caunton
ENGINEERING

Steelwork for Rail

Doncaster Carr - IEP Depot

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Caunton Engineering is one of the UK's leading steelwork contractors, fabricating in excess of 40,000 tonnes per annum with a turnover in the region of £100m. Supported with over 50 years' experience we specialise in the design, fabrication and erection of structural and secondary steelwork, operating across all sectors of the construction industry.

Caunton Engineering's reputation is for engineering excellence in the Rail sector and working with Consulting Engineers on major developments.

We pride ourselves on our ability to remain agile and, as a result, offer a personalised service to our clients. The company is a Gold Status holder within the Steel Construction Sustainability Charter and is committed to delivering Net Zero by 2050.

Doncaster Carr - IEP Depot

Client: Hitachi Rail Europe
Main Contractor: Volker Fitzpatrick
Engineer: RPS
Tonnage: 1,000 tonnes

Caunton have supplied the structural steelwork for a new maintenance depot, wheel lathe and carriage wash buildings at the Doncaster Carr site in Doncaster.

Over a 1,000 tonnes of framing steelwork has been erected for main contractor Volker Fitzpatrick, whose client is Hitachi Rail Europe. This site is to be maintenance depot for trains procured under the Intercity Express Programme. Work started on site by Volker Fitzpatrick in the summer 2014 and by 2016 the depot was operational. Caunton supplied the steelwork for 3 new buildings, with facilities for maintenance, stores, offices, wheel lathe, train wash and cleaners accommodation. The maintenance building is over 300 metres long with a span generally of 55 metres and a height to eaves of 10 metres. The building houses various EOT cranes and encloses 5 lines of rail tracks.

Reading Train Care Depot

Client: Network Rail
Main Contractor: Volker Fitzpatrick
Engineer: Jacobs Babtie
Tonnage: 1,100 tonnes

Caunton were awarded the steelwork package by Volker Fitzpatrick for the £36 million Reading train care depot implementation works for Network Rail. This contract has been drawn up as part of the £850 million Reading area redevelopment which will include a new east chord to be built through the existing Reading train care depot, meaning the depot needs to be relocated. The existing depot was moved north of the Great Western Main Line, to the west of Reading Station. Volker Fitzpatrick has built a new train depot to modern equivalent standards, which is capable of maintaining and servicing the existing DMU rolling stock, as well providing future capacity for high level output specification and the Intercity Express Programme EMU rolling stock. The building has been designed to provide care and maintenance for both electric and diesel trains and Caunton provided two multi-level gantries which run the entire length of the building to facilitate this.

Construction of the train depot facilities began on the 1st January 2012 and was completed in August 2013. The site works programme was 37 weeks long, with only a 4 week break during August to allow for Reading Festival to take place without disruption, on land adjacent to the site.

There are 8 separate buildings on the Reading Train Care Depot site that were supplied and erected by Caunton Engineering, the largest of which is the main Train Care Shed. This forms a substantial portal frame 210 metres long by 37 metres span, with a ridge height of 11.2 metres above FFL. The steelwork was finished to a high specification. Network rail N2 glass flake specification.

The hot-rolled steel wright is 820 tonnes for the main shed which includes man-safe and overhead crane runway beams which runs the entire length of the building, plus a thousand rail support stools which carry 3 of the 4 rail tracks through the building.

Steel Framed Precast Plants - HS2

Client: HS2
Main Contractor: Align JV
Tonnage: 2,400 tonnes

Caunton Engineering have supplied 2,400 tonnes of structural steelwork for 2 major precast plants to be used in the building of HS2. These are the precast plants required to produce wall lining sections for the 10 mile long Chiltern tunnels and a second steel framed precast plant to be used to cast sections for the nearby Colne Valley Viaduct. The project in total comprises of 15 buildings and includes 2 tunnel precast factories, the tunnel workshop, warehouse and viaduct precast factory. The structural frames were mainly portal frames, with Caunton's Secondary Steelwork Division also supplying 40 tonnes of secondary steelwork, much of it galvanised, comprising crane access ladders, maintenance walkways, mezzanine flooring, handrails and stairs.

The precast frames were disassembled and the whole site was landscaped with material excavated from the tunnels and tress planted in order to blend it in with the surrounding countryside. Evidence of steel's flexibility and its particular sustainability qualities.

Caunton were employed by Align, a joint venture between Bouygues Travaux Publics, Sir Robert McAlpine and Volker Fitzpatrick.

Long Rock Train Care Depot Enhancement - Penzance

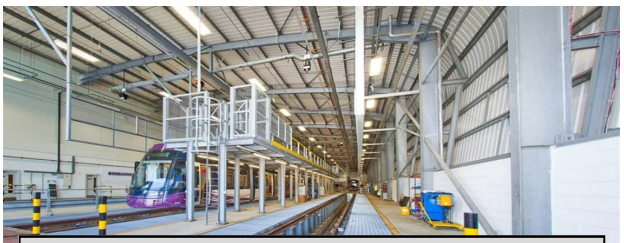
Caunton have benefitted from a rail improvement project which costed around £146.6 million and lead to the improvement of the Cornish rail network, as well as a signification 'Night Riviera' sleeper service upgrade. The company has supplied the steelwork for a new maintenance shed at Long Rock Train Maintenance Depot, half a mile east of Penzance railway station.

