



SEP Rail *Services*



# Measuring, Modelling and Monitoring the UK's Railways

 [seprail.co.uk](http://seprail.co.uk)

 [info@seprail.co.uk](mailto:info@seprail.co.uk)

 01904 403 322

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# A message from our Group Director

**SEP Rail Services was founded in 2018 with a simple goal in mind – to become the UK’s leading rail surveying firm. An ambitious challenge, but one we’ve been steadily working towards ever since.**

As the business has grown, our focus has naturally evolved. Over the past eight years, we’ve expanded our capabilities and developed more innovative ways of delivering greater value to our clients. That evolution has led us to shift our attention away from rapid growth and towards consolidation, which is now proudly supported by the in-house expertise of our sister companies within the SEP Rail Group.

Quality, integrity and partnership have been at the root of every decision we’ve made. That shows not only in the standard of our work, but in the trust we’ve built with clients and the repeat business that comes from it. None of this – not one of our successes – would have been possible without the hard work and dedication of the truly gifted people who make up our team.

To those interested in working with SEP Rail Services, my door is always open.

I’m proud of how far we’ve come, and excited about where we’re heading next!

## Rikki Morrow

**GROUP DIRECTOR**

**SEP Group**



# Our clients *love* working with us.



# HS2



SOUTH  
RAIL  
SYSTEMS  
ALLIANCE



I cannot express enough my sincere gratitude for SEP Rail Services both in and out of hours - the sheer grit and determination they provide to make the most difficult situations happen in emergency situations in the rail industry, I have formed many friendships over the years in the rail industry, but SEP is one I rely on over and over again to make things happen.

**AARON BLAKEMORE**  
**CONTRACTS MANAGER, CML**



SEP Rail Services have proven many times that they're a reliable supplier to deliver high quality surveys. During a busy Christmas period they successfully completed 3 plain line renewal surveys at Six Mile Bottom LC, Shelford LC & Newmarket Rd. I continue to look forward to working alongside them.

**TOM TUTHILL**  
**ANGLIA SURVEY MANAGER, SOUTH RAIL SYSTEMS ALLIANCE**



SEP survey and design teams have been a pleasure to collaborate with on the Southern Renewals Enterprise CP7 track work bank. Consistently professional, helpful and reliable they've been a valued extension of the SRE track team and a credit to SEP.

**MATT LEWIS**  
**PROJECT MANAGER (SURVEY AND DESIGN), SOUTHERN RENEWALS ENTERPRISE**



We have been using SEP Rail Services on all Story track works throughout the UK and have been using their engineering services, design and drainage divisions over the last 18 months as part of the TfGM framework and wider work bank.

The 3 divisions that have been supporting us have been fantastic to deal with from start to finish - professional, punctual, cost effective and dynamite on site.

The support we receive from SEP Rail Services is invaluable and allows my own team to focus on the day-to-day jobs of running a busy framework, business development, and delivery of core works.

The last 18 months have been a pleasure and I look forward to the same support over the upcoming projects and years.

**JIM STEVENSON**  
**HEAD OF TRACK, STORY CONTRACTING**



SEP Rail Services have supported VolkerRail on a number of light rail and plain line / S&C renewals. The service provided has been consistent and fantastic throughout.

Each discipline from design, survey and drainage all have the same delivery ethos and go the extra mile to achieve. The team recently supported our biggest social value event to date as a valued supply chain partner.

**SAM ALLEN**  
**GENERAL MANAGER, VOLKERRAIL**

**AUREOS**

**STORY**

**QTS**



**VolkerRail**





## Rikki Morrow

**DIRECTOR, SEP GROUP**

[rikki.morrow@seprail.co.uk](mailto:rikki.morrow@seprail.co.uk)

A dynamic and visionary leader with a proactive management style, Rikki's focus has always been upon caring for and getting the best from his team.



## Tony Jones

**MANAGING DIRECTOR**

[tony.jones@seprail.co.uk](mailto:tony.jones@seprail.co.uk)

A time-served railway professional with a wealth of operational and planning knowledge, Tony has been part of the UK's rail sector for over 25 years.



## Dominic Keegans

**HEAD OF OPERATIONS**

[dominic.keegans@seprail.co.uk](mailto:dominic.keegans@seprail.co.uk)

A highly accomplished surveyor and manager, Dominic is responsible for our field operations, ensuring works are carried out according to our clients' expectations.



## Chris Lyon

**HEAD OF DELIVERY**

[chris.lyon@seprail.co.uk](mailto:chris.lyon@seprail.co.uk)

Bringing decades of site and delivery experience to the table, as our Head of Delivery, Chris manages the processing and delivery of all of our surveys.



## **Graham Dunning**

**HEAD OF PLANNING**

[graham.dunning@seprail.co.uk](mailto:graham.dunning@seprail.co.uk)

Leading the firm's in-house planning department, Graham's 20 years of rail experience and analytical nature make him a major asset to clients and colleagues alike.



## **Karl Norris**

**HEAD OF MONITORING & CIVILS**

[karl.norris@seprail.co.uk](mailto:karl.norris@seprail.co.uk)

Heading up all monitoring and civils projects, Karl joined SEP Rail Services in 2022 having spent the previous 16 years supporting Skanska, Sisk, and DYWIDAG.



## **Joel Bland**

**HEAD OF PROJECTS**

[joel.bland@seprail.co.uk](mailto:joel.bland@seprail.co.uk)

A time-served surveyor with almost 20 years of experience, Joel joined SEP as an Assistant PM in 2019, rising to the position of Head of Projects in 2025.



## **Lyndsey Nield**

**FINANCIAL CONTROLLER**

[lyndsey.nield@seprail.co.uk](mailto:lyndsey.nield@seprail.co.uk)

A highly qualified and experienced management accountant, Lyndsey became SEP's Finance Manager in 2020, being promoted to Financial Controller in 2025.



## Tim Hayes

**HEAD OF SURVEY**

[tim.hayes@seprail.co.uk](mailto:tim.hayes@seprail.co.uk)

A skilled surveyor and a highly regarded manager, Tim joined SEP Rail Services at its inception, rising through the ranks to become the firm's Head of Survey in 2025.



## James Wheatley

**SURVEY DELIVERY MANAGER**

[james.wheatley@seprail.co.uk](mailto:james.wheatley@seprail.co.uk)

A highly experienced surveyor, engineer, and delivery specialist, James supports our Head of Delivery, ensuring all surveys delivered meet our clients' expectations.



