

CUSTOMER

Network Rail- Wales and Western Construction Services, Off Track

PROJECT

Construction of access platforms

SOLUTION

Trimble Catalyst, TDC600 Data Logger & KOREC's Capture Pro software (Rail)

Driving efficiency through innovation for a tenfold ROI on Trimble Catalyst

‘Simple and useable’: How Wales and Western Construction Services, Off Track (Western), are achieving a tenfold ROI on their Trimble Catalyst systems whilst also increasing the quality of their work.

As the Scheme Project Manager for Construction Services Off-Track (Western), Samuel Huish-Davies oversees all lineside projects within the Wales and Western area including the renewal of access points and crossings. He’s also responsible for ensuring every project is carried out with maximum efficiency and in compliance with Network Rail’s engineering standards.

With the publication of CP7, Network Rail has underlined the importance of running a safe, reliable and efficient railway whilst working as effectively as possible and achieving ‘more for less’. It is these factors that underpin how Sam and his small but busy nine person team tackle each access point job on the Western route.

Maximizing output and quality

For Sam, driving efficiency through innovation is an important factor in how he delivers on Network Rail’s aims. Particularly, since the last two years have seen the volume of work delivered by his team more than double due to the introduction of technology, the quality of the team’s work, and changes in budgets and control periods. His team are now the sole deliverers of access points on Western routes, and this has seen their CP6 budget for fifteen access points per year more than double to a current target of thirty-five. Aware of current labour costs, Sam felt that if he could reduce the amount of time on site and use labour more efficiently, then significant ‘more for less’ gains could be made.

One of the most time-consuming challenges the team faced was the accurate positioning of the rail access platforms. Sam felt if they could set out their drawings more accurately, they could overcome many of the site challenges that slowed them up and also deliver a job of even higher quality.

Innovative workflow for faster setting-out

One of the main challenges is that the site team can easily install the top access platform using a gate as a reference point when they first arrive on site. However, once they move away from this reference point, the process slows down significantly: Set up first landing → bolt the strings on → lift platform to required angle → jack into position → manually measure from existing legs as per design → undo work and repeat.

Consequently, there was no fluidity to the team as those who were putting the screw piles into the ground had to wait for each position to be established manually. Sam felt that accurate positioning using a GNSS would dramatically increase site productivity.



The access platform at Feltham where the Trimble Catalyst system was first used

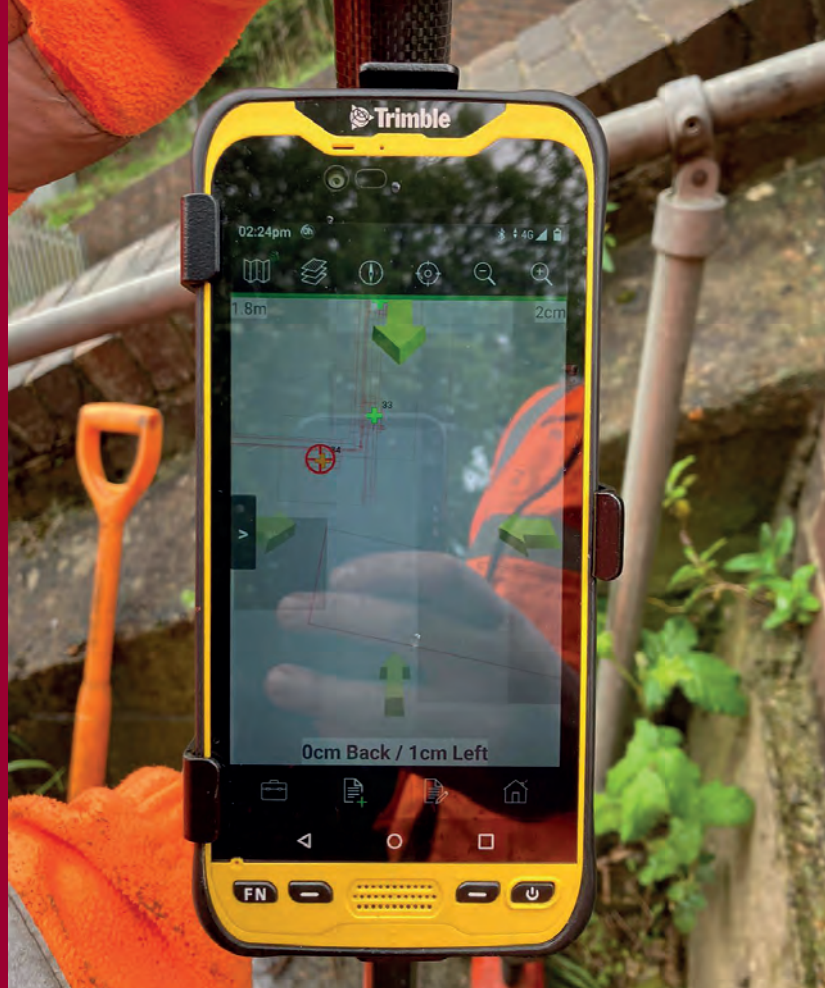
Trimble Catalyst benefits for Network Rail:

