

Case Study: Lessons Learned Summary Report

Bermondsey Dive Under & Structure Strengthening Project

The **Bermondsey Dive Under** (BDU) was constructed, as part of the Thameslink Programme, to minimise conflicting crossing moves between the Sussex lines and Kent lines at South Bermondsey Junction. Grade separating the junction enabled Blackfriars-bound Thameslink trains (from the Sussex lines) and Charing Cross-bound trains (from the Kent lines) to cross, without train path conflict, before entering the reconfigured London Bridge station.

The remit for **Structure Strengthening Project** (SSP) was to provide Route Availability - RA8 capacity for the existing structures carrying track affected by the Thameslink Programme realignment works between Waterloo East and New Cross stations.

This case study summarises the key lessons from what went well on the project including: integrated planning and relationship management, management of third party relationships, integrated working, change management, value engineering and scheme handback and close-out. It also looks at what could have been improved, including contract content, contract administration and rework/redesign costs, and proposes recommendations for future schemes.



1. Summary of Key Lessons

A significant number of lessons learned throughout the duration of the project were captured. The key common lessons across the project are presented below.

1.1 What Went Well

1.1.1 Integrated Planning and Relationship Management

It was key for both the BDU and SSP projects to work closely with other projects in the area, due to the level of integrated working that was required. The team actively took part in integrated planning and coordination meetings and maintained a dedicated point of contact to facilitate communication with the other projects. This facilitated several benefits, such as agreement of access and working within shared possessions, the use of possession resources for materials/plans, and the sharing of facilities when working near sites.

Lesson

- Collaborative working is essential, especially when working in an integrated project/programme environment
- Concerted efforts should be made to build and maintain relationships with other teams/projects.

1.1.2 Management of Third Party Relationships

Due to the wide scope of the project (20 structures under SSP, plus the BDU worksite) there were a lot of third party requirements to manage (local councils, utility companies, residents, transport authorities, as well as the route/maintenance teams). With early engagement and maintenance of relationships, the project was able to mostly determine/agree requirements in advance of actual works or handback being carried out. This allowed works to be robustly planned and completed without rework or long disputes. The project also actively engaged with residents to resolve issues such as noise/waste management, and in addition took part in community outreach exercises such as XLP youth group volunteering and two local school visits to site – this received positive reaction and recognition.

Lesson

- Early consideration needs to be given to various stakeholders and interfacing parties, and steps taken to build and maintain relationships with those parties from the beginning of the project
- Early identification and agreement of things such as handback requirements prevents issues later in the project.

1.1.3 Integrated Working

The Network Rail project team and the main contractor were co-located in a shared project office. This meant that the teams were able to quickly discuss emerging issues in a live environment and make shared decisions, and enact them, expediently. It also allowed for processes that can typically be delayed due to a 'back-and-forth' nature or need for clarification, such as submission of and responding to technical or commercial queries, to be handled in a much more streamlined manner as queries could be discussed live.

Also, 'Integrated Master Planning' were regularly held through the life of the project which involved Network Rail, Main Contractor, and the various sub-contractors that were involved in the works. These were found to be highly productive, allowing for clear communication of work plans and objectives, clarification/confirmation of roles and responsibilities, and discussion/resolution of emerging issues in a joint environment.

Lesson

- Consideration should be given to the suitability of working in a co-located office with the Main Contractor
- Even where not appropriate/possible, steps to maintain an active visibility/presence are recommended
- The use of integrated planning sessions through delivery stages is highly beneficial.

1.1.4 Change Management

The project employed an organised change management process, consisting of a live Early Warning/Change Register that was held in a shared location, a weekly meeting to discuss and review the Early Warning Register, and a Periodic Change Panel to agree the instruction of change and management of project contingency (as well as the co-located commercial staff as mentioned above). Whilst this was initially perceived to be a significant level of control/number of meetings to have, it allowed for change to be monitored and controlled regularly, as well as any issues to be tabled early for resolution (as opposed to building up a backlog of issues or holding up the implementation of change due to non-agreement). Given the high level of change experienced on the project (and, from the project teams' experience, in general for construction projects) this was critical in achieving some of the deadlines for delivery.

Lesson

- Change Management as a process/work-stream should not be underestimated, and the implementation (and maintenance) of a robust change management process from the early stages of a project can prevent numerous issues that can ultimately impact on successful delivery or meeting of milestones.

