

CASE STUDY

East Notts Modular Resignalling Project

LOCATION: Nottingham to Grantham and Nottingham to Newark Lines
CLIENT: Alstom
DATE COMMISSIONED: November 2016



Introduction

In April 2014, UK rail contractor Global Rail Construction Limited (GRCL) fought off stiff competition to be awarded the design and construction of the civil engineering scope of works (Grip 5-8), for the East Notts Modular Resignalling scheme on behalf of Alstom.

The remitted signalling renewals on Network Rail's East Midlands Route, consisted of the replacement of life expired mechanical signalling equipment, with Alstom's state of the art modular signalling concept.

This flagship project involved the use of Alstom's latest obstacle detection (OD) technology at 9 separate level crossing sites, on both the Nottingham to Grantham and the Nottingham to Newark lines.

The project was to be completed whilst adhering with two critical project milestones commissioning dates in March 2015 and November 2015, culminating in final test, handback and completion in November 2016.

The project was also cutting edge in its safe working processes, as it also became the first project in the UK to implement NR//L2/OHS/133 – Network Rail's brand new Code of Practice for Planning and Delivering Safe Work.

Global Rail Construction self delivered much of the work scope using their in-house civil and structural engineering teams.

The Deliverables

Global Rail Construction undertook all necessary surveys, including topographical and ground investigations and designed, self-delivered and commissioned the full Grip 5-8 civil engineering solution, in respect of the signalling upgrade at East Notts, which included:

- ① The full upgrade of 9No level crossings to suit the conversion of mechanical signal boxes into a new signal interlocking system supplied by Alstom. Global Rail Construction's specific scope included:
 - ① installation of signal post screw pile foundations;
 - ① supply and installation of mass concrete bases for 2No lightweight cantilever structures;
 - ① supply and installation of relocatable equipment building (REB) and level crossing equipment foundations, along with associated civil engineering works;
- ① supply and installation of signal post telephone walkways (SPT), precast bases and posts;
- ① supply and installation of lineside signage bases and posts;
- ① the removal and reinstatement of road surfacing, including all thermoplastic lining and signage in accordance with the necessary highway authority regulations and standards;
- ① delivery and installation via complex contract lift of 10No relocatable equipment buildings (REB);
- ① delivery and installation of 11No distribution network operator (DNO) cabinets and associated bases and;
- ① the provision of all handover and as-built documentation.

Challenges and Solutions

There were several challenges faced by GRCL during the works. The first was to develop a civils design solution at Grip 5 stage to incorporate a brand new level crossing obstacle detection system (OD).

Using years of civil engineering experience, coupled with the in-house knowledge of signalling installation and test engineering expertise, GRCL went to work to develop in conjunction with Alstom a workable design. This meant that the scheme had to put back into a Grip 4 stage, in order to re-select the best design option with Network Rail.

In doing this, the programme also needed to be re-phased into two new stages, Stage 1 Nottingham to Grantham was to be delivered and commissioned by November 2015 and Stage 2, Nottingham to Newark, by November 2016. Each stage was then broken down into three separate sub-programmes, advance works, pre-commissioning activities and then commissioning activities.

This involved meticulous planning of each location by Global Rail Construction, with every access, stakeholder and railway operational issue examined, to provide a bespoke solution in each of the eleven areas.

Resourcing works to a revised programme was also managed with aplomb by GRCL. The rail infrastructure contractor's ability to use and flex both its in-house resource

and those of their supply chain partners, kept the works on track, and highlighted the collaborative working ethos and one team approach of the whole project team.

The project was also the first for the implementation of Network Rail's new Code of Practice for planning and delivering safe work (PDSW).

The new system was set out to provide clarity around project accountability and responsibility and involved three important and new aspects for Global Rail Construction.

1. Proscient – new electronic permit to work technology
2. New roles and competencies for certain staff
3. New processes to support both the technology and the staff

Having a new set of principals introduced after their contract was let didn't deter Global Rail Construction, as they sought to implement them quickly and effectively.

Training was at the core of GRCL's approach, by providing a clear plan for the introduction of the safe work leader process. The company also addressed the new permit to work process by firstly assessing the operational, geographical and task based risks against the new COP and then providing and communicating the effective controls.

This allowed Global Rail Construction to provide seamless integration of the new standard whilst still being able to deliver the whole of the works to meet both the new project milestones and the final commissioning date.

The Benefits

Global Rail Construction thrives on challenging projects – in fact they are the very cornerstones of the company's offering.

They offer a full design and build service, which is tailored to the specific nature of any railway contracting project. Their ability to be flexible allows project variance, or even contractual changes to be absorbed with minimal fuss.

Having a multi faceted offering helps Global Rail Construction to see the bigger picture on both mainline rail and mass transit projects. GRCL's in-house divisions in civil and structural engineering, signalling and E&P always work in harmony, to provide the necessary solution and with the company's ability to provide both standalone discipline turnkey solutions, or a full multi-disciplinary offering for both mainline and metro rail infrastructure, it does help make them stand out from the crowd.

As a UK Principal Contractor with a large internal delivery resource and over 500 years of combined rail experience, Global Rail Construction has a deep-rooted understanding for providing a fully managed railway solution. Managing multiple stakeholders including the client, sub-contractors, suppliers, outside parties and the public at large, Global Rail Construction's rail pedigree is incredibly high, which allows the business to provide a meticulously planned and fully collaborative service on each and every occasion.

Global Rail Construction are very responsible in the communities that they serve and have a rich tradition that support internships, apprenticeships and graduate programmes which helps underpin the business for the future.

Testimonial

"Global Rail Construction were instrumental in the successful delivery of a complex and unique resignalling project.

"Their collaborative approach to the design and construction of the civil engineering work scope was impressive.

"In challenging circumstances, the team provided a meticulous approach to their works planning, provided high levels of health and safety assurance and delivered a quality job that met the project commissioning date."

Andy Whalley
Project Director
Alstom