

CASE STUDY

Feltham Resignalling Phase 5 - GRIP 6-8 Signalling Installation

LOCATION: Feltham
 CLIENT: AtkinsRéalis
 DATE COMPLETED: November 2023 - July 2024



Introduction

Following several months of efficient planning and effective delivery, Global Rail Construction Limited (GRCL) has successfully completed Feltham Resignalling Phase 5, Works Package 1a, covering Signalling Installations, on behalf of partner AtkinsRéalis for Network Rail Wessex Capital Delivery.

Feltham Phase 5 consisted of 3No interlocking areas, with 3No fringes to adjacent signalling control centres, and the renewal of 2No level crossings. The overall programme of Feltham & Wokingham re-signalling project covers 18-year, five phase renewal of all signalling assets controlled from Feltham Area Signalling Centre (ASC) and Wokingham Signal Box (SB). The project will renew 9No Route Relay Interlockings (RRIs) with new centralised ElectroLogIXS Computer Based Interlocking (CBI) controlled from Basingstoke Rail Operations Centre (ROC), transferring control from the existing Feltham Area Signalling Centre (ASC), and renewing all existing lineside signalling infrastructure and remote interlockings with centralised interlockings from the new ROC.

GRCL's significant rail systems sub-contract encompassed the installation, termination and testing of new lineside equipment

including cabling, Location Case suites, AWS, TPWS, and the existing train detection system replaced with Frauscher Advanced Counter (FAdC) Axle Counter system and the subsequent recovery of all the old assets. The 2No electrically controlled Level Crossings were renewed to interface to the new ElectroLogIXS lineside equipment, replacing all Barrier Booms, Barrier Machines, Road Traffic Lights (RTL's) to an LED type. New electrical Principal Supply Point (PSP's) were also provided at Winnersh Triangle, and new Auxiliary Supply Points (ASP) were provided at Earley and Crowthorne. The PSP, ASPs and Functional Supply Points (FSPs) were implemented as a Class II based system managed by the Camlin Signet Auto Reconfigurable system.

Our collaborative delivery and high-quality workmanship enabled an incredible result, working on some of the busiest lines in the Southern region. Through a safe and solutions-based approach during this project, our signalling and power experts supported timely culmination and the successful commissioning of this newly signalled area.

Deliverables

Global Rail Construction Limited provided all Programme, Project and Site Management, Contractors Responsible Engineering, Skilled Installation Labour, Road-Rail Vehicles, Plant and Ancillary Materials to complete the works as a turnkey solution. This also encompassed Temporary Works Design responsibilities, Line Blocking, Planning and ALO arrangements, High Voltage Assessments, as well as the provision of Welfare and Waste/Resource Management. The full scope of Installation, Termination, Test and Recovery Works included:

- ① Axle Counters
- ① TPWS (TSS Loops)
- ① TWPS (OSS Loops)
- ① AWS (Electro)
- ① AWS (Perm)
- ① AWS (Supp)
- ① Signals (Main)
- ① Banner Repeater Signal
- ① Locs (excl Comms & PSP's)
- ① Tele Loc

- ① DNO
- ① FSPs
- ① Pts Marshalling Box (WMMB)
- ① TPWS Equipment Box
- ① Points Crank Handle Case
- ① ASPs
- ① Point Ends (Electrical Only)
- ① GPLS
- ① OFF IND
- ① TRTS
- ① Lineside Signage (Speed boards/Rear Clear Markers)
- ① Point ID Plates
- ① Fringe Works
- ① Guildford Area Signal Centre
- ① (ASC)/Signal Box
- ① Thames Valley Signal Centre
- ① BROC

Challenges and Solutions

During the works, GRCL encountered a number of issues that were expertly resolved.

The War in Ukraine

This impacted supply of TPWS cable, which, became unavailable due to a blockage at the seaports during the early stages of the war. GRCL set up a task force with AtkinsRéalis and NR to identify quantities of the same cable that other projects had procured, securing the required cable lengths from warehouses around the UK. Through negotiation, we agreed to use the cable on the premise that we would replenish the stock when our order arrived in the UK.

Signal Boxes and Operational Locations

During the works it was identified that there were a number of access restrictions for Feltham ASC, Wokingham Signal Box, Woking Signal Box, Acton Signal Box, Guildford ASC, Thames Valley Signalling Centre, Wimbledon and Basingstoke ROC. This specifically covered:

- ① Residential areas in the proximity to the railway, level crossings and certain RRAPs
- ① Station car parking at all railway stations within Feltham project area boundary

- ① Principal Supply Points and Substations
- ① Specific locations determined by individual phase CR-T's and PCIP's
- ① Signal boxes, signalling centres and Basingstoke ROC
- ① Relay Rooms with poor wire condition

The constraints these restrictions imparted on the execution of the Phase 5 works were managed by meticulous pre-construction activities including the provision of adequate and competent resources, programme and sequence planning with and regular staff briefings. This process was managed and controlled by GRCL's Site Management team aligning with AtkinsRéalis construction procedures and the through the provision of detailed WPPs and TBSs, to ensure access routes and safe egress was maintained throughout the works.

Testimonial

“AtkinsRéalis has worked alongside one of our key partners Global Rail Construction Limited throughout the last control period, and the Feltham Programme has been a highlight of our collaborative efforts. The commissioning’s were the result of our strong relationship and several years of hard work, culminating in one of the largest re-signalling commissioning’s in Control Period 6.

“Global Rail have had a focus on safety and quality throughout the delivery of the Feltham schemes, and fully engaged with AtkinsRéalis on the delivery of a comprehensive series of Safety Stand Downs and Initiatives; these leave a legacy around how these should be run and the environment that can be created to allow teams to be empowered to thrive and deliver. I have been particularly impressed with the work Global Rail have implemented around staff wellbeing and mental health; a real demonstration of how an idea, given the right environment and collective support, can be implemented and grow throughout delivery – I think this work had a truly positive impact.

“Global Rail has been a true collaborator throughout; learning from each other, working with each other, and coming together to support AtkinsRéalis delivering a product for Network Rail that significantly benefits the travelling public. The commissioning’s have been meticulously planned and there has been a drive to work together throughout the delivery of the project to overcome challenges along the way. We look forward to developing this relationship further through our ongoing collaborations.”

Gabriel Azevedo
Project Manager, Feltham
AtkinsRéalis