

CASE STUDY

Feltham Resignalling Project

LOCATION: Shepperton Branch Line, Feltham, Middlesex
CLIENT: Kier Construction (Kier)
DATES COMPLETED: January 2016 - November 2016



Introduction

Following previous successful contracts with Kier, Global Rail Construction Ltd (GRCL) again delivered a compelling tender and, in early 2016, was awarded the civil engineering scope of works for the Feltham Resignalling Project (Shepperton Branch).

The major resignalling project to renew life expired signalling, telecoms and power assets on behalf of railway systems giant Atkins, comprised the renewal of 538 Signalling Equivalent Units (SEUs).

The geographical work-scope, which covers over 80 miles of railway lines also included, for the first time, the introduction of Atkins brand new signalling system – Elix.

Works were planned during mid-week days and nights, Saturday nights and four 28-hour railway possessions between weeks 48 and 14, leading up to a 15-day blockade commencing in Week 16, between 16th and 31st July 2016.

Having a multi-disciplinary workforce including rail, civil and structural installation expertise, along with in-house project management, and having previously delivered time-pressurised re-signalling schemes, allowed Global Rail Construction to provide a delivery solution, one which the client readily accepted.

The Deliverables

Global Rail Construction planned and delivered a fully managed project solution, one which effectively coordinated with all scheme stakeholders to achieve full compliance with all relevant quality, safety and railway standards. The work scope included:

- ① full project risk management, including coordination of relevant risk workshops with client and other appropriate stakeholders, prior to commencement of works on site;
- ① preparation of a detailed programme of works to take into consideration the project milestones;
- ① site mobilisation, including the erection of all relevant Vortok fencing. Delineation of the work site was a key component of the works, due to the need to incorporate working on or near the line during the day;
- ① service location, survey and site investigation works;
- ① vegetation and brush clearance of the entire site;
- ① two power supply point (PSP) compounds, including the associated in-situ concrete bases constructed;
- ① 2500m of new glass reinforced plastic (GRP) troughing route on posts supplied and installed;
- ① five location case hardstandings constructed;
- ① 3,000m of new concrete troughing route delivered and installed;
- ① 12 AWS (magnet) hardstandings constructed;
- ① 15 hinged signalling hardstandings constructed;
- ① three two-track under track crossings (UTX) installations;
- ① installation of a power supply point (PSP);
- ① construction of new cable duct routes through three existing station platforms (Sunbury, Kempton Park and Hampton Park), including locating and proving existing services and working with HV assessment;
- ① 1 under-road crossing (URX) constructed including the provision of traffic management;
- ① piling of signal bases;
- ① 16 new signals erected both cantilever and single post types;
- ① 6,000m of existing troughing routes refurbished;
- ① asbestos removal; and
- ① provision of all handover and as-built documentation.

Challenges

One of the major project challenges was the amount of time available for the works.

Global Rail Construction was not only faced with a site where design approvals were still being sought, they were also part of a project where a new signalling system – Elix – was being introduced for the first time. This, alongside minimal track possessions, presented a sizable challenge to Global's experienced team.

The scheme only provided four 28-hour possessions for materials deliveries prior to the main 15-day blockade. During this time Global Rail Construction also had to complete all the UTX works in advance.

This required great expertise and a meticulous approach to worksite planning from an experienced re-signalling civil engineering contractor, in order to keep the project on track and on programme.

Solutions

Using its vast proficiency in delivering similar schemes, Global Rail Construction's team set out to re-engineer the scope of works with client, Kier and overall client Atkins, introducing significant savings and efficiencies to the overall programme.

A detailed review was also undertaken of the possession strategy, with GRCL providing a prioritised programme, which included a robust set of track access requirements for each site location. This provided both Kier and the ultimate client, Network Rail, with a fully co-ordinated plan of activities.

Applying this approach allowed Global Rail Construction to fully control its delivery programme at all times, which provided confidence at every project milestone.

Global Rail Construction also took the lead in negotiating access with other interfaces working in the vicinity of the works. By taking a fully collaborative approach to this co-ordination, Global Rail Construction was able to provide Kier, Atkins and any outside parties with a joined-up solution for each and every site, throughout the many miles of railway track – this was vital, as many of the sites were running concurrently in order to maintain the necessary progress.

The collaborative effect of GRCL's approach not only extended to clients and third party interests; it also extended to its own workforce and those of its sub-contractors. This co-operation gave Global Rail Construction Ltd. the flexibility to pinpoint its logistics for delivery of materials and plant – allowing the works to stay firmly on programme.

Fostering this spirit throughout also allowed GRCL to boost resource when needed, during peak periods of activity, which helped to ensure that both safety and quality were never compromised.

The Benefits

When a resignalling 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 project managers and signalling engineers without doubt enabled solutions to be quickly and effectively formed – providing programme and cost surety.

Also, having a Principal Contractor acting as a sub-contractor provided the confidence to Kier, Atkins and Network Rail that GRCL's approach would be seamless with their own. This ensured that all eventualities were covered and that GRCL's involvement facilitated a high-quality project – one that met and exceeded the new and exacting specification for this contract.

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

The business has a high pedigree in training its staff of all levels, and invests in the future with a range of apprenticeships and a graduate scheme.

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.

Testimonial

“Global Rail Construction are a long-term supplier to Kier Signalling and were instrumental in the successful delivery of the Shepperton Branch phase of civil engineering works which forms part of the overall Feltham re-signalling scheme.

“Their team provided a collaborative, flexible approach throughout the works and responded to the high demands of the project.

“Works were delivered to programme with a good quality end product.

“We would be pleased to work with them again in the future.”

*Paul Cornelius
Contracts Manager
Kier Construction*