



Rail infrastructure

2017 has been an exceptionally busy year as our business units continued their involvement in a large number of multi-year heavy and light rail infrastructure contracts across the country.

Ultimately, our approach is founded on working in partnership: with our clients and with our external partners, and on leveraging and bringing together the wide range of skills within VolkerWessels UK in order to deliver high-quality infrastructure solutions across the rail industry.

As a group we have continued to grow our share in the rail infrastructure industry working with clients that include Network Rail, Transport for London, Siemens, Hitachi Rail Europe and Transport for Greater Manchester.

The group has delivered major multidisciplinary engineering projects, including Manchester Metrolink, Rail Electrification Alliance (REAL) and East West Rail Phase 2 (EWR2), Cambridge North Station and other large project works including CP5 Panel Frameworks. These projects are delivered either direct to Network Rail, in partnership with VolkerWessels UK business units or with other construction companies.

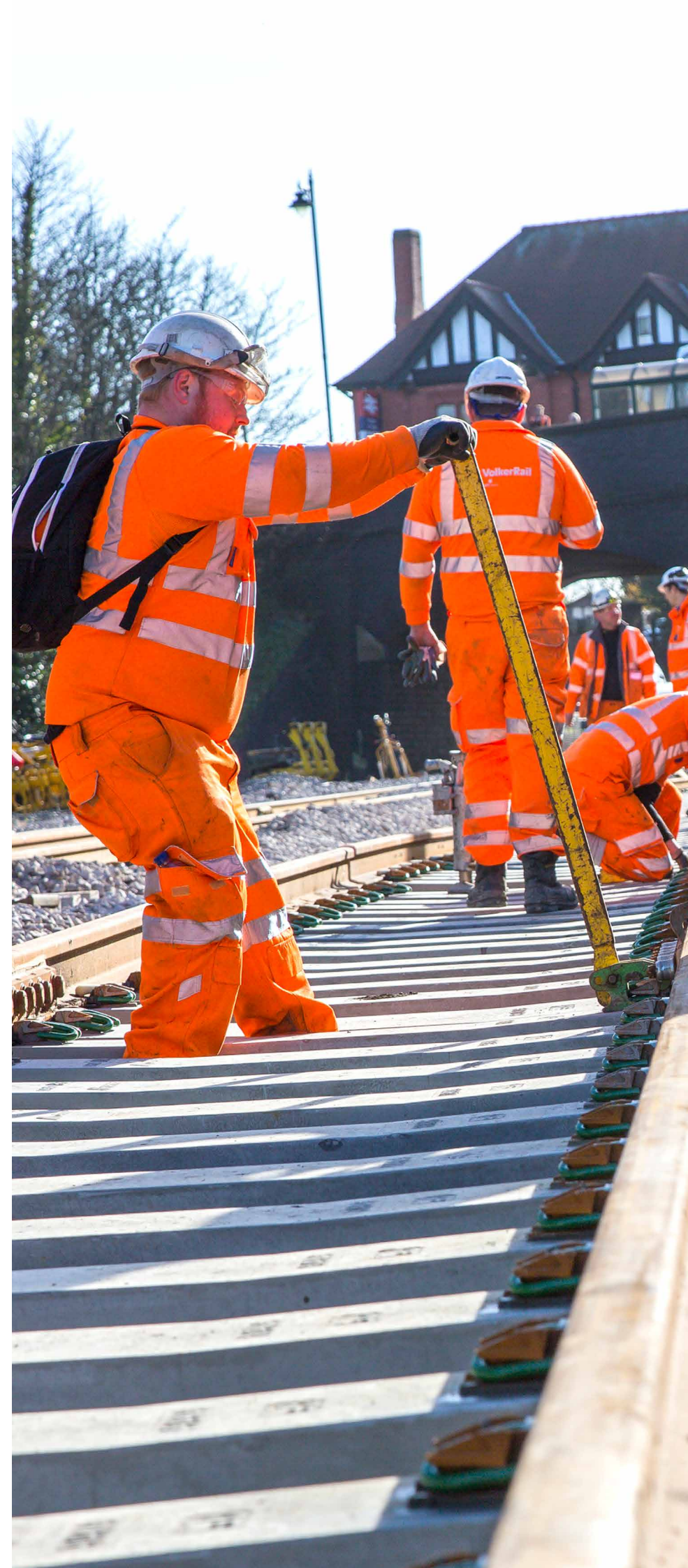
Both VolkerFitzpatrick and VolkerRail are recognised leaders in this sector allowing us to deliver unprecedented levels of quality, safe delivery and a collaborative approach.

