

## CASE STUDY



## Salfords Sidings

### Client:

- Network Rail S&C South Alliance

### WHAT'S THE STORY?

Following a successful trial of the new Vogel R3D high-accuracy drone survey system at Network Rail's Grange Sidings site in Stoke-on-Trent, Plowman Craven was commissioned to conduct a live survey job at Salfords Sidings in Surrey.

The purpose of the survey was to enable design work for S&C (Switches and Crossings) replacement at one of the busiest stretches of railway in the country. Located to the south of London, both the Thameslink and Gatwick Express 24-hour passenger services run through this 500m stretch, making access for traditional survey work extremely difficult.

The site included four tracks, sidings and four S&C.



UAV data capture on location

### AT A GLANCE:

- UAV survey for Network Rail
- No track access or possession needed
- Delivery of 3D point cloud and orthophoto
- Accurate to +/-5mm—NR Band 1 accuracy
- Surveys conducted, processed and delivered in 4 weeks

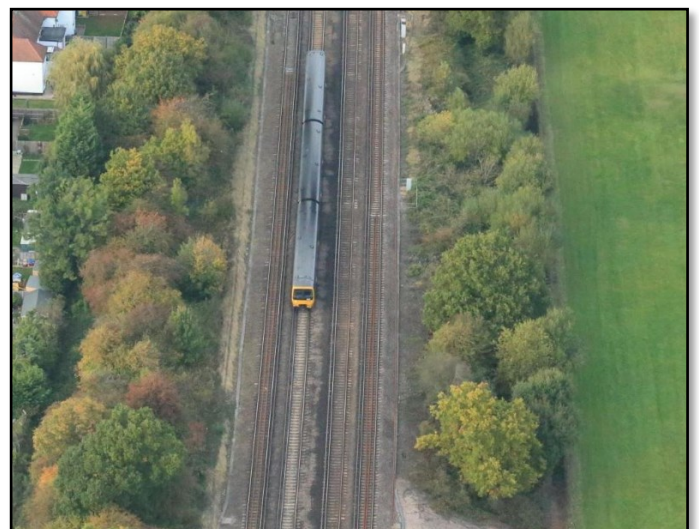
### How did we do it?

A survey control network was created, with a survey grid related to the OS National Grid and Datum. Survey Control and UAV control was established in the cess (the bit at the side of the track).

Flying at a working height of 25m, our UAV team – comprising a pilot and a surveyor – then flew our Vogel R3D system over the live railway. The flight was conducted from a position of safety in a designated green zone with a site warden attendance. No track access or possession was required.

The Vogel R3D system consists of an industry-leading UAV platform and 100-megapixel camera that enables us to take hundreds of overlapping high-resolution images that can be used to create a wide range of image and data-based deliverables.

Two days were spent establishing the survey and UAV controls, with a further two days spent flying in order to capture the required imagery. With processing taking a further two weeks, the entire project took just four weeks to complete.



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### What did we deliver?

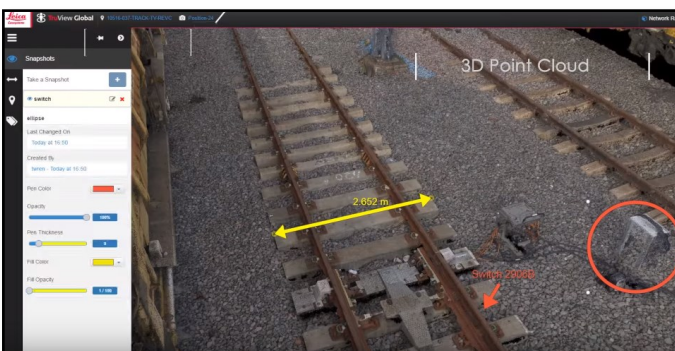
We provided Network Rail with a 3D Topographic Survey showing all permanent way features. We also delivered a range of enhanced deliverables including:

- Orthophoto – true-to-scale, high-resolution image with all distortions removed so that measurement can be taken and overlaid with CAD drawings
- TruView Global – similar to Google Street View, enabling users to take a virtual tour
- 3D point cloud – for use in CAD packages by designers, enabling the production of BIM (Building Information Modelling) deliverables

The survey met Network Rail Band 1 accuracy requirements (+/- 5mm). Verified by independent check points and laser profiles of the rails.



*Vogel R3D*



*Mark up and measure distances in TruView*



### 3D point clouds of Salfords Sidings worksite



### About Plowman Craven

Plowman Craven provides integrated measurement and consultancy services to the property and infrastructure markets, pioneering the use of technical innovation to deliver proven expertise and trusted results throughout the project lifecycle.

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