



Network Rail recently became the first railway company to officially announce their commitment to tackling climate change.

By acknowledging the climate emergency and the science-backed target of limiting global warming to 1.5. degrees, Network Rail affirmed their goal of continuing to be the cleanest, greenest mass transport system. In practical terms, this often means embracing innovation and new technologies that can reduce carbon emissions.

Network Rail are now using Telent's Digital Delivery solution to conduct station surveys along some of their busiest routes. The result? Faster, safer, and more carbon efficient operations. The switch from traditional, manual survey techniques to 3D scans reduces vehicle emissions by eliminating the need to revisit survey sites altogether.

Enhanced Efficiency

Historically, survey procedures involved a team of engineers meeting up to take pen and paper measurements and photos, then manually updating records to verify pre-existing data. The 3D scanning solution provided by Telent is set to change all that. Once a 3D scan is complete the data, accurate to the millimetre, is quickly made available in CAD (Computer Aided Design). That same data, 3D photos, and the full 360-degree scan can then be referenced, verified, and even shared with clients and suppliers. Once this data is recorded, it means that a site model is produced containing all the information so the location can be visited virtually, from a remote location, at any time.

Reduced Emissions

The real genius of the 3D scan deployment becomes apparent when you consider the man hours, and room for human error, associated in traditional manual surveys. By reducing the need for people to conduct manual surveys in person, carbon emissions are greatly reduced, by eliminating the need for repeated surveys to confirm, verify measurements and validate designs. The round-trip average journey for each engineer is estimated to be 75miles. What used to take a team of engineers all repeatedly travelling to the survey site, now requires only one trip and one scan.

These environmental benefits amount to approximately 100kgCO₂e vehicle emissions saved per platform using the 3D scan technology instead of traditional manual surveying techniques. Where Telent have used this solution recently, there has been a carbon footprint saving equivalent of 190,571 miles driven by an average passenger vehicle in a year*. This means less pollution in the air and less traffic on the roads.

Once the survey is completed, a 3D model is produced. By using this model, we are able to validate some of the design output rather than having to send our team of engineers to do this manually. Each time the model is accessed virtually it reduces our environmental impact and our carbon emissions savings continue to increase. With around a hundred sites covered by the new scanning technology, this amounts to significant progress in the field of environmental protection with no compromises in terms of survey accuracy.

Safety First

With fewer cars on the road and 'boots on the ground' the scope for incident and accident among engineers and personnel is greatly reduced. Telent's focus on 'Everyone home safely every day' is enforced as less engineers are required on site and fewer site visits which significantly reduces any safety risks compared with traditional surveying and design validations.

The emphasis on putting passengers first remains. The technology reduces the need for repeated engineer visits meaning fewer intrusions into platform space. Additionally, for engineers, access will be less likely to clash with other projects.

The ability to revisit a site virtually through the recordings of the 3D model technology facilitates faster and much safer re-evaluation of the data at any time. During COVID-19 lockdowns, this option of remote viewing has tremendous utility, enabling successful social distancing.

The deployment of 3D scanners for survey purposes represents a real opportunity for improvement across the board. Passengers can count on a smoother and more reliable experience, with enhanced safety, reduced carbon footprint and improved efficiency all achievable.