## Mark Radley

**TRAINING AND DEVELOPMENT MANAGER**

[mark.radley@seprail.co.uk](mailto:mark.radley@seprail.co.uk)

A hugely respected surveyor with more than 20 years' experience, Mark ensures our survey teams are properly supported and receive the best possible training.



## Vicki Ingram

**HEAD OF DRAINAGE**

[vicki.ingram@sep-drainage.co.uk](mailto:vicki.ingram@sep-drainage.co.uk)

Heading up our rail drainage team, Vicki is responsible for the timely delivery of all drainage works carried out across our clients.

# NATIONAL COVERAGE

With strategically located offices and depots across the country, we're within reach. From rapid mobilisation to on-the-ground support, our regional teams ensure we can respond quickly, efficiently, and in person, wherever and whenever we're needed.



# The UK's fastest growing independent rail group, we support contractors, consultants and more, measuring, modelling and monitoring the nation's railways.

## HOW CAN WE HELP?

Working hand in hand with our clients and partners, we've built our reputation upon the quality, reliability and flexibility of our service, developing innovative solutions to complex problems whilst making tomorrow's railway a better place. From initial surveys and investigations, to hand over and monitoring, we support our clients throughout the full life-cycle of their projects, providing the support and data they need to make truly informed decisions.

The result? The safe, efficient and compliant outcome our clients expect, saving time and money in the process.

## VISION AND MISSION

An ambitious but ethical business, we're guided, not only by a strategic vision, but also by a firm set of values that help determine who as well as what we are.

**Our vision?** To become the UK's leading multi-disciplinary rail group, the firm that people aspire to be a part of, be they employees, partners or clients.

**Our mission?** The following commitments explain just how we hope to realise that vision.

## VALUES We will...

1

Place the safety, health and happiness of our team above all else, especially profit.

2

Never stop investing in our people, putting their personal growth ahead of the company's.

3

Remain a truly ethical business, treating all stakeholders with fairness and integrity.

## WHY CHOOSE US?

- 01** Thanks to our 'one stop shop' business model, you no longer have to chop and change between multiple firms. Now, all of your survey, modelling, and monitoring requirements can be managed by one company.
- 02** We've filled our ranks with the most experienced, knowledgeable and capable professionals in the rail industry. Our continuous training and development programmes ensure they stay at the top of their game.
- 03** From the moment you make contact to the second your project is delivered, our team will deal with you efficiently, proactively and politely. We promise to treat you with the respect and consideration you deserve.
- 04** Each and every year, we deliver countless rail projects for clients throughout the UK, adding significant value to their schemes. It's no wonder that we've built a reputation for delivering on our promises.
- 05** We form genuinely meaningful relationships with our clients built upon a foundation of trust. With over 80% of our work being based upon repeat business, we must be doing something right.
- 06** A truly forward-thinking organisation, we take the wellbeing of our team incredibly seriously, providing both physical and mental health support programmes as well as a family-friendly benefits scheme.
- 07** We're constantly investing in the very latest survey technology and software. The result? Continual improvements in innovation and performance, delivering better data, faster and more cost-effectively than ever before.
- 08** From Network Rail infrastructure to the London Underground and DLR, our teams travel the length and breadth of the country, measuring, modelling, and monitoring the nation's railways.

4

Stay at the forefront of innovation, investigating and embracing new techniques and technology.

5

Treat all of our stakeholders with the utmost respect and consideration.

6

Never stop in our quest for improvements in the quality and accuracy of our deliverables.

7

Seek out new partnerships and alliances to add even greater value to our clients' projects.



# Railway Track Surveys

**From simple plain line to detailed S&C, every year our RISQS approved team surveys hundreds of miles of railway track for some of the rail industry's most recognisable firms.**

A dedicated rail specialist and the fastest growing company of its type in the UK, our growth is in no small part down to the hard work and integrity of our team. Whilst the accuracy of our track surveys is obviously critical, it's these two values that help define who we are as a business. With over 80% of our workload being based upon repeat business, we must be doing something right...

## THE TEAM

Headed up by Tim Hayes, our team boasts a number of time-served delivery and survey managers. All seasoned professionals, they've spent years adding value to some of the nation's highest profile railway track survey projects.

At any one time, they manage a substantial team of rail surveyors and processing specialists, as well as a variety of approved suppliers and subcontractors. All field personnel are PTS / OLEC1 / ICI qualified, also attaining COSS and SWL certifications, whilst all delivery surveyors have a minimum of ten years' experience in their field.



## CERTIFICATIONS HELD

- Personal Track Safety (PTS AC / DC)
- Overhead Line Equipment Construction (OLEC1)
- Industry Common Induction (ICI)
- Controller of Site Safety (COSS)
- CSCS

# CLIENTS AND PROJECTS

From primary rail contractors and design consultants to tier two contractors and smaller firms, we form long-standing and truly meaningful relationships with our clients, delivering precision railway track surveys on time and on budget. Just a fraction of those our team have been instrumental in delivering, notable track surveys have included...

- ..... High Speed 2 (HS2) Construction and Enabling Works
- ..... SRE Plain Line Surveys Framework
- ..... Midland Metro Alliance
- ..... Anglia, Kent and Sussex Plain Line Surveys
- ..... Network Rail Design Delivery Surveys
- ..... TransPennine Route Upgrade
- ..... Northumberland Line Project
- ..... S&C South Alliance
- ..... Old Oak Common Station
- ..... Core Valley Lines Project
- ..... Manchester Metro
- ..... Nexus Metro

## EQUIPMENT

Part of the SEP group, we've benefited from a close working relationship with our friends at SEP Geospatial. Thanks to this partnership, we're able to guarantee that our team have access to the very latest survey technology at a moment's notice.

### KEY EQUIPMENT

- Trimble S9 0.5" robotic total station
- Trimble GEDO IMS track measuring system
- Trimble R12 GNSS / GPS receiver
- Leica LS15 digital level
- Trimble TX8 laser scanner
- Trimble X7 laser scanner
- Trimble GX50 laser scanner
- Trimble TSC7 data logger

Whether that means a 0.5" robotic total station or a cutting edge HDS laser scanner, our unrivalled access to brand new equipment ensures our surveyors always come properly equipped.

Furthermore, by staying at the forefront of innovation when it comes to the techniques we employ, we're often able to improve safety and performance, all without increasing costs for the client.



