



Scheme	Integrated Controlled Track Switches
Location	Strawberry Hill, Wessex
Client	Network Rail
Completed	April 2022



As part of the safer and smarter isolation strategy scheme in Wessex, RJ Power Rail Limited has successfully completed an Electrification and Plant (E&P) project to install and commission into service two integrated controlled track switches as the Principal Contractor.

The contract was awarded to RJ Power Rail Limited in March 2021 with Ecology and Environmental surveys taking place at the end of May, whereby the site was set up in the second week of June with welfare facilities and a storage compound at Fulwell Traincare Depot. Enabling works then commenced, covering civils construction, electrical and ETE works, followed by the delivery of the new Integrated Controlled Switches within a possession in September 2021. Final commissioning took place in April 2022 once the new DC module at Fulwell Substation had been commissioned into service.

Controlled Track Switches and NSCDs have been introduced to mitigate safety related issues as well as allowing both units to be in the same cabinet which will reduce the space requirements and installation costs. This project has been developed to improve the reliability and safety of the railway network and is supported by fault data and Electrification and Plant (E&P) Asset Policy.

PROJECT DELIVERABLES

RJ Power Rail Limited's scope of works included the following in sequential order is below:

- 🌀 Ecological survey and provision of a report
- 🌀 Installation of a new access gate to allow safe access and provision of a walking route to site for future maintenance of units – this avoided walking near Japanese Knotweed that was identified in ecological report
- 🌀 Relocation of the redundant CTS units
- 🌀 Breaking out of the redundant CTS unit bases
- 🌀 Installation of a raised platform and handrail - due to risk of future flooding
- 🌀 Installation 3No concrete bases for the 2No ICTS bases and 1No lineside equipment base
- 🌀 Installation of all PIR lighting
- 🌀 Installation of new a LCP base and route works near NSCD module
- 🌀 Delivery and installation of 2No ICTS units, 1No local control panel and all lineside equipment



- Installation of pilot boxes and 6No P2P units
- Installation of all cabling (1000mm DC, 240mm Negative, LV & 10 pair pilot)
- Pre-commissioning of units in collaboration with Telent, SELLA Controls and the ECRO
- Commissioning of 2No ICTS units and decommissioning of hook switches 216 and 217

CHALLENGES AND SOLUTIONS

Design review

When arriving on site it became apparent that the routes that were identified in the Approved for Construction (AFC) design had been utilised by a 3rd party from the time of design surveys to time of contract award. RJ Power Rail prepared a full report that was issued to the client identifying all the issues in the routes and several proposed solutions that could be undertaken to bypass all the pinch points.

Pre-commencement of installation stage

Due to this being the first ICTS ever installed, a site visit was arranged by Network Rail to the LCS facility in Hove to enable everyone to get a clear understanding of the challenges that maybe faced. During the visit it was noticed by RJ Power Rail that the fixing location for the units were at the bottom of the unit, underneath all the components. This would have been extremely challenging to gain the necessary access and could have led to delays in installation time. RJ Power Rail suggested making specialised brackets that were attached to the lifting points of the units, allowing them to be installed onto the outside of the cabinet. This was adopted and proved successful.

Environmental issues

RJ Power Rail Limited completed an ecological survey of the work site before any of the works took place. This identified an area of Japanese Knotweed that we were able to avoid with the installation of the new access gate and walking route. Additionally, the Japanese Knotweed was reported to Network Rail to allow them to add it to the Hazard directory.

TESTIMONIAL

"Following successful commissioning of the new Integrated Control Track Switches at Strawberry Hill, I am glad to be able to state that we have now completed the handover of the new assets into operational service. Strawberry Hill was chosen as the first site to replace the existing CTS's with the new integrated switches to mitigate safety related issues and to keep staff off the infrastructure whilst taking isolations. Thank you all very much for your hard work, collaboration and dedication through this extremely challenging project. It was certainly not easy, including some of the issues we had to deal with and with the interface with capital delivery projects and TPCMS, which were outside of our control. It was a pleasure working with you all on this element of the works and I hope to work with you again in the future."

Mark Richards
Scheme Project Manager
Network Rail Wessex Works Delivery

ABOUT US

RJ Power Rail Limited is a Full Trackside Principal Contractor to Network Rail and provides power engineering services for the rail industry. Its expert team has decades of experience covering all aspects of electrical engineering within high voltage electrification systems, traction power and industrial low voltage distribution systems across various regions within the UK.

RJ Power Rail Limited shares our clients' objectives in how we conduct ourselves and our business, which has allowed us to develop long-term relationships with both Network Rail, TfL and several Tier One contractors.