

CUSTOMER

Castle Keep Surveys

PROJECTPAS128 Underground
Utility Survey**SOLUTION**Trimble SiteVision
Augmented Reality
System

After the spray paint fades....

How the smart application of Trimble's AR SiteVision technology has enabled Castle Keep Surveys to provide their client with an innovative solution for identifying underground utility assets—long after the completion of a PAS128 Underground Utility Survey.

With two offices that cover the whole UK, Castle Keep Surveys reflects the ethos of its Managing Director, Mick Dixon. The company has a policy of recruiting new talent from local colleges and Mick supports his team with an extensive and innovative survey portfolio that is especially well suited to the demands of utility surveys.

An early adopter of drone and SLAM technology, the company has recently expanded its range of KOREC-supplied equipment—including a Trimble 3D Laser Scanner, Total Stations, and GNSS—with the addition of Trimble SiteVision. This advanced Augmented Reality (AR) system allows users to overlay 3D models onto real-world environments with high accuracy, making complex spatial data easier to visualise.

Meeting the client's request for an innovative solution

Contracted by Seymour (Civil Engineering Contractors) for a project on behalf of Northumbrian Water, the client requested that Castle Keep Surveys undertook a PAS 128 survey to detect, verify and locate underground utilities on a residential street in Sedgefield. The householders had been experiencing flooding in the main drains at the rear of their properties during periods of heavy flow. To alleviate pressure on the drainage system and reduce the risk of overflow and flooding, the plan was to relocate the drains to the street, providing a long due upgrade.

Seymour wished to find a better method of being able to view the position of these assets that would eliminate the need for paper maps and spray paint that could often fade or wash away whilst still needed. They therefore specified Trimble SiteVision to be included in the workflow. Following extensive testing by Castle Keep Senior Surveyor, Will Harrison, a Trimble SiteVision system was purchased specifically for this project. Under his guidance, the PAS128 survey was carried out by two teams over a five-day period using Electromagnetic and GPR devices connected to a Trimble R12i GNSS. This data was then processed in n4ce to turn the utility lines into tubular renditions and create a 3D model. The model was fitted to OSTN15 and then exported as an IFC file via Trimble Connect (free cloud-based collaboration platform).

How the client used Trimble SiteVision

Trimble SiteVision is an advanced Augmented Reality (AR) system designed for visualising geospatial data in real-world environments. The Castle Keep system consists of a handheld tablet (an iPad) that integrates with a low-cost Trimble Catalyst DA2 GNSS receiver for precise positioning. Users can walk around a site and view 3D models, underground utilities and design plans overlaid on their surroundings, in this case the IFC model, helping them understand spatial relationships and make informed decisions.



Trimble SiteVision clearly showing the underground assets in context

"Visually, the system is really nice to look at and you can see exactly what something and where it is showing exactly what it looks like in real life, very different to a PDF!"

Will Harrison,
Castle Keep Surveys



On site with the Trimble SiteVision system



Showing the relationship of the underground utilities to surrounding walls and buildings

Following successful trials and a brief run through on how to operate the extremely user-friendly system, the client is now actively using Trimble SiteVision for the faster and more accurate location of the surveyed underground assets.

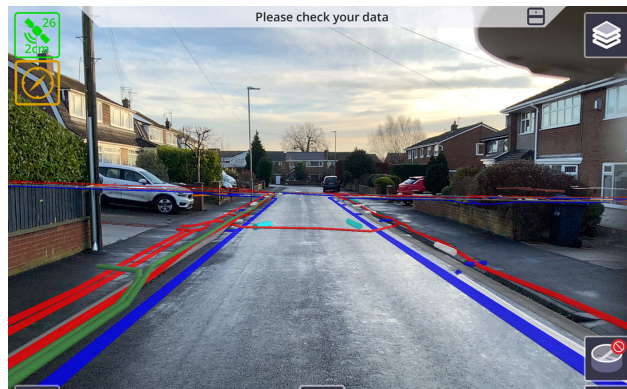
They were up and running within just five minutes of turning the system on and achieving accuracies of around 30mm which was more than sufficient for their application and far more accurate than spray paint.

Will is quick to point out that the system is not designed to replace a safe digging method but is another way of re-establishing the previously located utilities to around 30-40mm accuracy. Clarifying decision making, the system means that the client can return to site long after the spray paint has faded or washed away. Will concludes:

"Visually, the system is really nice to look at and you can see what something is, where it is and exactly what it looks like in real life, very different to a PDF! It couldn't be easier to use, one tap and you're connected and ready to go. Just walk 10 metres and you're fully aligned with the model in exactly the right place. This will definitely revolutionise the way people look at utility surveys on site."

Mick Dixon backs this up:

"Feedback from the client has been extremely positive, they're over the moon with it!"



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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