project and ensure a safe and reliable gas supply, Cadent appointed United Infrastructure to deliver a complex gas pipeline diversion at Saltley Viaduct in Birmingham.

The project commenced in August 2024 and was completed by March 2025 under the NEC Option A form of contract.

This development required the diversion of an

existing 450mm Intermediate pressure gas pipeline to accommodate the new viaduct. The project involved the rerouting of 260 metres of pipeline, including an Under Track Crossing (UTX) beneath existing railway lines.

The project required extensive stakeholder engagement, with a record number of consents obtained for a Cadent project. Despite a stringent timeline, UI delivered the project ahead of schedule and within budget.

## A complex project delivered successfully, efficiently and safely

With a proven track record of delivering complex pipeline and tunnel works, the successful delivery of the project showcases the highest standards in planning, construction, and maintenance, reflecting meticulous attention to detail and commitment to excellence at every stage. The initial design phase involved comprehensive geotechnical surveys to inform proposals and support with risk management.

These advanced assessments helped inform critical decisions through the construction phase, employing cutting-edge tunnelling and innovative engineering solutions, ensuring every aspect was executed with precision and consideration. The maintenance strategies implemented ensured long-term resilience and reliability, adhering to stringent safety protocols and environmental considerations. This approach exceeded industry benchmarks, setting new standards for future projects and lessons learned.





# Scalable and cost-effective

After extensive review, UI selected HB Tunnelling (HBT) to deliver the project using a Herrenknecht AVN1200 micro-tunnel boring machine (MTBM), a well-proven and scalable solution.

During the tunnelling phase, the MTBM, named Lorena, successfully completed a 106-metre long, 1.5-metre diameter tunnel, running from East to West beneath the Derby and Washwood Heath rail lines, which served as a conduit for a replacement gas pipeline. Crucial to the project's success was the decision to construct shafts using the wet caisson method to mitigate the challenging wet ground conditions between the River Rea and Birmingham and Warwick Canal.

## Traffic management and health & safety

One of the significant challenges was the movement of large-scale plant equipment through a busy industrial area with restricted access points.

UI proactively managed the challenges of moving the substantial equipment required and conducted a specialised laser survey to safely transport oversized equipment through narrow and congested routes. Some equipment was disassembled to pass through a tight archway and reassembled on the other side,

demonstrating UI's innovative approach to logistical challenges.

Throughout the project, UI maintained a Zero Harm approach, **recording no Health & Safety incidents over 4,000 working hours** and safeguarding nearby water bodies, such as the River Rea and the Birmingham and Warwick Canal in an area of difficult ground conditions.



# Meeting industry challenges

The project delivered outstanding measurable results, demonstrating its success in meeting industry challenges. Innovation and collaboration were at the core of the project.

- **Collaborative project delivery:** UI worked closely with Cadent, multiple contractors and stakeholders, ensuring seamless integration of activities, reducing delays, and maintaining a high standard of safety and quality throughout the project's lifecycle.
- **MTBM deployment:** The MTBM allowed for a more accurate and safer pipeline installation beneath the viaduct, reducing risks associated with surface-level disruptions.
- **Optimised traffic and site management:** Detailed traffic management plans ensured minimal road and rail transport disruption. The site's logistical strategy allowed for seamless movement of equipment and personnel.
- **Enhanced pipeline integrity:** The newly installed pipeline ensures improved resilience and reliability for the local gas network, supporting long-term operational efficiency.
- **Long-term network resilience:** By implementing a future-proofed pipeline solution, the project aligns with the transition towards a low-carbon gas network, supporting the integration of hydrogen-ready infrastructure.



This was a challenging project from the start, with significant risks to be assessed and managed within very tight timescales. The successful completion of the project is a fantastic achievement by all involved and was only made possible by all parties working closely together.

**Adam Knight, Project Director, Cadent**







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For further information on how  
United Infrastructure can help please contact:

**James Blanchard**

Strategy & Business Development Director

E: [james.blanchard@unitedinfrastructure.com](mailto:james.blanchard@unitedinfrastructure.com)

T: 07415 801 197

United Infrastructure, Building 4 Clearwater,  
Lingley Green Avenue, Warrington,  
Cheshire, WA5 3UZ  
Switchboard: 01322 665522

[unitedinfrastructure.com](http://unitedinfrastructure.com)