VolkerFitzpatrick is one of the country's leading rail infrastructure civil engineers and rolling stock maintenance depot builders offering a consolidated and multi-disciplinary approach, with specialist civil engineering and rail divisions combining to provide the best solutions.

VolkerRail delivers rail infrastructure projects by providing electrification, high voltage power distribution, signalling, rail plant, welding, metro and light rail track construction, as well as renewals and maintenance specialisms.

VolkerGround Engineering and VolkerLaser also provide specialist services to the rail industry.

VolkerGround Engineering recently installed steel sheet piling for the Thameslink Hornsey depot and VolkerLaser delivered key repair and refurbishment works for several of the UK's rail overbridges.



 **VolkerFitzpatrick**

 **VolkerRail**

 **VolkerStevin**

 **VolkerLaser**



700,000

labour hours and
11 successful
possessions to
complete construction
at Cambridge North
Station



Completed
the biggest
infrastructure project
ever undertaken in
Manchester

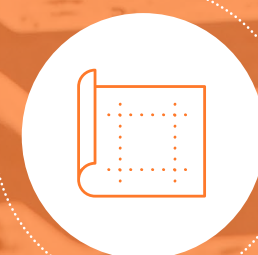


1.5 million

hours worked on
NWEP, **0** Accident
Frequency Rate,
0.22 lost time
due to injury and **0**
LTIFRs



Delivered over
1million man
hours of work and
20,000 machine
shifts as part
of the National
On-Track Machine
contract



Constructed **6**
new Hitachi depots

Cambridge North Station

VolkerFitzpatrick completed work on the new Cambridge North station for Network Rail. The station’s first commuter services began on Monday 22 May 2017. The new station is expected to handle 3,000 passenger journeys a day. With a 10,000 ft² footprint, Cambridge North features three platforms, along with parking for 450 cars and 1,000 bicycles. VolkerFitzpatrick began construction in 2015, starting with the realignment of the underused Chesterton sidings which opened up the brownfield site for development. Over the two-year lifespan of the project, it has taken months of meticulous planning, 700,000 hours of labour and 11 successful possessions to build the station on the operational West Anglia Main Line. VolkerFitzpatrick was supported by VolkerRail and VolkerHighways in the delivery of this project.

Doncaster Intercity Express Depot

In 2017, VolkerFitzpatrick delivered the new Doncaster train servicing, stabling and maintenance depot on Network Rail land. The depot serves Hitachi Rail’s new fleet of Intercity Express long-distance trains operating on the East Coast Mainline network. Construction work included the demolition of existing buildings and the erection and commissioning of an 11,000m² 10-car rail maintenance and storage depot. Also installed on site are a two-storey office, workshop and welfare facility. The depot is equipped with a raised maintenance road, platform level access and monorail hoists.

Collaborative Improvement Solutions at Craightinny

VolkerFitzpatrick’s rail division is undertaking improvement works to Hitachi Rail Europe’s Craightinny depot in Scotland, to service and maintain its fleet of Class 385 commuter trains, as part of the ScotRail Edinburgh Glasgow Improvement Programme. Hitachi appointed VolkerFitzpatrick to deliver the works which include installing a new high-level gantry, bogie crane, bogie lay down area and new train jacks, providing flexibility to service the existing trains and also accommodating the new fleet as it enters service. VolkerFitzpatrick overcame the challenge of constructing the client’s requirements around the operational train maintenance facility, with open communication and a collaborative approach.

Both Doncaster and Craightinny are exceptional examples of the way we play our part in improvement programmes for rail. We have been appointed by Hitachi Rail Europe to construct six depots. Hitachi needs to keep its new fleet of electric trains running in top condition, and continue using its existing fleet, while providing faster journeys and more seats for passengers.

