



Scheme	C10656 Thameslink Depot Three Bridges
Location	Three Bridges
Client	Volker Fitzpatrick
Completed	July 2015
Value	£1m



Summer 2015 saw the arrival of the first of the new trains into the purpose built Three Bridges Depot at Crawley, one of the two depots being built for Siemens.

RJ Power Group fought off stiff competition, to secure the Electrical Traction Equipment (ETE) and Emergency Push Button (EPB) installation, test and commissioning works within the new Three Bridges Substation on behalf of Volker Fitzpatrick.

The contract was awarded to RJ Power Group in August 2014.

RJ Power Group, fully risk assessed, provided design input and then installed, tested and commissioned the ETE and EPB requirements at the depot which included:

- 🌀 Installation of 48No Track Isolation Switches (TIS)
- 🌀 Installation of 15,500m of 1000mm Positive Traction Cable
- 🌀 Installation of 6,000m of 800mm Negative Traction Cable
- 🌀 Installation of 2500m of 25mm Traction Cable
- 🌀 Installation of 8500m of Multi Core EPB Cabling
- 🌀 Installation of Buffer and Wheel Lathe Panel
- 🌀 Installation of Main EPB Indication and Control Panel and Three Remote Panel
- 🌀 Installation of 3No TIS EPB Marshalling Panels
- 🌀 Installation of 177No EPB Posts and Buttons
- 🌀 Installation of 1No bonding switch and 1No bonding and isolation switch
- 🌀 Design and Installation of Cable Support System over the Access Walkway Footbridge
- 🌀 All terminations to TIS, DC Breakers, Track connections and MET terminations
- 🌀 Fully Test and Commission the ETE, EPB and associated systems



The Challenges and Solutions

RJ Power Group were faced with challenging on-site design issues and sought to mobilise a small team to work collaboratively alongside Volker Fitzpatrick's design team, accessing accessible areas to provide important data to facilitate the progress of the design.

The cable containment over the main access footbridge, providing the links to both the down siding and the up sidings, necessitated the need for innovative design arrangements from RJ Power Group. The bridge which carried the 11kv ring main feeder cable for the depot as well as the 10No positive ETE cables and 6No ETE return traction cables, also required a fire segregation system to be designed and installed to prevent the circuits from damaging each other.

The length of cable runs and the accessibility of the cable routes required careful scrutiny by RJ Power Group's project team. A novel method of installing the ETE cables with bespoke horizontal cable spinners was devised by RJ Power Group. This allowed the longer cable runs to be installed by fewer staff both from the cable drums and into the awaiting cable containment, providing a safe and efficient working methodology.

An inventive approach using 110v capstan cable winches was taken by RJ Power Group in respect of a large number of cables that needed to be installed through buried cable ducting.

The Benefits

R J Power Group absorbed and managed effectively the project risks, fully owning the power deliverables, delivering the project with minimal support and providing a seamless and integrated service into Volker Fitzpatrick.

By holding a directly employed workforce of highly trained power engineers, RJ Power Group, were able to flex their resource to meet project change without affecting the key project dates.

Additionally, careful consideration was given to smaller emergency push button cabling, which was installed by hand into duct or onto cable trays.

Recognising the complexities faced by the client in design and sourcing the appropriate cabling and EPB button in respect of the systems for both sidings, RJ Power Group worked closely with their project team and provided design and product advice to ensure that the correct equipment and materials were procured, thus ensuring that key programme installation, test and commissioning milestones could be met with confidence.

The programme was originally due to be commissioned in three separate stages, however, due to the complexities around the design and also separate pressures from other on-site activities, the works were re-programmed to be completed over six separate stages. RJ Power Group's flexible approach allowed these changes to be effortlessly delivered, with a high degree collaborative interface throughout.

Additional works were also carried out successfully by RJ Power Group in respect of the commissioning of the Under Frame Cleaning building (UFC) interlocking system. This complex system, which took feeds from multiple locations to ensure that the interaction between all the various systems installed functioned correctly, was successfully completed as part of this project.

Flexibility around contract engagement, ensured RJ Power Group were able to complete the works using a fixed-price lump-sum model, which allowed their strong engineering delivery group, to proactively adapt to and manage the project complexities, meeting the programme - even with the volume of change - successfully commissioning the project, with zero defects to meet its grand unveiling.



Why RJ Power Group

RJ Power Group are an experienced power solutions delivery provider who work collaboratively with their clients and own supply chain as a reliable and trusted partner, providing exceptional expertise and proven project delivery.

Testimonial

“Despite some of the tough challenges brought about by late design and other disciplines, your team had a pragmatic and team spirited approach to help me hit the key milestones and commission the ETE bang on time. The most notable achievement for me was that the ETE works were defect-free at handover. That doesn’t happen very often and is a reflection of our strong relationship. Thank you for your support throughout.”

Martin Dobby
Project Manager
TRSP Three Bridges
Volker Fitzpatrick