# Trimble GEDO IMS Track Measuring System

**Remaining firmly at the forefront of survey technology, thanks to our relationship with our partners at SEP Geospatial, we're able to deploy the very latest innovations within the industry.**

Complementing our fleet of cutting edge 0.5" Trimble S9 total stations, we're also one of a small number of companies in the UK to have invested in the revolutionary Trimble GEDO IMS system.

The ultimate flexible and lightweight railway measurement system, the GEDO IMS employs a 'capture all' technique, making use of an Inertial Measurement Unit combined with both geodetic sensors and an ultra-high-speed laser scanner (the Trimble TX8). The system is capable of a range of methodologies for surveying and documenting assets within the railway environment.

We believe that the introduction of the GEDO IMS has been revolutionary for the rail surveying environment. The speed and flexibility of data capture combined with the ability to validate data has reduced the requirement for track access or 'boots on ballast' and has added significant additional benefits for our clients' projects.

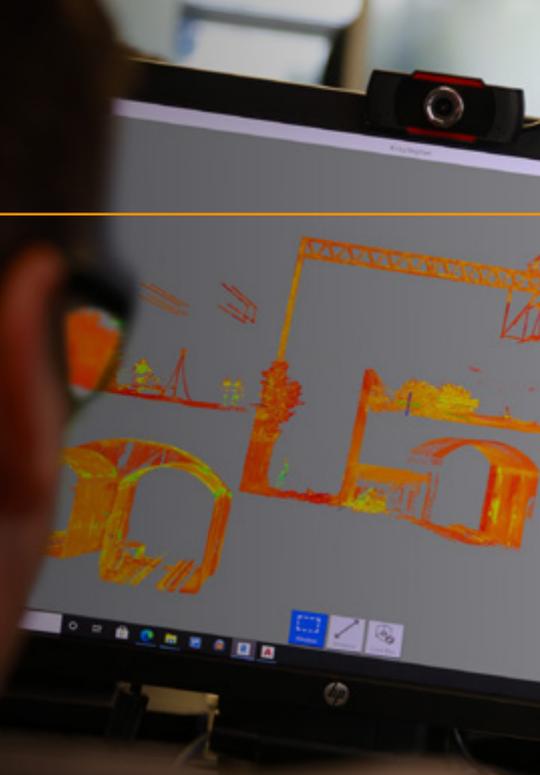
- The multi-sensor trolley system captures track position, cant and gauge in a single operation.
- No requirement for a total station during data capture, thus increasing productivity and reducing disruption on site.
- Rapid initialisation of equipment resulting in reduced down time and a dramatically improved data capture rate.
- Continuous high-resolution data collection for flexible analysis with GEDO Scan software.

## CASE STUDY



### Primrose Hill Tunnel, London

Working alongside our sister firm, SEP Rail Design, a team of surveyors headed to London, visiting the eastern section of Primrose Hill tunnels, located on the West Coast Main Line, just 1.5 miles from Euston. An extremely complex site, these tunnels carry a number of lines, snaking their way beneath the Victorian and Regency splendour of Primrose Hill.



Seeking to understand whether a new HV cable route would affect clearances to rolling stock, our client initially requested a conventional clearance survey. Given the location and the difficulties securing access, however, we suggested the Trimble GEDO IMS – a far more advanced, cutting-edge solution.

During a single possession, the three-man team surveyed more than 1km of track, performing structure gauging across three separate tunnels. The addition of two Trimble TX8 laser scanners then ensured that any off-track elements were captured to exactly the same level of detail. Geo-referenced with prism scanning globes and targets, the static scan information was then merged with GEDO Scan data to provide a comprehensive 3D scan cloud of the entire area.

## THE RESULT



In less than five hours we collected over **four billion** survey points, with deliverables including 2D elevations and sections, 3D plan drawings and wireframes, 3D solid models and hundreds of structure gauging profiles.

Not only did this approach deliver a staggering productivity boost, the 'capture all' technique also allowed our design partners to produce various design iterations without the need to revisit site.

- Internal quality control carried out in real time within the measurement process whilst still on site.
- The production of a point cloud as a by-product allows further features to be inspected, extracted and modelled in the future without returning to site.
- The 'capture all' survey method reduces or eliminates the need for costly return visits to site, making vast quantities of high-resolution data available for other elements of your projects.



# Topographical Surveys

**From depots and platforms to embankments, car parks and more, our experienced and professional land surveyors deliver precision topographical surveys of the UK's rail network in accordance with Network Rail Standards.**

At the heart of almost every construction or civil engineering project, a topographic survey is usually procured at the earliest stages of a job, providing information vital to both design and construction teams as well as a variety of other stakeholders.

## PRECISION

Not only valuable in isolation, a precision topographical survey can also be used to complement the results of other pre-construction works. From accurately plotting the findings of utility mapping or CCTV surveys to mapping the position of boreholes, a well-considered topo survey can be enhanced to provide significant added value to the majority of rail engineering projects.

Using the very latest survey equipment and backed up by a time-served delivery team, our surveyors hold all certifications necessary for working throughout the nation's railway infrastructure.



## CERTIFICATIONS HELD

- Personal Track Safety (PTS AC/DC)
- Overhead Line Equipment Construction (OLECI)
- Industry Common Induction (ICI)
- Controller of Site Safety (COSS)
- CSCS
- London Underground Basic Track Awareness (BTA)
- London Underground Site Person in Charge (SPC)
- Thameslink 'Pink Ticket' Certificated

# CLIENTS AND PROJECTS

Supplying accurate and user-friendly deliverables on demand, it's no surprise that we've rapidly become the 'go to' provider of topographic surveys to the nation's rail industry. From stations and embankments to access roads and depots, our team have worked on some of the largest and most recognisable rail projects of the past decade, including...

- ..... SRE Plain Line Surveys Framework
- ..... Midland Metro Alliance
- ..... Manchester Metro
- ..... S&C South Alliance
- ..... Anglia, Kent and Sussex Plain Line Surveys
- ..... High Speed 2 (HS2) Construction and Enabling Works
- ..... Network Rail Design Delivery Surveys

## EQUIPMENT

Thanks to our relationship with survey equipment specialists, SEP Geospatial, we're able to access the latest innovations in survey technology at a moment's notice, guaranteeing state of the art equipment is deployed to each and every site.

