

TIDEWAY'S INNOVATION PROGRAMME

THE GREAT THINK

Tideway's Innovation Programme, "The Great Think", was launched in 2017 to encourage and incentivise new ways of working through our supply chain. It has generated a return on investment (ROI) based on cost savings for the project of 4.8 to 1, ahead of the original 3 to 1 target. We forecast that the total ROI of the programme will be in excess of 8 to 1.

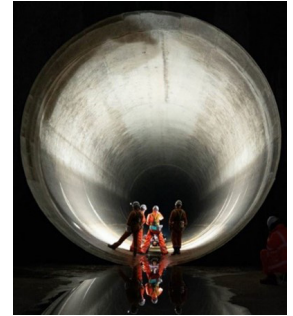
A key element of the programme is sharing our innovations with industry through the Infrastructure Industry Innovation Partnership (i3P) so they can benefit future projects.

These are some of the innovations identified by the programme:

Using autonomous vehicles for 10-year tunnel inspections

The Great Think funded a feasibility study into alternatives to manual tunnel inspections, which led to successful trials within the Lee Tunnel using autonomous vehicles.

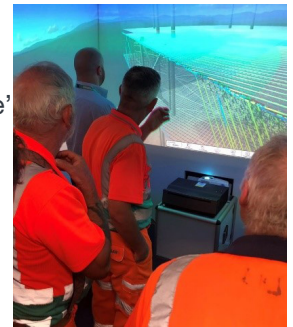
As well as generating significant savings, using these vehicles reduces or removes the need to put workers in a hazardous environment and removes the need to isolate parts of the tunnel during inspection, which would create potential environmental impact with the subsequent discharges that would occur.



Widening access to 3D engineering models

The Tideway West team widened access to 3D engineering models without needing a specialist to be available to demonstrate or explain them by developing a Virtual Reality 'cube' which integrated with existing software and data and which required no training and was easily operated with a gaming controller.

The new cube delivered time savings for modelling specialists, improved the identification of potential design or construction issues and helped to prevent accidents. It also became a useful STEM and local stakeholder management tool.



Automating secondary lining operations

This innovation involved automating parts of the 'shutter' machine used in tunnel secondary lining. The shutter's 'spud bars' hold it in place to allow a concrete pour and are traditionally manually operated using hand tools, a time-consuming and physically intensive process. It can also require site workers to work at height, which increases the risk of a safety incident.

The Great Think invested in trialling the UK's first-ever use of automatic spud bars, extended and retracted with hydraulic screw jacks and controlled remotely. As well as cost savings, this innovation ensures the bars can be positioned with greater accuracy and removes a lot of manual operations from a key process.



What else we found

We also made some key findings / recommendations on innovation to share with industry:

- Create an innovation strategy, dedicate resources and set up management processes as early as possible in the design and planning phase of a project in order to increase opportunities to invest in the best innovations,
- It could be beneficial for future projects to have a dedicated innovation resource amongst Main Works Contractors, particularly as the project progresses and time pressures increase and innovation becomes a 'nice to have' rather than essential activity
- Develop a strong and committed team of innovation champions to create a tangible culture of innovation, supported by events and reward and recognition from senior leadership to innovators going 'above and beyond' their day job
- Commit to supporting a knowledge-sharing group or online hub such as i3P. Tideway committed to supporting i3P through its launch and first few years.
- Consider the opportunities to merge innovation management with knowledge management and the capture/ dissemination of project lessons learned