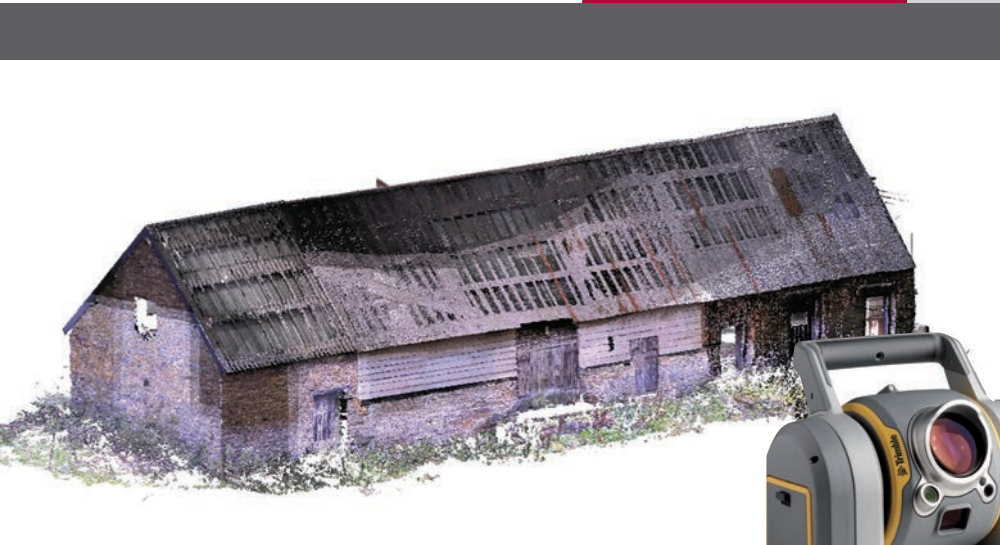


Case Study

Customer:
PM Consultants

Project:
Multiple 3D laser scanning projects

Solution:
Trimble SX10



For Neil, the combined functionality of the SX10 - which includes high precision measurement, long range high quality scanning and imaging - would provide his business and survey team with a versatile instrument that would not only be productive on a range of projects from the start but would also provide him with a virtually risk-free entry into laser scanning.

Additionally, Neil was looking for ways that would allow him to provide his clients with an even higher level of service and deliverable whilst allowing him to make

“The Trimble SX10 allows us to save time and money on pretty well every project, every day.”

Neil Main
PM Consultants

best use of his surveyors' time and generally reduce some of the headaches that all survey practices face daily. For example, clients asking for additional data after a survey has been completed, tight time constraints and surveys in

hazardous areas with little or no access were regular occurrences. He reports that his SX10's three-way functionality has assisted in all these areas.

Rail bridge survey - peace of mind when time is limited

Live railway lines, short possession times, unsafe buildings and inaccessible locations are hazards that Neil's surveyors face on a regular basis. On a recent PM Consultants project a client requested a



▲ PM Consultants on site with the SX10

Moving into 3D laser scanning

When it came to adding 3D laser scanning into PM Consultants range of services, it was a question of right time, right place and right instrument for Managing Director Neil Main

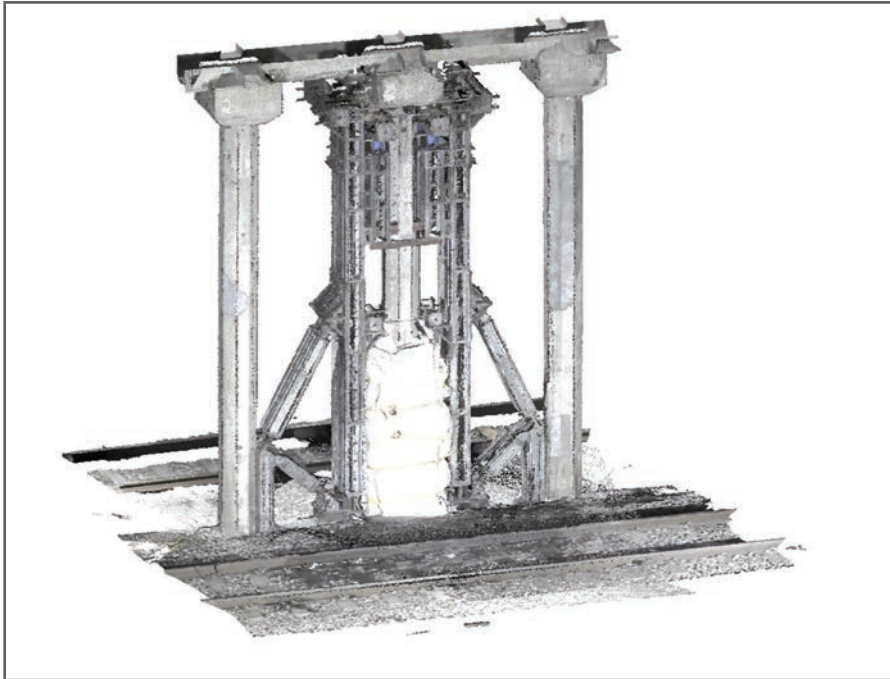
It's been over 12 months since Trimble released its SX10 Scanning Total Station with take-up ranging from the sole proprietor to the largest engineering and construction companies. Whilst no company, big or small, invests in new technology without the expectation that it will either solve a problem, increase productivity or offer a better way of doing things, for the smaller survey practices with less instruments at their disposal, purchasing decisions are based on many factors. In particular, these factors will be personal to their business with timing, customer base, strategy and economics all playing a part. The expectation of an early ROI for the smaller practice is therefore understandably high.