### KEY EQUIPMENT

- Trimble S9 0.5" robotic total station
- Trimble GEDO IMS track measuring trolley
- Trimble R12 GNSS / GPS receiver
- Leica LS15 digital level
- Trimble X7 laser scanner
- Trimble TX8 laser scanner
- Trimble GX50 laser scanner
- Trimble TSC7 data logger

- ..... TransPennine Route Upgrade
- ..... Various Liverpool Council Surveys
- ..... Old Oak Common Station
- ..... Core Valley Lines Project
- ..... Nexus Metro

Whether that's the very latest Trimble GX50 laser scanner or a 0.5" robotic total station, we'll only ever use the best and most appropriate tools to deliver your job.

And whilst cutting edge kit helps us guarantee the accuracy of your surveys, it also helps to boost reliability and efficiency, meaning less time on site, improved safety, and all without any increase in costs.



# UAV Surveys

**In areas of limited access or situations where time is of the essence, it may not always be possible to employ conventional methods of surveying.**

As one of just a handful of surveying companies whose UAV data meets Network Rail's Band 1 specification, therefore, our airborne survey solution allows us to carry out sub-5mm UAV surveys whilst needing dramatically reduced access to the infrastructure.

Covering a vast area in a fraction of the time of more traditional techniques, our six and eight rotor UAVs deliver productivity improvements. Capturing more data, more quickly and in greater detail than ever before, they ensure clients receive their deliverables not just on time, but often ahead of schedule.

What's more, being operated predominantly from a position of safety (bar the installation of ground control etc.), they can often be deployed during high traffic periods, which reduces the need for possessions, line blocks and safety critical staff.

## CAPTURE MORE, FASTER

When paired with cutting-edge drone technology, our Phase One XF IQ3 100 megapixel cameras allow for high-resolution outputs suitable for inspections, design validation and asset management. This combination of speed, safety, detail and flexibility means we can access hard-to-reach or time-sensitive areas without disrupting operations.

### KEY EQUIPMENT

- Matrice 350 RTK, six-rotor UAV with RTK positioning and hot-swappable battery system
- Altura Zenith ATX8, eight-rotor UAV with Altura Cardan gimbal and Altura ground control system
- Phase One XF IQ3 100MP camera system
- Hasselblad H6D-100c 100MP CMOS camera
- Zenmuse P1 high-resolution photogrammetry camera
- Zenmuse L1 LiDAR scanner with RGB camera
- DJI Terra photogrammetry processing software
- DJI Mini 2 UAV
- DJI Matrice 4E



# Gauge Clearance Surveys

**Working to Network Rail Standard NR/L2/TRK/3204 and supported by our sister firm, SEP Rail Design, we use advanced laser measurement equipment and software to deliver the clearance information your projects need to stay on track and compliant.**

Whenever changes are made to track, rolling stock or surrounding infrastructure, design consultants and railway contractors must ensure there is sufficient clearance for trains to pass safely.

## GAUGING SURVEYS

Our specialist gauging teams use a range of trusted instruments, including LaserSweep and Abtus RouteScan, to produce accurate profiles of structures such as tunnels, bridges and OLE gantries.

For more complex structures, we combine one of our Trimble GEDO track measuring trolleys with the Trimble GEDO GX50 - a high-precision kinematic laser scanner built specifically for rail. The GX50 enables rapid capture of detailed, high-density 3D data, making it ideal for clearance assessments and as-built documentation, and allowing for single or dual scanners, thereby increasing point density and reducing shadowing. The resulting models support BIM-compliant design workflows and provide cant, gauge and geometry information. Where required, a calibrated platform gauge will also be used for platform gauging and lower sector structures.

## GAUGING PROFILES

Using Structure Survey Editor and ClearRoute, our design team can accurately determine the distance between trains and surrounding structures, supplying profiles in .SC0 format (or tailored gauging reports) for use by design engineers. These structure profiles are essential in ensuring compliance after construction and help prevent clashes between trains and surrounding assets.

We can also carry out post-construction gauging surveys to verify the as-built position of key elements.



# OLE Surveys

**The UK's fastest growing railway surveying company, SEP Rail Services is also one of just a handful with significant experience of working with overhead line equipment.**

From height and stagger surveys and HDS surveys of infrastructure to utility mapping and control network installation, our OLE surveys are essential for any client seeking to undertake track or civils design works (including platforms and over bridges) on or adjacent to OLE routes.

Working in accordance with best practice and the relevant Network Rail Standard (NR/L2/TRK/3100 MOD 05), we use the very latest in survey technology to collect vital data relating to overhead line equipment.

What's more, by exploiting the capabilities of our cutting edge 3D laser scanners, it's often possible to capture the information required at speed and, potentially, without actually needing to access the track.

## NOTABLE PROJECTS

As one of the UK's most respected rail surveying firms, it's no surprise that we have a wealth of experience when it comes to OLE surveys.

Just a small selection of the electrification projects our team have worked on, the following should help illustrate our capability in this area...



## ELECTRIFICATION PROJECTS

- Great Western Electrification Project
- Midland Metro Alliance
- Manchester Metro
- High Speed 2 (HS2) Construction and Enabling Works
- TransPennine Route Upgrade
- Nexus Metro
- Core Valley Lines Project
- Midland Main Line Electrification (MMLE)



# Control Networks

**All projects, regardless of size or complexity, require the development of a reliable control grid to guarantee that all design and construction works relate to the same coordinate system.**

An accurate control network is the underpinning foundation of any survey. Put simply, if your control network is of poor quality, all survey, setting out, implementation and verification works that use that network will be of similarly poor quality.

The impact that a substandard control network can have on both project cost and programme cannot be overestimated. Using a variety of techniques and based upon a local grid, Ordnance Survey coordinates or Snake Grid, we can install fully-verified control stations and networks to millimetre accuracy, providing both you and your client with the utmost confidence in any survey data produced.

## CONTROL NETWORK PROCESSING SOFTWARE

- Star\*Net
- Trimble Business Centre
- n4ce

## CONTROL NETWORK INSTALLATION

Whilst robust control is obviously essential for the survey itself, it must also be fit for purpose for any engineering works that follow. With vast amounts of experience planning and building complex control networks (including primary, secondary and tertiary control points) our team use the very latest GNSS / GPS receivers, 0.5" robotic total stations and precise digital levels to ensure both performance and compliance with Network Rail's NR/L2/TRK/3100 survey standard.



