

SAFETY FIRST



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The use of Augmented Reality devices for strike avoidance is helping cut risk for those installing or maintaining roadside assets

As they say, ‘safety is no accident’. **Neil Pollock** considers how technology can be applied to ensure we all head home safely after a hard day designing, building and maintaining our environment

Today’s geospatial world is one of fast-paced change and we have the privilege of working with emerging technologies to change the world in which we live. But for many of us, this can mean putting ourselves in situations that are fraught with risk. The geospatial professional can be working in a myriad of dangerous environments, whether at height, on the rail network, or on busy construction sites, with all the dangers these pose.

Those of us that have been in the industry for some time will have seen huge positive changes in attitudes to site safety. However, if we take construction as an example, this sector still tends to account for the greatest number of fatalities in the workplace each year in the UK. Thankfully, advances in geospatial technology increasingly offer us ways to mitigate or eliminate risk by taking workers out of danger or, at very least, making their jobs faster and more efficient, thereby limiting the time spent in danger.

Remote working

As an example, mobile laser scanning, performed from the safety of a vehicle, has improved both the ease of use and the amount of data that can be collected. This stunning technology also means that surveys of busy roads can now be conducted without staff putting themselves in harm’s way. Even with the provision of traffic management, there is still an inherent

risk in working alongside live carriageways. For example, 2018 saw nine accidents with serious or life-threatening consequences while, in 2017, a road maintenance contractor was fined almost £2 million following the death of a worker. Mobile laser scanning allows for fast collection and data extraction in the safety of an office, potentially saving lives.

Remote working has its advantages for staff safety in other situations. This could, for example, be the use of a fixed wing UAV, dedicated long-range laser scanner, or hybrid total station for the large-scale surveying of a quarry. Such technologies obviate the need to send operatives into a quarry at all. As Mark Packham of Mining Surveys Ltd commented, “As health and safety requirements have evolved, so must surveying equipment to allow us to maintain accuracy and detail, yet provide the safest possible working environment”

But what if working at distance is not an option? On occasion, geospatial professionals have to be at close quarters with the subject of their task. Take surveying on the rail network as a case in point. Working in any capacity in this environment is clearly dangerous, so how can advances in technology help here? The answer is speed and accuracy. If surveyors can capture data faster and with absolute confidence in its accuracy and clarity, then the time spent on the track is reduced. This is made possible by advances in Track Measuring Devices (TMDs).

The recent addition of precision IMUs (Inertial Measurement Units) to TMDs allow for fast and efficient track survey and asset data collection. Shorter initialisation times allow for rapid on-site use, and further reduce potentially dangerous time spent on the track.

Seeing the unseen

In addition to high-end technologies keeping us safer, advances in affordable mixed reality devices mean that we can ‘see what we can’t see’. In the absence of a unified, mandatory reporting structure, statistics are impossible to verify, but there are estimated to be around four million excavations in the UK annually, resulting in approximately 60,000 strikes. With the correct data input, these mixed reality devices allow staff to see what is below the surface well before they break ground. The integration of low-cost GPS receivers teamed with hand-held mobile devices means that safety is not confined to those with deep pockets.

As geospatial technology advances at an increasing impressive pace, manufacturers must continue to keep safety in mind when developing new products. It is hugely important that safety is a primary built-in factor and not an after-thought or by-product. We all want to be able to head home safely after a hard day designing, building and maintaining our environment. Let’s work together to make sure that’s a reality. As they say ‘safety is no accident’.

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