1.1.5 Value Engineering

Several successful efficiencies were realised on the project, relating to both delivery methodology and material/resources. Some of these were seemingly very large (i.e. changed fundamental aspects of structures/works to be delivered, such as the change from in-site concrete pours for the BDU structures to pre-cast units) and may not typically have been considered as part of Value Engineering activities.

Lesson

- A likely result of working in a co-located office, as this promoted high-level discussion of ideas/concepts for Value Engineering
- Value Engineering should not be inherently limited in scope/remit – project teams should be willing to consider potential changes at the fundamental level.

1.1.6 Scheme Handback and Close-out

Provision of a dedicated staff/ team from both Network Rail and the Main Contractor helped in managing the project handback and closeout. The team was able to bed into the project team early before the project handover. This helped in closing out the outstanding issues and pulling together of the handover/ closeout documentation e.g. Assurance pack, As-Built drawings, Health & Safety File, etc faster. Other closeout activities like trainings, site handover, demobilisation of site, transfer of residual risks, etc were dealt with effectively. Although there were some challenges in dealing with National Record Group (NRG) for handover of the records (As-built and Health & Safety file), as some of the deliverable documents were not agreed at the outset of project, so the documents had to be agreed before handover.

Lesson

- At the end of the GRIP 6 works; when other project staff members were busy looking and moving to new job opportunities, the allocated dedicated resource team were able to focus squarely on the project handback and close-out
- The workload involved in preparing/delivering the handback/closeout cannot be underestimated
- Early involvement of the closeout team with the other project team helped the closeout team to understand the project and the issues. It also placed the closeout team in the forefront, taking ownership and planning of the handback/closeout strategy
- The allocation of dedicated resources is recommended to achieve to target.



1.2 What Could Be Improved

1.2.1 Contract Content

There were a small number of commercial issues throughout the project relating to the contract, for instance, there were several items (responsibility for GRIP deliverables, drawing formats and requirements, scope

boundaries, shared risk, incentivisation model, use of a shared document management system) which were found to be one of the following:

- Desired by Network Rail but not able to be enforced as they were not actually stipulated in the contract
- Found to be either unclear, leading to dispute
- Had unanticipated consequences to those intended from the way they were implemented.

Lesson

- The contract needs to be reviewed for clarity and content. Where certain items are deemed to be a key requirement by Network Rail, they should be considered for inclusion in the contract.
- Where changes are made, especially relating to commercial/financial outcomes, consideration needs to be given to the potential difference in consequence compared to those hoped to be driven by the change.

1.2.2 Contract administration

Administration of the contract throughout the life of the project was not as robust as it could have been, both by Network Rail and the Main Contractor. This ultimately led to significant “grey areas” at the end of the contract when agreeing the final accounts, as the Main Contractor were not able to evidence a number of items for claim, and Network Rail were not also able to challenge (or accept) these claims.

Lesson

- The contract needs to be administered in full from the start of the project. Even when it may be perceived in delivery that requirements can be waived or deferred, or the failure to deliver certain requirements not chased by the client to expedite works and avoid potentially difficult conversations, it needs to be recognised that the impact of these decisions later can be detrimental to both parties.

1.2.3 Rework/Redesign Costs through GRIP 3-5

Significant levels of redesign were required on the project through GRIP stages 3 to 5. This was primarily due to the following two reasons:

- Designs being produced at GRIP 3 (before a contractor was procured) that were ultimately found to be not deliverable in the timescales available
- Later stage designer not accepting designs from the early stage designer due to the change in responsibility under the contract.

Lesson

- Where possible, it would be beneficial to engage a contractor experienced in delivery in GRIP stage 3 to consult and inform the initial designs to ensure viability of delivery
- Consideration should also be given to the impact of changing designer between GRIP 3 and 5 – it would be highly beneficial to retain the same designer to avoid rework/redesign costs. Where this is not possible, this redesign cost and time should be accounted for within the project estimate.

2. Recommendations for Future Schemes

- **Involve the right people in the right time** - inclusion of project closeout team at the right time of the project increases the chances of success in project handover and closure. The closeout team help to bridge the transition from project to operation (business as usual)
- **Integrated project team** – co-location of project team (both client and contractors) in the same building as much as possible help to galvanise the team and make communication much easier and faster

- **Change Management** – more effort should be directed to maintaining change management process and the implementation at the early stages to avoid issues that can impact on achieving key milestones and successful delivery of the project.

Author

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Further information

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