

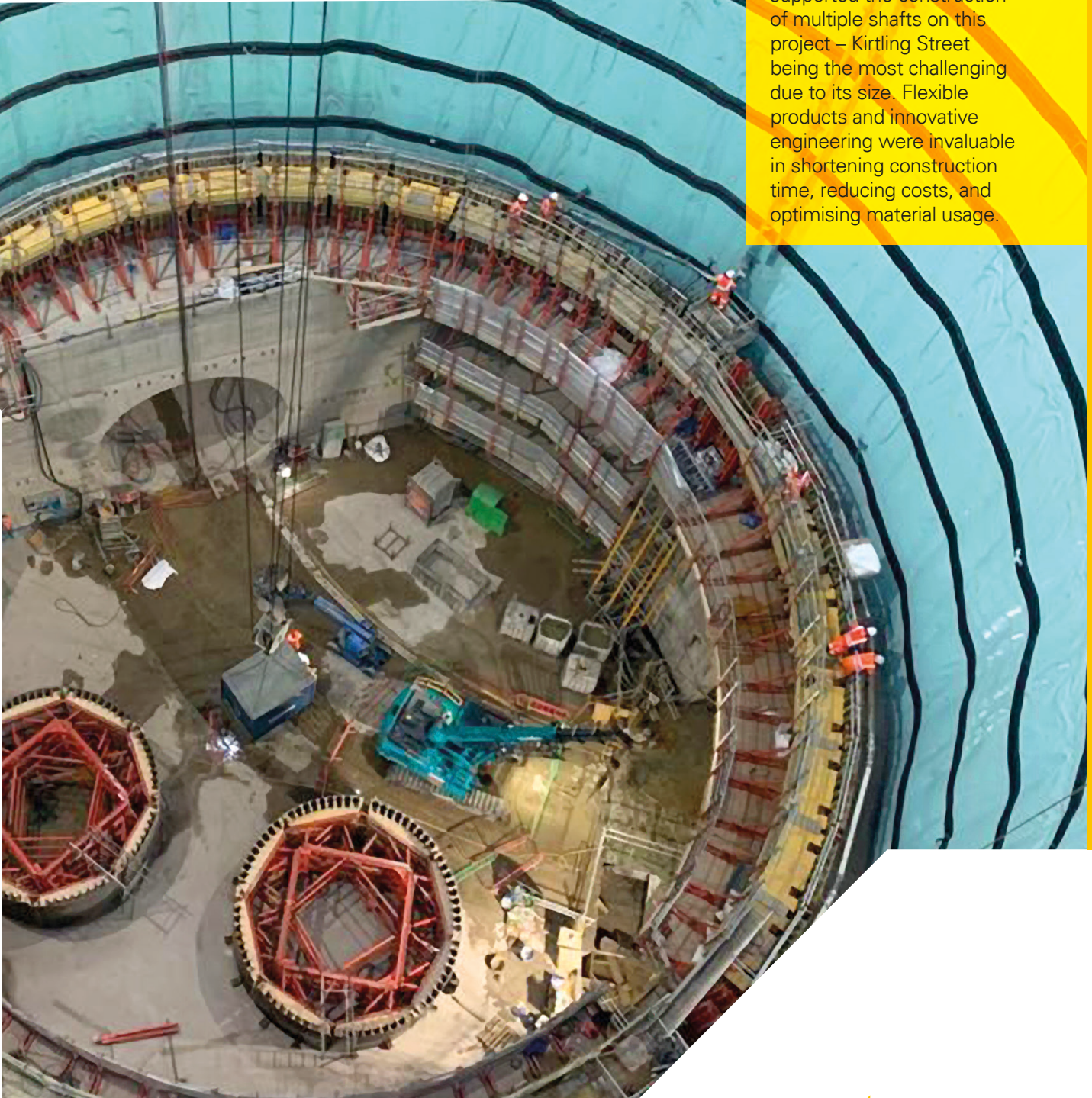
A smart climbing solution for Thames Tideway's largest shaft