# Utility Mapping Surveys

**Every time your team breaks ground, there's a risk of striking a utility. Our utility mapping specialists use the very latest technology to mitigate your risk on site, keeping you, your team and your clients safe.**

Indeed, by working in accordance with PAS128 and Network Rail Standard NR/L2/TRK/3100, not only do we keep your projects on track, we also keep you compliant in the eyes of both your client and the regulator.

## UTILITY SURVEYS

With up-to-date statutory record drawings having first been procured and consulted, professional utility surveyors will use EML (electromagnetic location) and GPR (ground penetrating radar) to accurately locate and map utilities and / or structures beneath your site.

Using either robotic total stations or GNSS / GPS receivers, the lateral position of all findings will then be captured and, when combined with both depth and diameter information, plotted onto a new or existing topographical survey. If applicable, any GPR data will also be post-processed and analysed before comprehensive and user-friendly reports are produced.

## WHAT CAN WE DETECT AND MAP?

- Electricity cables
- Gas pipes
- Water pipes
- Drainage systems (surface water and foul)
- Telecommunications cables (including fibre optics)
- Foundations
- Pile caps
- Voids (including inspection pits and basements)
- Railway track
- Other obstructions

# UTILITY SURVEY BENEFITS

Here's just a handful of the potential benefits that could be reaped by carrying out a thorough utility mapping survey...

- Minimise the chance of a harmful and costly utility strike
- Protect your team, other site users and / or the public from serious injury or worse
- Keep your projects on programme and on budget
- Excavate with confidence, safe in the knowledge that all due diligence has been carried out
- Safeguard your business' reputation
- Have access to accurate, up-to-date records – a snapshot in time of buried services on your site
- Reduce inconvenience to other stakeholders (other site users / trades, road users, businesses etc.)
- Remain compliant as stipulated by HSE and EA regulations

# WHY CARRY OUT A UTILITY MAPPING SURVEY?

These benefits aside, there are legal and regulatory reasons why carrying out a GPR survey is a good idea.

Organisations have a legal obligation to protect their employees, the public and all other stakeholders who could potentially be affected by their work. Indeed, the Health and Safety Executive (HSE) deems an appropriate level of utility mapping activity to be a mandatory precursor to any excavation.

Should you experience a service strike after choosing not to carry out a survey, therefore, you could be facing...

- A substantial insurance claim
- Financial loss due to programme slippage, compensation payments, fines, insurance excess and increased premiums
- Reputational damage and a loss of confidence
- Criminal charges (gross negligence, manslaughter or corporate manslaughter being the worst)

## NETWORK RAIL APPROVED SURVEY EQUIPMENT

- Leica DS4000 GPR
- Vivax Metrotech vLoc3-Pro receiver
- Vivax Metrotech Loc3 Series 25-watt transmitter
- Trimble 0.5" S9 robotic total station
- Trimble TSC7 data logger
- Trimble R12 GNSS / GPS receiver

## EQUIPMENT

When carrying out utility surveys be they on or off the railway, we only ever use Network Rail approved survey equipment.

From the seemingly humble (but incredibly powerful) cable avoidance tool to the very latest Stepped-Frequency Continuous-Wave GPR, we firmly believe in using the right tool, for the right job, in the right way.



# Monitoring Services

**When the safety of infrastructure is on the line, our monitoring teams deliver the data and insight needed to keep risks under control and projects on track.**

With a proven record across rail, highways, utilities, residential and environmental settings, we design and install bespoke monitoring systems that track movement, identify early warning signs and support critical decision-making.

Working in accordance with the relevant Network Rail standards, we provide both manual and automated solutions, tailored to the asset, the risk profile and the specific requirements of each project.

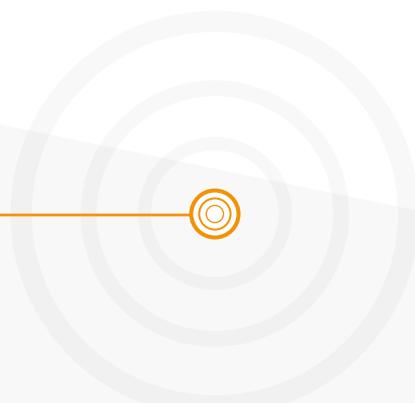
## KEEPING YOUR PROJECTS MOVING

Our systems support monitoring across a wide range of sectors and environments:

- Railway (track, tunnel and earthworks)
- Highways (settlement and heave)
- Bridges (3D movement and crack monitoring)
- Residential (subsidence, demolition, and basement excavations)
- Utilities (pipelines, reservoirs, and dams)
- Environmental (noise, dust, temperature, and vibration)

## WHAT CAN WE MONITOR?

- Displacement
- Inclination
- Rotation
- Temperature
- Vibration and noise
- Crack monitoring
- Load
- Strain



## WHY DO YOU NEED MONITORING?

Whilst many projects contractually require you to carry out a programme of monitoring, this should not be your primary consideration.

Even the slightest adverse movement or excess force could potentially have a detrimental effect upon your structures or even neighbouring properties. Seemingly minor structural damage can sometimes lead to unexpected bills, reputational issues, programme slippage, legal bills and more.

## MONITORING SOLUTIONS

- Automated Total Stations (ATS)
- Manual optical monitoring
- 3D laser scanning
- Wireless tilt sensors
- Optical displacement sensors
- Critical rail temperature monitoring
- Void monitoring
- Tunnel convergence monitoring
- Ground inclinometers and piezometers
- Groundwater and gas monitoring
- VW sensors

## OUR MONITORING PROCESS

01 Production of a Monitoring Action Plan

02 Installation in line with MAP requirements

03 Baseline monitoring prior to works

04 Ongoing monitoring, review and escalation

05 Decommissioning phase monitoring

06 Removal of monitoring equipment

07 Close-out reporting and handover

**This approach ensures every project is underpinned by clear thresholds, reliable data and defined actions, keeping safety front and centre at every stage.**



## CASE STUDY

Bough Beech, Kent  
Emergency Monitoring



**Following a landslide caused by poor weather, Dyer & Butler commissioned SEP Rail Services to provide reactive monitoring at Bough Beech, covering 220m of both track and earthworks. With ongoing deterioration across the embankment, 24/7 data and early warning capability were critical.**

Working in accordance with NR/L2/CIV/177, our team deployed a combination of manual and automated monitoring systems, including high-accuracy prisms and void meters installed directly through the failure zone. Monitoring Action Plans (MAPs) were developed and real-time alerting provided through an online platform.



