

**Case study title:** Thameslink Canal Tunnels – Tunnel Mock-Up  
**Month/year:** March 2015

**Business unit:** Construction Services/Rail

**Date and location:** March 2015 at Canal Tunnels

**In partnership with:** Network Rail (Client)

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**Thameslink Sustainability Strategy - Objectives**

- ✓ Reducing cost of delivery (Objective 11)
- ✓ Achieving value for money (12)
- ✓ Reducing waste (18)

**Background**

As part of the Thameslink Programme to increase rail capacity through central London, Carillion was responsible for design and construction of the railway systems within 1,300m of existing 6m diameter tunnels between St Pancras International (low level) station and the East Coast Mainline.

A replica (mock-up) of the bottom half of the tunnel bore was constructed (Photo 1) from timber in the site compound allowing the project team to trial various methods of construction. It gave the team the opportunity to fine-tune techniques for installing a concrete track slab in a restricted working environment.

Following the success of the trials, it was decided to combine two stages of the concreting works which were originally planned to take place as two separate stages.

Stage	Original Staging	Revised Staging
1	Base Slab	Base Slab
2	Shoulder	Combined Shoulder and Track Slab
3	Track Slab	

Photo 2 shows the original 2-stage process in the background with the combined stage ready for pouring in the foreground. Combining stages 2 and 3 resulted in a significant saving on programme and cost. The project hosted a number of media (BBC) and MP visits along with a visit from London Underground, who were keen to understand the efficiencies realised during the slab track trials.

**Key Facts:**

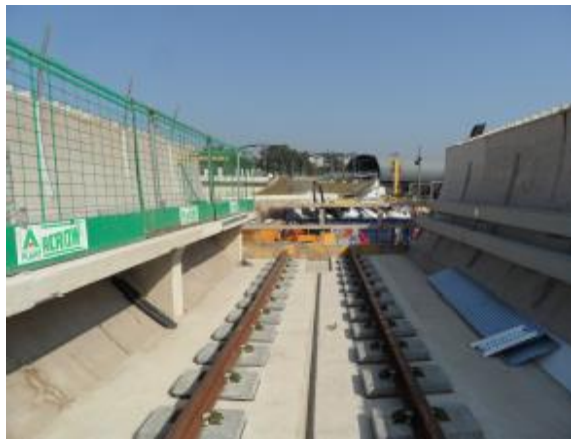
- The team spent £30,000 to construct the mock-up
- Altering the 2<sup>nd</sup> stage track slab concreting works saved 4 weeks on the programme
- Saved the project an estimated £150,000
- Overall 4,000m<sup>3</sup> of concrete installed
- No concrete remedial works were required.



Photo 1 – Tunnel mock-up under construction (above)



2 – Preparing to install trial track slab



3 – Completed mock-up including walkway & Cable Management System (CMS)



4 – As constructed track slab, walkway and CMS