HS2 Civils Contract

VolkerFitzpatrick, in alliance with Bouygues Construction and Sir Robert McAlpine, was awarded the Chilterns Tunnels and Colne Valley Viaduct main works civils contract by HS2. The scheme forms a key section of Phase One of the HS2 high-speed rail network between London and Birmingham. The joint venture, known as ALIGN JV, together with design partners Jacobs and Ingerop, will undertake the design and build of the main civils works of the 22km section of the high-speed rail line, running between the Colne Valley and the Chilterns. VolkerFitzpatrick and its partners boast an impressive track record of major project innovation, design and construction.

Manchester Metrolink

MPT, a joint venture of VolkerRail and Laing O’Rourke in consortium with Thales, is continuing its strong relationship with Transport for Greater Manchester (TfGM). Since 2007 MPT has been working with TfGM to develop the UK’s largest light rail scheme: Manchester Metrolink.

The biggest infrastructure project ever undertaken in Manchester is acting as a catalyst to create new jobs and opportunities. Phase 3 of the Manchester Metrolink ended in 2017, as did the final elements of the Second City Crossing and Deansgate-Castlefield works. Work also commenced in the year on the Trafford Park Line, which extends the Metrolink route from Pomona Viaduct to the Trafford Centre shopping centre and leisure complex, and is expected to complete in 2020.

Rail Electrification Alliance (REAL)

The REAL portfolio of projects continues to progress positively. VolkerRail is working with Network Rail, Siemens, J Murphy and Sons, Jacobs and TSP to form the Rail Electrification Alliance (REAL) and deliver Network Rail’s East Coast Main Line Power Supply Upgrade Project.

The system will provide a more intensive timetable of train services for both the Thameslink and Intercity Express Trains and see the introduction of new, faster, quieter and more environmentally friendly trains on the route.

The upgrade is a four-year scheme that sees VolkerRail working as part of the alliance to construct new substations, install over 600km of new cabling and renew overhead line equipment (OLE) and structures over 246km of the ECML, from Wood Green in London to Bawtry near Doncaster.

CP5 Southern Multi-Functional Framework Anglia Route

VolkerFitzpatrick has been working with its design partner Atkins to deliver the Network Rail southern multi-functional framework – Anglia route (MFF). The collaboration to deliver these works is known as the Anglia Route Collaboration (ARC).

The team is delivering a significant number of rail infrastructure improvements and enhancements including platform extensions, station enhancements, new footbridges and upgrades to bridges and embankments along the Anglia route. The team’s mission statement is: “Excellence through collaboration.”



11,000m²
10-car rail maintenance and storage depot.



Lea Valley Rail Programme

CP5 includes the £170 million Lea Valley Rail Programme, which is jointly funded by UK Government, the Mayor of London, the London Economic Action Partnership (now known as “LEAP”), Transport for London, and Enfield and Haringey Councils. In 2017, VolkerFitzpatrick removed an old 125-tonne bridge as part of this programme of works. The breakdown and lift-out of the bridge, spanning 30 metres over the River Lea Navigation, took place over a 49-hour closure. A new bridge will support extra track and two additional trains per hour running between Stratford and Enfield’s brand new station, Meridian Water, which will replace the existing Angel Road station.

Meridian Water Station

This new station, delivered by Network Rail and designed and constructed by VolkerFitzpatrick, will replace the Angel Road station in North London and is part of the area’s significant transformation. Once complete, the station will incorporate a sleek, modern design, three platforms, lift access, a footbridge and a retail space.

Hackney Wick

The installation of a pedestrian subway at Hackney Wick took place during the Easter weekend 2017. The 2,000-tonne concrete structure was driven into place during the extended weekend, following its construction on the land next to the station.

In an operation that took only four days, we removed the existing tracks and platforms and excavated the land underneath to create space for the subway. The subway was then driven into place using self-propelled modular transporters. The track and platforms were then rebuilt so that train services could run as normal on Tuesday.



125-tonne bridge
spanning 30 metres over the
River Lea Navigation removed
during a 49-hour closure

Network Rail’s Programme Framework and North Panel Framework

Network Rail is investing £38bn over CP5 to maintain and improve Britain’s railway. VolkerRail is completing a series of renewal projects as part of Network Rail’s £61m Programme Framework. The framework consists of a programme of enhancements and renewals to major assets within the London North Western and East Midlands routes. As part of the framework VolkerRail will deliver multiple projects between Crewe and Gretna Green.

The framework aims to bring improved safety, whole-life cost efficiency and delivery performance through collaboration. The largest project under the framework is a 650V signalling and power supply renewals scheme.