## THE RESULT

Around-the-clock monitoring and live data allowed safe train operations to continue while design solutions were developed.

As ground movement increased, we were able to recommend safe line closure before passenger safety was compromised, allowing for a data-driven design to be delivered with confidence.



# Emergency Response Works

**When emergencies threaten the safety and performance of the railway, SEP Rail Services, alongside the wider SEP Rail Group deliver a rapid, coordinated response that clients rely on to keep operations moving.**

From landslides and drainage failures to storm-damaged vegetation, our teams are trusted by principal contractors, consultants and asset owners to deliver fast, decisive support, often before the full extent of the issue becomes apparent. With over seventy emergency remits attended since 2023, we've become one of the UK rail industry's go-to firms for dependable emergency response.

## FIRST CALL TO THE FINAL HAND-BACK

Emergencies demand more than just speed. They require structure, coordination and technical accuracy. That's why we've built a proven, step-by-step response system, powered by our in-house expertise and supported by specialist teams across the wider SEP Group.

# OUR EMERGENCY RESPONSE WORKS SERVICES

## 01 Immediate mobilisation

The moment you get in touch, we act. A dedicated SEP Rail Services project manager becomes your single point of contact, coordinating resources, liaising with the principal contractor and pulling the right people into place from the very beginning.

## 02 On-site surveys and safety assessment

Our engineering teams conduct immediate surveys, assessing damage, identifying risks and putting critical safety controls in place. This initial assessment underpins every decision made from that point onwards.

## 03 Ground investigations and structural support

SEP Geotech specialists arrive quickly to carry out in-depth investigations, from boreholes and soil testing to structural inspections. Working alongside our rope access experts at SEP Culant, they assess earthworks, embankments and slope stability.

## 04 Environmental safeguarding

SEP Ecology step in to ensure that any emergency works remain compliant with environmental legislation. Whether it's checking for protected species or managing sensitive vegetation, they keep your projects on the right side of regulation.

## 05 Real-time data for smarter decisions

Using the latest digital tools and survey hardware, SEP Rail Design begin data processing and optioneering right away. Their models and insights help shape safer, more stable design interventions, all tailored to the situation at hand.

## 06 Full engineering delivery

From setting out to final hand-back, SEP Rail Engineering take the lead on delivery. Working closely with SEP Rail Design, their team ensures all works are safely executed, accurately recorded and signed off by accredited professionals.

## 07 End-to-end support, integrated and accountable

Throughout the process, real-time data flows across every team. Decisions are made quickly, backed by evidence, with safety and efficiency always front of mind. From the first call to the final sign-off, you get more than just response - you get the full strength of an integrated support system.



## CASE STUDY

### Colhayne Lane Emergency Response

When a major landslip threatened the West of England Line, SEP Rail Group was called upon to deliver emergency support. Within hours, we mobilised, transforming a reactive monitoring brief into a full pre-construction and design solution, incorporating the skillset of the whole SEP Rail Group.

#### THE CHALLENGE

Access was limited to a narrow bridge with a three-tonne weight limit, which meant plant needed to be broken down and hand-carried into site. The area's ecological sensitivity, home to nesting birds and hazel dormice, added further complexity, requiring precise planning and environmental oversight.

#### OUR RESPONSE

- **SEP Rail Services** led emergency mobilisation, topographical survey and safety-critical staffing under live line blocks.
- **SEP Monitoring & Civils** installed real-time manual and remote monitoring to track movement.
- **SEP Rail Design and SEP Geotech** collaborated on embankment stabilisation and drainage schemes, supported by ground investigation.
- **SEP Culant** cleared vegetation, and coordinated closely with SEP Ecology, who advised on exclusion zones, nesting bird checks and compliance with dormouse regulations.
- **SEP Drainage** identified a collapsed culvert, feeding critical insight into the long-term solution.
- **SEP Rail Engineering** provided CRE-T support throughout.

All design, ecological, and survey works were completed in just one week, culminating in a final scope signed off three days before a 52-hour possession.

#### THE RESULT

Gabion baskets and mechanical anchors were installed during the possession, stabilising the slope ahead of schedule, under budget, and without safety incidents. Over twenty site staff and five senior managers coordinated delivery across one of the most logistically and environmentally challenging sites we've worked on. The project has since been shortlisted for *Project of the Year* at the 2025 CN Specialist Awards.



# Access Planning

**As with all of our clients, we strongly believe that every staff member must return home safely after each and every shift. From our perspective, this begins with detailed planning and preparation.**

With almost one hundred years of combined planning experience – and with a thorough understanding of NR/L2/OHS/019 – our in-house planning team provides a comprehensive, end-to-end railway planning service that’s fully in line with both Network Rail and RISQS requirements.

Covering all aspects of planning, our combination of knowledge, experience and competitive pricing helps us tailor our offering to the unique requirements of each client, site or project, providing a single point of contact for all deliverables.

- Daily remote / hybrid secondment planning for clients
- Strategise the best access options for project delivery
- Worksite entries for possessions via PPS portal
- Comprehensive possession scheduling with live tracking
- AC and DC isolation planning
- Train planning with NROL3
- Attendance at Network Rail planning meetings
- Participation in works management meetings
- Line blockage submissions via Railhub
- Digital safe work packs with RM sign-off
- Task briefing sheets
- Work package plans
- Sentinel approved person in charge and responsible managers
- Fully functioning planning team consisting of SSOW / COSS / PC / ES



## BIM / Revit Support

**As demand for BIM-compliant projects increases, so does the pressure on surveying firms to deliver. Our BIM team supports other firms, either complementing their existing teams or becoming their BIM department altogether.**

Using the very latest software and technology, we digitise and model point clouds according to your project's specification. Whilst we can work with existing point clouds, our own HDS team capture high quality data using our fleet of 3D laser scanners. Unlike more traditional methods, HDS allows us to collect vast quantities of data in a short time frame, reducing time on site and eliminating the need for costly revisits.

Once captured, our modelling team export the data, processing it using cutting-edge BIM software to produce incredibly detailed 3D models of your structures or assets. What's more, thanks to the amount of data available and the flexibility of our software, we can also extract more traditional deliverables such as elevations, floor plans and sections with ease.