The main maintenance building included crane beams and their connections and required design by Caunton to execution class three (EXC3) under CE marking regulations.

Caunton has a strong track record in rail maintenance projects.

Main Contractor: C Spencer Ltd
Engineer: Alan Wood & Partners
Tonnage: 350 tonnes

Blackpool Tramway Starr Gate Depot



Client: Network Rail
Main Contractor: Volker Fitzpatrick
Engineer: Jacobs Babtie
Tonnage: 1,100 tonnes

Caunton worked on the £20 million depot to house 20 new Supertrams for Blackpool after the tramway's upgrade.

The building comprises of 4 high level and 4 low level roof units. Each high level unit alternates with a low level one - working down the building. The high and low level units in plan is 66 metres span and 12 metres wide.

The overall roof is supported by rafters which in the main are curved in elevation; comprising of 2 distinct curves in 2 opposite directions to create the appearance of a flowing wave effect imaginatively designed in order to reflect the proximity of the sea.

The rafters for both the high and low levels span directly between similar columns. The high level rafter comprises a single universal beam (albeit spliced) - the profile is a concave meeting a convex one. The low level comprises also of a single universal beam (similarly spliced) but the profile comprises in the first place a straight section, before meeting a first concave profile and final a convex. Numerically - the radii of the curvature for the high level is 100 metres and 115 metres and the low level 200 metres and 75 metres.

Manufacture of the rafters required highly sophisticated modelling, engineering and fabrication techniques.

Thameslink Depot, Three Bridges - Crawley

Main Contractor: Volker Fitzpatrick
Engineer: Hyder Consulting Ltd
Tonnage: 800 tonnes

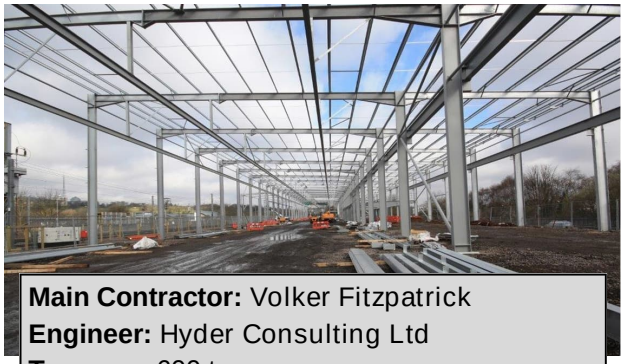
Caunton supplied and erected the steel frame for the train maintenance depot in Crawley, Sussex, working for main contractor Volker Fitzpatrick.

Caunton supplied the 800 tonnes of steelwork for 9 buildings - the main facility building, upside wheel lathe building, downside eastern train wash and UFC building, western train wash, downside amenity building, upside cleaners store, upside utilities building, tilgate CET pump house and shunters office and upside CET plant room.

Caunton are pleased to have worked for Volker Fitzpatrick on another train care projects, following on from their successful contracts with this major contractor at Hornsey, Reading and Southampton.

Thameslink Depot - Hornsey

Caunton supplied and erected the steelwork frame for a new train maintenance depot in Hornsey, North London for main contractor Volker Fitzpatrick. The project is part of the Thameslink programme which has seen capacity increased on north to south routes through central London between Bedford and Brighton and routes to Peterborough and Cambridge via Finsbury Park.



Main Contractor: Volker Fitzpatrick
Engineer: Hyder Consulting Ltd
Tonnage: 600 tonnes

Caunton supplied the steelwork for 3 buildings - the maintenance facility building, the southern train wash and under floor carriage facility. This new depot was built entirely on operational railway land.

The maintenance building is a monopitch portal structure generally 10.5 metres to eaves and 272 metres long by 21 metres wide. Crane gantry beams were also supplied to accommodate a 12.5 tonne EOT crane. There is a lean to office / warehouse structure - 208 metres by 12 metres. The southern train wash building, similarly a monopitch portal structure, is 65 metres long by 6 metres wide. Most of the steelwork is galvanised. Caunton also supplied and fixed the metal deck flooring for the offices and precast concrete staircase and a lift core.

In total the project required 600 tonnes of structural steelwork.

Caunton were pleased to be working for Volker Fitzpatrick on yet another train care project, following on from their successful contracts with this major contractor at Reading and Southampton.

Other Rail Projects Include:

- Siemens Train Care Facility - Southampton
- East London Line Train Care Facility

(Siemens Train Care Facility - Southampton)

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