Top benefit: Simplicity and ease of use

- Accurate 1cm positioning of screw piles meaning smaller holes and less concrete
- Less days on site for each platform job for best use of labour
- Extra levels of checking platform work do deliver a high quality job
- Trimble RTX technology for working in areas of signal drop out such as Stroud and Gloucester
- Trimble ProPoint technology for work under trees meaning less vegetation clearing
- Low-cost systems for a super-fast ROI
- Versatility of the system for use across all types of off-track projects
- Excellent technical support from KOREC



Trimble Catalyst is small, lightweight and affordable



Lewis Jones, Network Rail Technician, on site with the Trimble Catalyst system

'Can you fix this problem?' Choosing the Trimble Catalyst solution

Sam made his initial contact with KOREC Mapping through a 'can you fix this problem' chat with a previous colleague who now works in KOREC's rail division. Directed to KOREC Mapping, he was introduced to the Trimble Catalyst system as the perfect fit for type of solution he was looking for:

- Simple and usable – none of his team are trained surveyors so both the hardware and the software had to be straightforward with a very short learning curve.
- Centimetre accuracy – Trimble Catalyst works with a subscription service depending on the level of accuracy required. Although decimetre accuracy would be sufficient for positioning the screw piles, thinking ahead, Sam knew that a centimetre accuracy subscription would enable him to use the system for additional applications undertaken by his team.
- Reliable positioning across the entire Western area – working from Worcester to Paddington to Penzance, Sam was aware of dead zones with no mobile signal. Catalyst's RTX technology, works in the background enabling centimetre level corrections whenever the internet connection goes down, for up to five to ten minutes, allowing the team to carry on working.
- Reliability under tree canopy –

"Network Rail's role is to run a safe, reliable, and efficient railway. We have a fundamental responsibility to spend public money entrusted to us as efficiently and effectively as possible..."

Jeremy Westlake, Chief Financial Officer Network Rail from the CP7 Efficiencies Plan 2024-2029

“ I’m surprised at how little the Catalyst system costs when you break it down. Labour costs us around £40k a week. If we save one week of labour in the year, then the system has paid out on our investment tenfold. ”

**Samuel Huish-Davies,
Scheme Project Manager**



Showing the Feltham access platform - the Catalyst system was purchased a week into the install to ensure the team positioned it correctly

all the team's work is route based and often surrounded by vegetation. Catalyst's Trimble ProPoint technology provides increased performance in challenging GNSS environments, including close proximity to trees and tall buildings. This brought the added benefit of minimal removal of any vegetation around the area of work.

