



TEMPORARY WORKS DESIGN LONDON UNDERGROUND



Brief

Following an incident whereby a London Underground Covered Way was damaged during works above a live tunnel. Riddwood Consulting Engineers were contracted to provide a Temporary Works solution for a unique challenge in the London Underground Central Line in Shepherd's Bush. The requirements of London Underground were such that we could not fix into the permanent works structure.

Client Feedback

The design was such that the falsework was installed ahead of schedule and without incident, allowing the repair of the slab above to continue safely with no disruption to the Underground service.

Daniel Ready,
Project Manager, WPB Constructions.

Engineering ideas into reality.

RIDDWOOD
CONSULTING ENGINEERS



Design Process

Riddwood Consulting Engineers designed a completely timber 'bolthole' solution to span between the girders and work on the principles of bearing and friction with being fixed to the existing substructure. The components were designed as a single size for ease of use in the tunnel environment and had to comply with London Underground specifications for temporary structures, including being completely fire retardant.

The concept of using a bespoke light weight steel was form was explored because of capacity and strength for reducing the centres. Ultimately the complexity of the shape of the void and the weight of the steel members resulted in discounting this concept.

Falsework using proprietary falsework such as off props and lattice girders was discussed with the intention of reducing the amount of materials used in the solution. Again, the complexity of the shape and our restrictions with regard to fixing into the existing structure proved this solution unsuitable.

Design Codes Used

- BS EN 1990 - Basis of Structural Design
- BS EN 1991 - Action on Structures
- BS EN 1992 - Design of Concrete Structures
- BS 5975 - Code of Practice for Falsework
- Construction Design and Management (CDM) 2015



Figure 1 • Falsework Solution

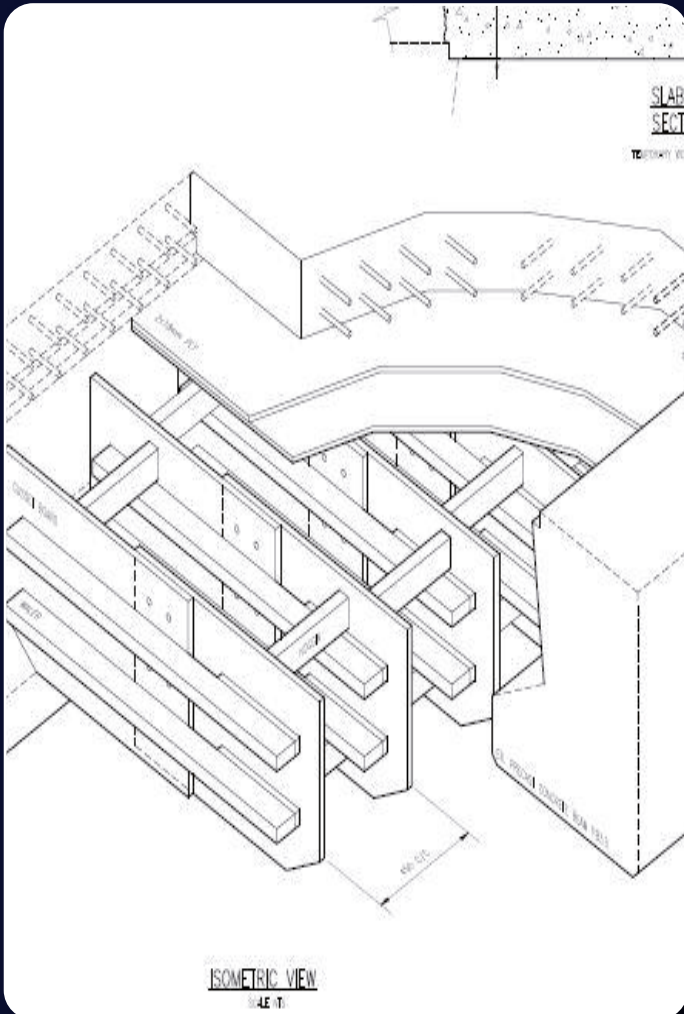


Figure 2 • The Completed Falsework



Figure 3 • Hole in Covered Way

