

DATA, DATA, DATA: THE FUTURE OF SURVEYING

WITH SO MUCH DATA NEEDED SO FREQUENTLY NOW, SURVEYORS NEED TO EMBRACE TECHNOLOGY TO KEEP UP – AND TECHNOLOGY COMPANIES NEED TO DO WHAT THEY CAN TO MEET THEIR DEMANDS, ARGUES **LEIGHTON DAVIES**

In 2021, data is king. But its potential is not being fully exploited in our industry, and unfortunately for those still clinging on to traditional methods, we're at a 'do or die' point – embrace data and the technologies enabling it or get left behind.

The enormous opportunities that data presents within surveying and construction simply can't be ignored anymore. Taking advantage of data can and will change the way businesses and sites operate, making them more accurate, more efficient and more profitable. All that's missing is the consistent onboarding of the solutions – whether it's the hardware making data collection faster and more precise than ever or the data management tools helping to make that data interpretable for those who need it on the ground.

Now, the industry is facing a single-shot opportunity to recover from the impact of Covid-19. As countries open back up and businesses across the board gear up for recovery, the opportunity is

there for coronavirus to be the catalyst that accelerates digital adoption. After all, data is knowledge – and knowledge is power.

The power of data in construction

Harnessing the power of real-time, accurate data is key to creating a quality workflow. A survey site is a rich source of data and that data contains insight into every single element of work. With a real-time picture of what's going on, your project management can be even more detailed and responsive. As we all know, surprises during the construction cycle such as inaccurate quantities, measurements and estimates are a major reason why projects are delayed and go over budget. With the application of the appropriate technology, last-minute changes to project scope and design can be avoided.

What's more, with data you can open up huge parts of a project to multiple people in order to benefit from varied insights and expertise, connecting field and office for complete visibility of

progress. Technology can also interpret huge amounts of data instantaneously, providing real-time feedback on a job's progress, in turn allowing for immediate adjustments to maximise productivity.

What data means for the role of the surveyor

With such a seismic shift in processes and workflows comes an equally seismic shift in the responsibilities of a surveyor. In fact, we're already seeing job titles reflect a shift towards data processing. Surveying engineers are now spatial data managers; land surveyors are now geodata managers.

Of course, surveying has always been grounded in data in a sense – the role has been grounded in coordinate systems and geolocations, and knowing what data is required to create the right deliverables. But this definition is evolving in line with technological advances. Many surveyors are learning how to leverage huge data sets, using cloud-based and SaaS solutions



Topcon's MAGNET software was used to save time and costs on Norway's biggest road project to date.

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SURVEYING



A surveyor analyses and shares data with office and site teams



Easy-to-access data in the office allows for constant real-time communication between teams

to open up new possibilities and take their role to the next level. However, there are still far too many in the profession who are reluctant to embrace new technologies, favouring instead the traditional methods they've relied on for years. This has been permissible for a while, but we truly are at a crossroads and it's crucial that surveyors take the right turn if they're going to succeed.

The fact is that surveying in general is no longer an abstruse remit reserved only for those with specialist qualifications. Certain elements of surveying – namely data capture – are being increasingly democratized to projects teams on site as the technology becomes more mainstream and easier to use. It's no longer enough to have a surveyor come to site every couple of weeks to take readings, then provide the findings another two weeks later. Teams on site need continual updates and reassurance, and the tech they have access to is making this happen.

That's not to say the role of the surveyor is obsolete – far from it. In its raw state, data is useless, so surveying expertise is invaluable when it comes to enriching these data sets



Precise data can be accessed and shared on site in real time

and getting the most out of the technology. Surveyors – data managers, data technicians – need to be able to take the data, translate it into understandable information and share this with on-site teams in a clear way, so they can nip any clashes in the bud and keep their project as safe and efficient as possible. What we need from surveyors is for them to be willing and able to use new tools productively.

Making the most of the tools available

It goes without saying that surveyors can't lead this charge on their own. It's also the responsibility of technology providers to develop enterprising solutions and communicate their benefits to the industry so we can collectively address the demands of the future.

When it comes to mass data collection, it's hybrid solutions that are the future – instruments that combine GNSS positioning with optical robotic measurement, such as the new Topcon GT Series of total stations. Built for job site mobility, such systems perform faster in the field than standalone robotic systems, enable a streamlined workflow



The Topcon GT-1200 ultrasonic robotic total station enables precise layout and survey on site

and are much more versatile than RTK-only solutions, with the lightweight GNSS receiver on the prism allowing the system to reacquire targets even in challenging conditions.

Once data is captured, it's vital that this data is processed and communicated accurately and at speed so that everyone has real-time data at their fingertips. That's where data management software comes in, such as the latest version of our MAGNET suite, which is a digital workflow tool covering field, cloud and office. When it's coupled with our on-site instruments, it creates an extremely powerful solution that supports those performing survey or layout tasks, ultimately helping them to increase precision and greatly diminish the potential for error.

A bright future

The surveying industry needs to evolve quickly if we're to effectively and safely tackle volume of work put before us; traditional approaches simply won't cut it. At its heart, it's a dynamic, forward-looking industry that is shaping our collective future and creating a modern built environment for the benefit of society, but it's technology and data that will see this come to fruition. Cloud-based data storage and workflow technology are soon to become the norm for everyone, not to mention augmented reality solutions, so those who want to be part of the sector in what could be a very bright future need to act now.

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