This two-year project will see the team renew 123km of signalling power equipment between Warrington and Burton and Holme. VolkerRail expertise has also been brought to bear in the delivery of a series of railway and civil engineering enhancements and renewals as part of Network Rail’s North Panel Framework, which has a combined value of £1.6bn.

The first project on the framework was delivered on the Bolton to Blackburn Line and saw VolkerRail install 4,000m of new track, extending the exiting passenger loop by approximately one mile in either side of Darwen station.

East West Rail Alliance Phase 2

Using the proven ability and strength of partners and a contracting model from Staffordshire Alliance, VolkerRail is delivering the design and construction of the East West Rail Phase 2 (EWR2) scheme in an alliance with Network Rail, Atkins and Laing O’Rourke. EWR2 is split into two phases and involves the upgrading and reconstruction of underused and mothballed sections of the railway linking the Great Western, Chiltern, West Coast and Midland main lines north of London and providing a strategic east-west route connecting key centres.

Once construction and commissioning is complete, new passenger and rail freight services will be re-introduced on 67 miles of the previously mothballed Varsity Line from Oxford to Bedford. The scheme also integrates with the proposed HS2 route in the Calvert area.

North West Electrification Project

VolkerRail completed vital improvement works on the Preston and Blackpool South to provide passengers with a better, more reliable railway. Over 11km of track has been upgraded, modern signalling equipment installed and trains running to Blackpool South are now controlled from Network Rail’s rail operating centre in Manchester, helping reduce delays and keep trains running on time. Work to upgrade and electrify the railway to Blackpool North will continue in 2018 while remaining overhead equipment, tracks, drainage and signalling equipment is installed.

This project is part of the government’s biggest investment in the rail network since Victorian times and means more seats, better connections, and more reliable journeys for rail passengers. The re-opening of the railway to Blackpool South, marked the completion of the first phase of Blackpool upgrade work.



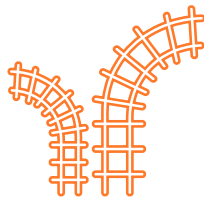
“Our work provides passengers with a better, more reliable railway.”



Installing a modern signalling system across

40%

of the London Underground network



Over 11km of track upgraded as part of the North West electrification project

National On-Track Machine Contract

VolkerRail is undertaking a seven-year framework contract for the supply of 11 on-track machines under the “National On-Track Machine Contract”. This contract will provide Network Rail with nine tamping machines, two ballast regulators, experienced machine operators and the management services of VolkerRail’s plant division. VolkerRail is using its extensive knowledge, expertise and capability in maintaining rail infrastructure to help Network Rail reduce the cost of track maintenance. The contract has seen VolkerRail deliver over one million man hours of work and 20,000 machine shifts.

TransPennine Route Upgrade

As part of the Great North Rail Project, VolkerRail is working as part of an alliance to deliver railway enhancements on the TransPennine Route between York and Manchester with a value of £3bn. The TransPennine Route Upgrade for CP6 aims to deliver faster, longer, more frequent and more reliable services across the north of England, from Newcastle, Hull and York towards Manchester and Liverpool via Leeds. As part of the programme, VolkerRail will work alongside West of Leeds Alliance, train operating companies, freight operating companies and other major stakeholders to deliver a series of enhancements on the route.

Croydon’s Tram Network

VolkerRail has been working with London Tramlink since 2012 to replace worn out sections of the Croydon Tram network. To date, VolkerRail has delivered more than 3km of renewals and re-railing across 12 different locations throughout the infrastructure on this scheme. With projects completed on time and to the satisfaction of the client, VolkerRail has been awarded a further three-year framework for embedded track renewals.

London Underground

VolkerRail is working with Thales, the global technology leader, in partnership with Transport for London, to deliver part of the Four Lines Modernisation (4LM) programme; installing a modern signalling system across 40 per cent of the London Underground network. VolkerRail is currently installing and testing signalling equipment on the two-year project, including copper and fibre cable, from Kings Cross to Monument on the District and Circle lines and from Aldgate East to Upminster on the Hammersmith and City and District lines. The company’s extensive knowledge of Thales’ communications-based train control system and London Underground’s signal engineering operations has been pivotal in ensuring a successful delivery during the scheme’s lifespan.