

Tidal Thames Challenge for Trimble SX10



Providing a high quality service within tight time constraints is an on-going challenge for surveyors Greenhatch Group. Their survey teams value reliable performance from their instruments and regularly review how they can be more productive through the adoption of new technology.

Greenhatch was one of the first in the UK to invest in the Trimble SX10, a scanning total station combining high speed 3D laser scanning, high accuracy total station measurements and enhanced imaging.

On a current project, the forces of nature in the shape of the tidal River Thames meant a limited period of access for the Greenhatch surveyors, providing just the sort of challenging site conditions ideal for the multi-functional SX10.

A routine laser scan on a building alongside the river found brickwork on an abutting property was bowing. The leaseholder contacted Greenhatch to undertake monitoring annually over a five-year period. Whilst the leaseholder had proposed undertaking the work with a traditional approach, monitoring by total station was ruled out because there was, as yet, no indication as to where the targets should be placed. Greenhatch engineering manager Jordan Knight suggested a 3D laser scan as the best methodology with the initial scan used as base data. Work would have to be undertaken from the river's beach which presented new challenges. Access was by slippery steps and scan time on the beach was restricted by the tide so control had to be established outside the river's zone of influence. Jordan's solution was to use the SX10 in two key areas: establishing control and making best use of scan time on the beach.

Using the SX10, Jordan was able to establish external control from outside the zone of influence so that each time he returned to the site he can go directly to it, saving time as well as giving better accuracy and repeatability. Without the SX10 a separate scanner and total station would have been required, taking much longer and increasing the probability of errors.

Control stations were statically positioned using a Trimble R10 GNSS and would be used for gathering further monitoring observations on each return to the site. An added bonus was less equipment needed on the beach.

Laser scanners often capture significantly more data than needed. Jordan therefore scanned selectively to speed up the process. The SX10 is driven by Trimble's Access software on a tablet, which means no eyepiece for targeting. He could also draw a polygon over the tablet's live video feed enabling him to define the scan area and scan density. The tablet also gave him a clear visual of the scans captured so he did not need to go back to the office to register them and check that nothing was missed. Instead, whilst still on the beach, he was able to spot immediately that on the east side of the building more data was required due to a overhanging balcony obscuring brickwork behind it.

Back at the office the registered scan was dragged and dropped into Trimble Business Center software where it was coordinated to an OS grid and Jordan drew the client's required contours to show the deviation and reflection on each accessible façade.

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