Feltham Depot for South West Trains

Fenix
RAIL SYSTEMS

Case Study 2021

GRIP 4 - 8

The Background

Feltham Depot is a new railway depot on the Waterloo – Reading line in the London Borough of Hounslow, West London, between Feltham and Hounslow stations. The location of the new depot is on the site of the historic Feltham Marshalling Yard which was a large yard in operation between 1918 and 1969.

The depot is used to stable the new fleet of 10-car Class 701 trains, with a maximum capacity of 100 cars distributed as 10 lots of 10-car trains in 10 siding roads. The depot features AVIS, CET and carriage washing facilities.

Feltham Depot is connected from the mainline by a new “Up/Down Arrivals” through loop which shall be constructed off the Down Main, around the 14 ½ MP. The existing mainline interlocking, Feltham RRI, was altered and a new interlocking, Harlington Road RRI, controlled from Feltham ASC.

The Mission

Fenix were requested to develop a cost effective and low maintenance operating control system which would provide safe operation and enable the operator the flexibility to control trains in and about the depot using a VDU.

The Project

Fenix Rail Systems work hand in hand with our client to reduce costs and exceed operational performance KPIs. Our aim is to provide innovative Depot Control Solutions which assists Depot Operators by reducing workload and increasing safety and efficiency within the train facility.

The modification consists of changing the human-machine interface from a Points Setting Panel to a VDU located in the new Feltham Depot Shunter's Cabin near the throat of the depot.

The system comprises of nine motorised trailable points systems operated from a central location with point position indicators to ensure points are proven locked and detected.

The point indicators are located line side and indicates to the driver the lie of the points and the route to be taken.

The system is simple, efficient and the shunter retains responsibility for ensuring safe train movements.

Scope of Works – Produced / Provided

Production

- Fenix Rail Systems were requested to design and deliver a bespoke, modified version of the Tie-FenLock 200 DCS specified by SouthWest Trains for controlling trains within the depot.
- Fenix are responsible for the complete process, our IRSE qualified specialists. Design, Install, Testing and commission of the entire Depot Control System.
- Developed the scheme from GRIP 4 concept through to GRIP 8.
- Easy system modification enables future depot expansion, layout or provision of additional equipment, buildings, or methods of working.

Delivery

- Tie-FenLock 200 System with modifications to accommodate the bespoke requirements
- Central control of points
- 9 Trailable Point machines
- Design of equipment cabinet and power supply
- The system enables monitoring of movements within the depot
- We provide a cost-effective solution that simplifies depot operations, providing a typical investment payback on the system within three years.

Standard Equipment Types

- Trailable 400-volt 3 phase AC Point Machines
- Control cabinet consisting of:
    - Points controllers
    - Position light indicator drives
    - Power supplies
    - Monitoring equipment
- Point Position Indicators (PPI) for each depot turnout
- Interface to Mainline Interlocking via human communication

Feltham Depot Control

The GRIP Process

Grip 4 – Single Option Development

Fenix Rail Systems planned the core document requirements for the scheme, based off the Arcadis Scheme Plans (for NR)

Grip 5 – Detailed Designed

Fenix Rail Systems produced the detailed design, including the equipment layouts, calculations and wiring diagrams.

Grip 6 – Construction Testing and Commissioning

Fenix Rail Systems worked with the Principle Contractor VolkerFitzpatrick to deliver the project, which was installed and commissioned successfully.

Grip 7 – Scheme Handback

Fenix Rail Systems completed full handback and training from all operatives including operator and maintenance staff over a 3-day period. The final records were updated and completed and returned to NR.

Grip 8 – Project Formal Close Out

Fenix Rail Systems formally closed out the project returning Health and Safety file completing lessons learnt with our client VolkerFitzpatrick.

The Results / Key Achievements

The Result

The Installation and Commissioning were undertaken under a multidisciplinary work site and environment. Fenix achieved successful completion with minimal disruption to other disciplines working onsite. Complete collaboration was achieved by planning and implementing a robust strategy and planned site activities. During implementation all test logs were answered within 48 hours leaving no outstanding issues before commissioning giving our client the confidence that the commissioning be undertaken fault free, resulting in our client being completely satisfied with the implementation process.

Key Achievements

High quality, safety conscious designs and expert advice were delivered and no incidents, accidents or close calls were reported during the site works. All design work was completed on time and within budget. Procurement and delivery of the signalling hardware was organised on a 'just in time' basis, this reduced the amount of storage required on site, making the whole process more efficient and productive. Fenix worked in partnership with several companies to achieve a successful outcome. Fenix completed full integration of the system into the existing infrastructure.

Client Testimonial

Phil Wood – Project Manager - VolkerFitzpatrick

"Well done to you and the team for the delivery, I have to single Fenix's project engineer for being such a good guy to work with on site, if we had your team for every sub-contract, my life would be a lot easier! We appreciate all of the hard work and effort to work to some tight timeframes from Fenix. I hope that the project up in Gosforth goes well for you guys and look forward to seeing the team back here mid Feb for the training."

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THANK YOU

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