### SCAN TO BIM PROJECTS

- Railway and civil engineering
- Refurbishments and renovations
- Demolition
- Facilities upgrades or maintenance (including M&E, HVAC, lift installation etc.)
- Heritage
- Visual impact and clash detection assessments



### BIM SOFTWARE

- Trimble RealWorks
- Trimble Business Centre
- Revit
- N4ce
- AutoCAD Civil 3D
- Descartes

We work for a broad array of clients throughout the railway, civils and construction industries, supplementing their existing BIM resource wherever necessary. Indeed, our point cloud modelling (or scan to BIM) services are perfect for any organisation requiring a 3D model for design or verification purposes.



# Drainage Services

From Jet-Vac cleaning and CCTV surveys to confined space entry and emergency rescue, our specialist drainage team provides an unparalleled, 24/7 service to the rail, construction and civils sectors.

With a fleet of modern vehicles and the very latest technology, we assess and resolve drainage issues throughout the UK with minimal disruption and inconvenience, and all whilst working in line with NR/L2/CIV/005. We also provide a range of complementary services, supplying the information and confidence you need to make better-informed decisions about your projects.

## SURVEY & INVESTIGATION SERVICES

- ✓ CCTV Surveys (inc. off road)
- ✓ Floating CCTV Surveys
- ✓ Pollution Investigations
- ✓ Connectivity Surveys
- ✓ Asset Enabling Packages
- ✓ Underground Utility Surveys
- ✓ 3D Laser Scanning
- ✓ Sonar Surveys
- ✓ Drone Surveys
- ✓ Mapping and Reporting
- ✓ GPS - Topographical Surveys
- ✓ Asset Surveys of Associated Drainage Structures

## CLEANING & MAINTENANCE SERVICES

- ✓ Jetting and Vacuumation
- ✓ Jet-Vac Super Recycling Tankers
- ✓ Jet-Vac Recycling Tankers
- ✓ Jet-Vac Tankers
- ✓ Gully Tankers
- ✓ High Pressure Water Jetting (HPWJ) Van Pack Units
- ✓ Off Road Tracked Remote Jetting Reels
- ✓ Off Road Tracked Jetting Units



## REPAIRS, REMEDIATION & RENEWAL SERVICES

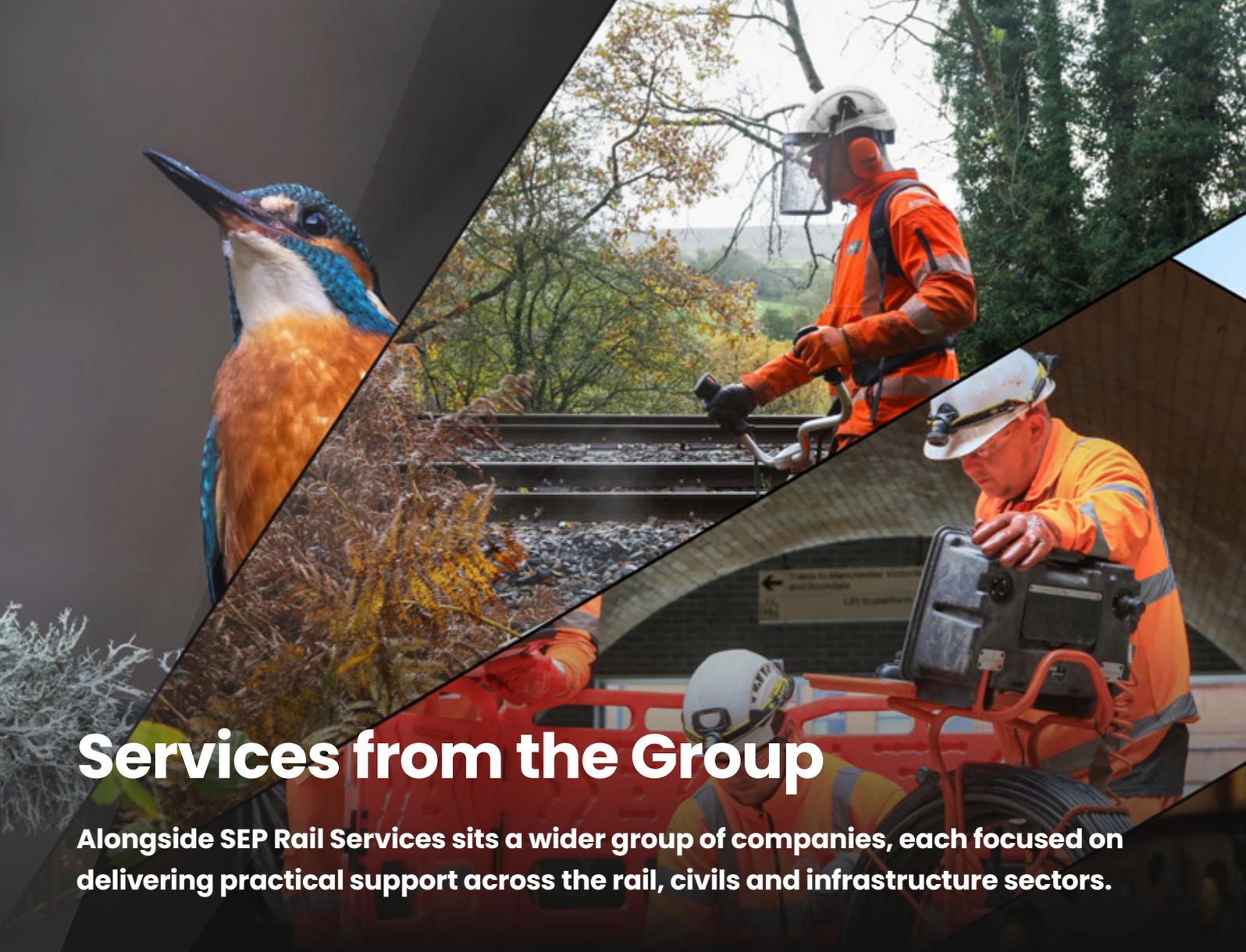
- ✓ Drainage and Sewer Rehabilitation - No Dig Innovation
- ✓ Cured In Place Pipe Lining (patch and full length)
- ✓ Robotic Cutting

## CONFINED SPACE ENTRY & EMERGENCY ARRANGEMENT / RESCUE SERVICES

- ✓ Confined Space Entry Survey Teams - High Risk Trained
- ✓ Confined Space Rescue, Emergency Arrangements - Management / Rescue Teams
- ✓ Water Rescue Teams

## ENVIRONMENTAL SERVICES

- ✓ Waste Management and Disposal
- ✓ Pollution Prevention Plans
- ✓ Pollution Mitigation Controls (supply and install)



# Services from the Group

Alongside SEP Rail Services sits a wider group of companies, each focused on delivering practical support across the rail, civils and infrastructure sectors.

