

CASE STUDY

Thameslink Project

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| LOCATION: | London Bridge |
| CLIENT: | BAM Nuttall |
| DATES COMPLETED: | Ongoing (Commenced Spring 2020) |



Introduction

Global Rail Construction Limited (GRCL) has secured a multi-disciplinary S&T, Civils and E&P Points Heating remedial contract at London Bridge, on behalf of BAM Nuttall for the Thameslink Project.

As part of the Thameslink Programme, the railway systems for London Bridge were completely remodelled to suit a new layout at the Station and provide substantial capacity improvements to enable amendments to the operational timetabling - this is referred to as the N421 Project.

However, the complexity of managing, staging and delivering the railway systems in order to meet the remodelling programme, necessitated a requirement for the railway systems infrastructure to be surveyed, in order to confirm both its suitability and the requirements to undertake further upgrades and rectifications as required.

Global Rail Construction Limited are among a team of specialist rail contractors working in a highly coordinated manner to deliver these important upgrades for Network Rail. The in-house team of multi-disciplinary experts from Global, have worked almost entirely within a live, operational environment, interfacing daily with equipment that is switched on, in a wholly compliant manner.

The specialist discipline support services undertaken by Global Rail Construction Limited cover the entire end-to-end design and build scope of the Signalling, E&P and Ancillary Civil Engineering programme.

The Deliverables

Having an in-house multi-disciplinary workforce including design, civil and structural engineering, S&T and E&P expertise, along with in-house project management and having previously delivered time pressurised, highly co-ordinated schemes, allows Global Rail Construction Limited to provide the necessary combined solution in order to deliver the project scope to meet and exceed the client's requirements.

S&T

An S&T survey and rectification contract to undertake the necessary investigation, reporting and remedial works to 44No Signal Gantries and their associated containment, which included the following scope:

- ① Structural condition surveys of the signals in relation to the original Form A requirement
- ① The condition and positioning of S&T cables on the structures including:
 - The position of cables relative to associated tray work/containment (particularly noting areas where cables have no associated containment)
 - The type of signal cable (B or C)
 - An assessment of cable slack (or tension)
 - Any visible damage to cables
 - Any serrated edges on tray work/containment that could potentially cause damage to cables
 - Any structure concerns
 - Tagging and tracing of cables to ensure end to end point identification
 - Condition and suitability of the use of cable management to secure cables to containment in contrast to the existing Civils As-Built design
 - Attendance at Weekly Technical Interface Meetings to determine next steps
- ① An agreed programme of S&T remedial works to 44No gantries based on the findings
- ① Production of final reports, documenting the findings, associated agreements and inclusion of all remedial works undertaken

E&P and Civils

An E&P and Ancillary Civils design and build package of works - delivered in-house - covering Civils and Points Heating remedials. The 26-week programme, includes an 8-week procurement period in order to secure all necessary RCM equipment and parts and covers the following activities:

- ① Preparatory investigation and surveying including:
 - A detailed review of as-built records
 - Reviewing and assessing of current designs
 - Correlation of the RCM installation
- ① Design work which covers:
 - Collation of survey data to determine the scope
 - Civils design - bespoke design solutions to support survey recommendations
 - E&P design - bespoke design solutions to support survey recommendations
- ① Civil Installation works:
 - Installation of TX Bases
- ① Electrical works
 - Cabling, Jointing and termination works
 - PHCC/RCM Remedial works and commissioning
 - Removal and replacement of CT boards
 - Mechanical fixing and installation of new CT's
 - Installation of new Aerials
 - Installation of new circuitry (MCB's, CT's, Terminals, Labels)
 - Installation of DCU 390 PH – Data Loggers
 - Environmental testing (Hot & Cold Probes)
 - Commissioning, configuration checking and final testing
- ① Provision of as-built Civils and E&P information including O&M data

Challenges and Solutions

Key interfaces and programme

As part of the delivery for the S&T, Ancillary Civils and the E&P packages, Global Rail Construction Limited were able to provide a coordinated programme of multi-disciplinary works to interact between the key structural installations required to facilitate the survey, and subsequent remedials - predominantly the Signalling equipment and the Electrical installations.

This was crucial to the already finely balanced timeframe for the project, with everything needing to be operational in time for the Christmas blockade. Global Rail Construction Limited utilising its in-house design capabilities provided additional support to the client, identifying options that enabled the project to stay on track. This included 5-6 day working weeks with teams working concurrently throughout.

The Benefits

When a project is time-critical and crucial milestones have to be met, experience is a key factor in achieving success. Having an in-house team of design engineers, project managers, signalling, civil and electrical installers that are able to interface with each other as well as a myriad of stakeholders, without doubt, has enabled solutions to be quickly and effectively formed – providing programme surety.

The ability to call on the full extent of its in-house management team and supply chain partners, as and when needed to keep the works on track, has also evidenced the superb ethos, mentality and togetherness within Global Rail Construction.

Installations have required careful coordination of Civils teams and both S&T and E&P equipment installation activities, requiring all disciplines to work seamlessly to allow the works to progress in order to meet key dates.

This coordination with Global Rail Construction's designated signalling team is crucial to ensure that the 110v supplies will be available to meet the pre-commissioning signalling testing works. Works covered modifications to existing signalling infrastructure and removal of redundant equipment to facilitate the future signalling testing/commissioning and the coordination and staged handover of Signalling Power to the Network Rail Maintenance team.

Global Rail Construction is a multi-faceted, multi-disciplinary design and build contractor which works in civil engineering, electrification, mechanical and power, signalling and building, and directly employs several hundred staff for projects in both mainline and metro rail systems.