



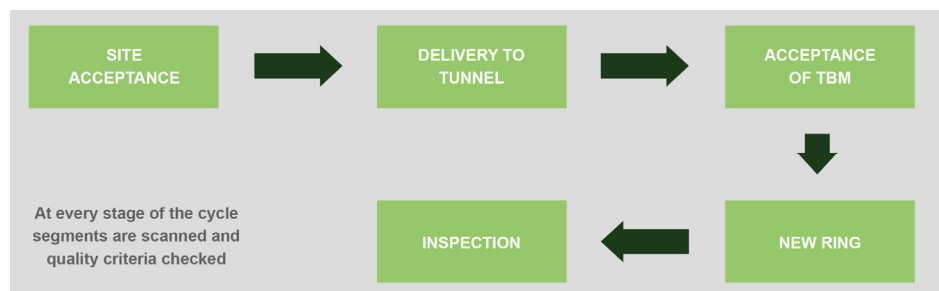
INNOVATION EDGE™: SEGMENT TRACKING SYSTEM

Main Image: Scanning of tunnel segments at Crossrail Thames Tunnel C310

The Hochtief Murphy Joint Venture has used a Segment Tracking System to control delivery of key components from fabrication through to installation, improving efficiencies in its tunnelling operations.

Description

The Hochtief Murphy Joint Venture (HMJV) used the Segment Tracking System to improve the efficiencies of its operations. The system has two main outcomes. It records that each tunnel ring segment has reached the required quality standard, that it is within tolerance and that it is deemed suitable for use. It also provides a system for live tracking through the different phases of transportation and installation. A unique barcode is fixed onto two different faces of each segment. The barcode is scanned with a simple handheld scanner enabling the quality criteria to be monitored at each stage of the following sequence:



The Benefits

- Enables tracking of every single element from fabrication through to installation in the tunnel.
- Increases efficiency and time savings, and has the ability to integrate the entire system into tunnelling software.
- Reduces paperwork and minimises the possibility of human error.
- Ensures quality transparency, enabling early response to potential ring defects.
- Eases logistics and enables staged delivery planning.
- Decreases the site lay-down area required, resulting in less environmental impact.

Application

The Segment Tracking System was applied on the Crossrail Thames Tunnel C310 project carried out by HMJV. The £260m project comprised twin-bored tunnels that were 3km long and 6.2m internal diameter, as well as, 1km of associated approach structures.

The system enabled HMJV to control ring segment delivery in a simplified manner, speeding up the inspection and installation process. It was integrated into the Tunnel Process Control software which resulted in time savings of 8 hours per week for the engineering department compared with previous methods.

The Segment Tracking System cost approximately £5,000 to adopt for the project. It enabled the project to achieve key installation milestones and eliminate the requirement for large lay-down areas.

Employing the system reduced the number of spare rings needed to just two per set, representing a 2% saving on previous projects.

End User Feedback

The Segment Tracking System received positive feedback on the Crossrail Thames Tunnel C310 project.

The system eased the completion of handover packages and was regarded as a good approach to quality control. It significantly reduced both manual work and traditional paperwork.

“The Segment Tracking System increased confidence, reliability and retrieval of assurance records and provided complete traceability of ring packages throughout the project.” – **Neil Hodgetts, HMJV Quality Manager**



Crossrail Thames Tunnel C310 project

Market Potential

This Segment Tracking System has the potential for a number of applications, particularly where materials or separate components require to be moved regularly or need inspection and/or acceptance on delivery. Examples include pre-cast concrete structures, steel fabrications, plant and materials.

Learn More

For more information, please contact Murphy Marketing & Communications Department at communications@murphygroup.co.uk

This is a brief description of the solution as we have applied it and should not be taken as exact. Its application must take into account the local environment and specific project requirements.