- Portability – the team could find themselves out in the countryside if working on additional projects, Catalyst is small and light.
- Software fit for purpose – the KOREC Capture Pro (Rail) field software is developed specifically for the rail industry and includes a safety feature that alerts workers if they stray out of a geofenced area. It also provides track up/down and chainage functionality to ensure all workers know exactly where they are on the track.
- Good support/assistance in customising the system – it was vital for Sam and the team that any technical questions could be answered quickly. KOREC has an excellent reputation in this area and Sam says that the team has more than delivered, always responding quickly when needed.

He has also appreciated how the KOREC support team has worked with him on additional features to customise the system such as how to use the portal to position additional pegs for datum/a second check. The portal allows him to plot where he can measure which then comes up on the map on site. Also on the portal, a feature has been set up that turns the set out points a different colour as work is completed for easy progress tracking and avoidance of duplication. KOREC support also showed Sam how to load the DWG drawing onto the field device to provide an instant check should anything look in the wrong place. The portal also means that if an error occurs, Sam can immediately determine the cause whether it's insufficient setting-out points, operator error or malfunction of equipment.

For Sam, Trimble Catalyst was a perfect fit for his requirements and three systems were purchased comprising subscriptions for centimetre accuracy, TDC600 rugged data loggers and KOREC's Capture Pro software for rail. The system also comes with a secure, on-line portal for data handling and sharing.

Out in the field – the business case

Sam reports that the Catalyst system is in regular use at the start and end of every job with six or seven uses over a four-week period. This makes the subscription business model a perfect fit for his applications (he purchased a 100 hour centimetre subscription).

Whilst many jobs are fairly straightforward, a recent project at Feltham was a showcase

"A job we've just done using the system took us three days. Previously it would have taken eight days!

The quality of work we're delivering is much higher because of the introduction of the Trimble Catalyst system."

**Samuel Huish-Davies,
Scheme Project Manager**



The team is achieving even higher quality work with Trimble Catalyst

example of why the team needed to innovate. This platform was angled which meant that a positioning error of 2° or 5 cms out on the first walkway could mean a 1m discrepancy at the base and the need to redo the job. Additionally, in order to meet Network Rail standards, the job would have to start at the top to ensure that they were the correct two metre distance from the track but there were no datum points to measure off.

Sam says that for jobs such as this one, the time and efficiency savings from using Trimble Catalyst at the start would be impressive. "If I did this job again, I could start at the top, in the middle or the bottom with 100% confidence that we would be placing the screw piles in the exact location as on the drawing. There would be no need for strings and manual measurements so the diggers can work three to four holes ahead of the installers which makes for an impressive labour saving and no waiting around."

"I'm surprised at how little the Catalyst system costs when you break it down. It's not a big outgoing, especially compared to what we're now saving. Labour costs us around £40k a week. If we save one week of labour in the year, then the system has paid out on our investment tenfold. A job we've just done using the system took us three days. Previously it would have taken eight days!"

Trimble Catalyst - additional benefits

Whilst the number one benefit for Sam and his team has been the ease with which they can accurately position the platform's piles using Trimble Catalyst and consequently, the delivery of high-quality work, Sam also reports a number of additional benefits: "Because of the increased accuracy, we're digging far smaller holes for the piles and that means less concrete is being used – reducing materials and much better for the environment. The investment in the system is also a clear indication to our team that we are listening to them and value their feedback on what they need on site to do a job that's become increasingly challenging. However, what's really exciting is how we can also use our Catalyst systems for other applications including marking boundaries which means costly disputes with landowners can be avoided or for drainage mapping.

"We're known as the 'can do' team so our needs change annually, this year the focus is on access points, at other times it might be vegetation. We're always trying to evolve what we do and KOREC and Trimble Catalyst are an important part of how we can do this."



Team training with Trimble Catalyst

CONTACT US

Please do get in touch for further information on any of the products or services mentioned in this case study, a demonstration, support or just a chat about your requirements.

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