**From engineering and design to ecology, drainage, rope access and ground investigation, the SEP Rail Group provides the technical expertise and dependable delivery needed to keep complex projects running smoothly.**



Specialist drainage support across inspection, jetting and repair, combining technical expertise with leading equipment to minimise downtime and maintain compliance.



Fast, practical and dependable ecological consultancy that prioritises compliance and keeps projects moving from early planning stages through to approval.



Robust monitoring systems backed by experienced setting-out engineers to reduce risk, protect assets and prioritise safety. Every detail is aligned precisely with site designs, ITPs, budgets and programmes, keeping delivery on track and building confidence at every stage.



Smart, safe and sustainable design solutions across track, civils, drainage, gauging and geotechnical, all led by an experienced in-house team of CREs, CEMs and chartered engineers.



Full project lifecycle support that strengthens planning, delivery and compliance, with specialist expertise in engineering management, CRE and CEM duties, AMP planning and asset assurance.



Comprehensive ground investigation, environmental monitoring and consultancy, with services including boreholes, trial pits, lab testing and full Phase One and Two reports.



Safe and efficient height access solutions and vegetation management delivered nationwide by IRATA-certified technicians and fully qualified arborists.



# Built for rail, trusted across industries

**Whilst our roots lie in rail, our capabilities stretch far beyond the tracks. Today, we support clients across a wide range of sectors, solving challenges, reducing risk and safely delivering in some of the UK's most complex and regulated environments.**

## **Highways**

Whether it's a new road scheme or improvements to the existing network, we deliver accurate data and on-site support, helping you work safely and efficiently around live carriageways and complex infrastructure.

## **Residential**

From early-stage surveys to ecological and drainage support, we help developers and contractors to keep their projects moving. Our planning, permitting and delivery experience makes us a trusted partner for both single-plot builds and large-scale housing developments.

## **Waste & Clean Water**

We provide a range of survey, access, drainage, engineering and monitoring services for waste and clean water schemes - including CCTV surveys, pipe condition assessments, confined space entry and rehabilitation works. Our work supports both emergency response and planned maintenance, reducing risk and improving asset reliability.

## **Petrochemical**

Operating in high-risk, regulated environments, we provide the safe and compliant drainage, GI and access support required to keep your petrochemical operations running.

## **Industrial & Environmental**

From asset inspection and decontamination to ecological consultancy and structural monitoring, our in-house team mobilise quickly, keeping your operations safe, compliant and cost-effective.



## Environment Agency

We support EA projects with ecological assessments, monitoring, GI and surveys. From flood defence works to infrastructure upgrades, we ensure that developments are safe, sustainable and fully compliant.

## Canal & River Trust

From bankside stabilisation and vegetation clearance to surveys and inspections, we help protect and maintain the UK's waterways, keeping assets safe, accessible and resilient all year round.

## Domestic

We deliver safe, cost-effective drainage, ecological and survey services for residential homeowners, developers and contractors, providing straightforward support and fast turnarounds for your projects.

## Energy

We provide survey, engineering, ecological and monitoring support to traditional and renewable energy schemes, helping to deliver safe, efficient progress on energy infrastructure at every stage.

## Oil & Gas

We deliver asset surveys, structural inspections, confined space work and access solutions to the oil and gas sector, focusing on safety, planning and data integrity to ensure our clients meet their obligations.

## Shipping

Equipped to work around tidal conditions and complex marine infrastructure, our teams support ports, harbours and shipyards with drainage surveys, access inspections and ground investigation services.

## Manufacturing

We support manufacturers during shutdowns, maintenance or expansion works, providing drainage, decontamination, inspections and access services to keep their facilities running safely and efficiently.



Rikki is a delivery machine. He was the driving force behind Colas Rail's Survey team expansion growing a relatively small part of the business into a circa £5m turnover business unit. I believe Rikki had the ability to grow the delivery capability of his team because he is respected by the people that he has worked with and they are happy to join him wherever he is. He is delivery focused and will do his upmost not to let his customers down.

**DAVID VAMPLEW**

**HEAD OF OLE PROJECTS, SIEMENS**



From a track monitoring perspective, the support provided to our projects by Karl Norris of SEP Rail Services is exemplary. His proactive approach and expert oversight are invaluable, ensuring critical monitoring is managed with utmost diligence and skill.

Crucially, we do not view SEP Rail Services as just a contractor. Their team operates as a seamless extension of our own, fully integrated into our project teams. This partnership approach fosters trust, enhances communication, and delivers outstanding results. We are proud to work with them.

**PAUL HURKETT**

**CONTRACTS MANAGER (RAIL & AVIATION), M GROUP**

 **VolkerFitzpatrick**



**SYSTRA**



**LIVERPOOL**

Unit 3 Hurricane Court  
Liverpool  
L24 8RL  
**info@seprail.co.uk**  
**01904 403 322**

**MIDDLESBROUGH**

Brunel Road  
Skippers Lane Industrial Estate  
Middlesbrough  
TS6 6JA  
**info@seprail.co.uk**  
**01904 403 322**

**SEVENOAKS**

6 Invicta Business Park  
London Road  
Wrotham  
Sevenoaks  
TN15 7RJ  
**info@seprail.co.uk**  
**01904 403 322**

**WIDNES**

3 Pitt Street  
Widnes  
WA8 0TG  
**info@seprail.co.uk**  
**01904 403 322**

**YORK**

Unit 13  
Independence House  
Millfield Lane  
Nether Poppleton  
York  
YO26 6PH  
**info@seprail.co.uk**  
**01904 403 322**

**YORK**

Studio 5  
Incubator Offices  
Marlborough House  
York Business Park  
York  
YO26 6RW  
**info@seprail.co.uk**  
**01904 403 322**

**KNOWSLEY**

Bradman Road  
Knowsley Industrial Estate  
Kirkby  
L33 7UR  
**info@seprail.co.uk**  
**01904 403 322**