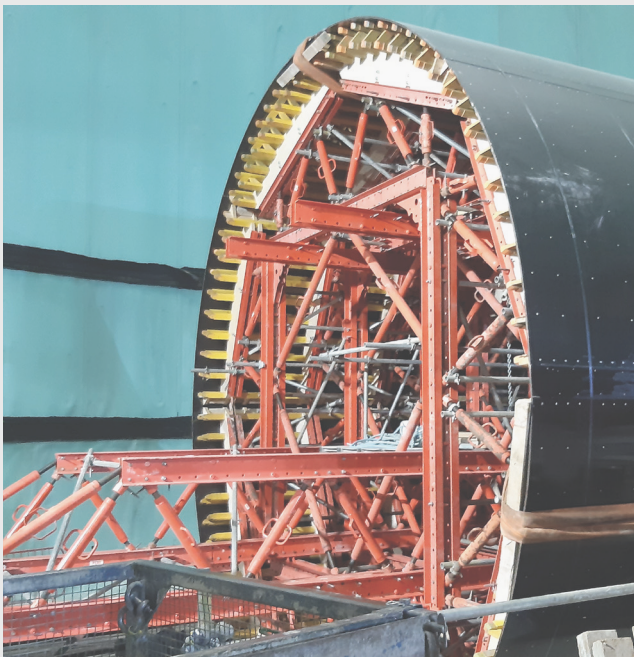
Key Benefits

- Fast cycle times
- High utilisation of components
- Off-site fabrication enabled quick turnaround

The project at a glance

Thames Tideway Tunnel is one of the UK's biggest infrastructure projects, involving over 20 construction sites. We supported the construction of multiple shafts on this project – Kirtling Street being the most challenging due to its size. Flexible products and innovative engineering were invaluable in shortening construction time, reducing costs, and optimising material usage.





What did the customer need?

With a diameter of 30m, this shaft is the largest across the entire Tideway project. A temporary works solution was required to deliver two tunnel portals that were 7.3m wide and 6.5m deep in addition to a 1m thick secondary lining for the shaft walls.

For the secondary lining temporary works, the Ferrovial Laing O'Rourke JV (FLOJV) site team required an efficient jumpform system that would reduce cycle times.

Customer: Ferrovial Laing O'Rourke JV (FLOJV)

Project type:

Infrastructure, Water Treatment

Products & Services:

VARIOKIT, SCS Climbing System, RCS MAX Rail Climbing System, SB Brace Frames, PERI UP Heavy-Duty Shoring

What was the challenge?

The tunnel portals had to be cast in tandem with the tunnel drum – the 15m height of these portals making the formwork design more challenging.

How did we help?

Our engineers proposed an innovative solution comprising standard rentable components from our VARIOKIT range, minimising costs and maximising material reuse.

The formwork solution split the concreting process into two halves to accommodate the height of the portal. For the lower half, the tunnel drum was integrated with a moving frame used in conjunction with SB brace frames. The top half comprised SB brace frames which were integrated with PERI UP heavy-duty shoring. Anchors were cast into the concrete structure on a 45-degree angle to support and keep the SB brace frames securely in position. The drum formwork was integrated with heavy-duty trusses comprising RCS rail frames and heavy-duty rollers to facilitate movement. The solution was designed to serve multiple purposes, such as enabling safe installation into the casting position, height adjustment and preventing uplift during the pour.

For the climbing formwork, we combined our RCS (rail-guided climbing) and SCS (single-sided climbing) climbing systems, enabling faster cycles as all platforms climbed simultaneously with the support of RCS MAX hydraulics. Hydraulic operations accelerated the circumferential lift, as the system could be jumped in just 1-2 hours compared to crane operation which took 30 minutes per platform. This also enabled the crane to be used for removing locomotives from the shaft, making hook time more efficient.

SCS climbing was used to support the concrete load from the single-sided pours. RCS MAX lifted the entire ring consisting of 41 formwork platforms to the next level in 3.2m lifts with the push of two buttons.

The entire solution was fabricated off-site at our Rugby depot, contributing to time-savings, reductions in labour and minimising on-site safety risks.

Contact us by email
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