For South Wales based PM Consultants, the decision to purchase an SX10 was based on a combination of all the factors above and can be loosely defined as right time, right job and right instrument.

Operating out of Abergavenny, PM Consultants was established by Managing Director Neil Main in 1996. Since then the company has grown into a well-respected

multi-disciplinary practice with a team of seven surveyors, operating nationally. The company offers a range of survey services with a client base covering individuals, national architectural practices, property developers and civil engineers.

Under Neil's guidance the company has built up a comprehensive survey fleet including high-spec GNSS and robotic instruments and this mix has enabled him to undertake almost all work offered, with the exception of 3D laser scans. Unwilling to invest in a 3D laser scanner until he felt that there would be sufficient work to justify the outlay, Neil has previously turned down several scan jobs. However, by September 2017, the offers for scan work were still coming in and Neil was also tendering for a large contract that demanded 3D scanning. Consequently, although he still had reservations about the value that a 3D laser scanner would bring to his company, he decided to research what was on the market. As a long-term Trimble user and KOREC customer, he quickly became aware of the newly launched SX10 Scanning Total Station.



▲ SX10 scan of rail bridge formwork

topo survey of rails running under a road bridge in preparation for the replacement of two crumbling support columns. The SX10 was used for the high precision (1") measurements that the job required and as an added value extra, PM Consultants also performed a scan to provide a plan of the underside of the bridge showing the planks and steel work. As a result of this 3D scan, the client requested additional work to be undertaken that included a scan of the formwork on the live rail in order to produce a section verifying that there would be no encroachment in the path of passing trains. Control was established during the original topo survey and the site was then visited on three different occasions to produce the required sections at each stage of the project. All the surveys were carried out with the SX10 and ultimately used by Network Rail for the sign-off of the work. Neil reports that not only could they carry out the scan in darkness so that no possession of the line was required, but also that they were 100% sure that they had captured all the information the client required. Neil also estimated that site time on this job was cut by two thirds.

Barn elevation survey – detail where it's needed most

PM Consultants work with several national architectural practices but, previous to the purchase of the SX10, had chosen to turn down elevation work in city centres. Due to a lack of time these jobs would simply have taken too long using a total station. Neil was therefore particularly interested to

see how the SX10 would perform in one of his major application areas, rural elevation surveys. In this case the client had contacted PM Consultants to request a topo, floorplan and detailed elevation survey for the conversion of a particularly crooked barn. To further complicate things, part of the barn was filled with junk and a previous survey company had failed to complete the tricky survey with enough detail. Neil estimated that without a scanner, the job would have taken at least three days as well as being a nightmare from start to finish due to the level of detail required in certain areas and the overall lop-sidedness of the barn.

This was the first job that PM Consultants undertook with the SX10 and due to a particularly busy week, a single surveyor completed it rather than the usual 'two-man' team. The surveyor finished the whole job in just one day and attributed a lot of the saved time to the SX10's polygon scan function. Laser scanners often capture significantly more data than needed but Neil's surveyor was able to scan selectively to speed up the process depending on the different levels of detail required inside and outside the barn. Trimble Access software on a tablet drives the SX10 and surveys are directed via live video images on the tablet rather than looking through a traditional eye piece. Using Trimble Access and the tablet, the surveyor was also able to draw a polygon over the tablet's live video feed enabling him to define the scan area and density based on the estimated survey time

generated by the Access software. 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 then check that nothing was missing.

Back at the office, PM Consultants simply dragged the registered scan into their Trimble Business Center software where the end deliverable was prepared, in this case a 2D CAD drawing for the architects. Neil reports that the customer was delighted with the survey's level of accuracy and detail and that just one day on site was required rather than an estimated three if a total station had been used.

Multiple applications – time savings and rich deliverables

PM Consultants undertake a variety of work and Neil states that the SX10 has enabled him to complete work within tighter time frames and also to provide his clients with a richer range of deliverables. For example, whilst one client may request just a point cloud of a scanned water treatment plant, another client, such as an architect who requires great detail, may ask for the deliverable to be supplemented by high quality colourised images. Whilst it is still early days for the PM Consultants team, Neil is convinced that the path he has chosen to move into 3D laser scanning has been a fruitful one. "The SX10's combination of high-density 3D scan data, Trimble VISION imaging, and high-accuracy total station data, allows us to save time and money on pretty well every project, every day. On average we are completing jobs 30-50% faster than we were previously and the experience that we've already gained has reassured me that if we are particularly busy, high quality work can be undertaken with the SX10 and just a single surveyor rather than our usual two-man team. Last year we were turning down any number of elevation surveys, particularly in city centres due to the pressure of time. That's no longer the case and in this particular area we can't wait to see what else the SX10 can deliver. However, the single stand out benefit for us is the peace of mind that the SX10 supplies. It's great insurance that we can just do a quick three minute scan or twelve minute full dome scan after any total station job. Back at the office, if we find we've missed something, or the client requests some additional information, we can go into the scan and retrieve whatever we require. Cutting out the need to return to site unexpectedly takes the pressure off both myself and my surveyors and that's a benefit that's felt by all at PM Consultants."

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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