



UK Head Office

14 East Bay Lane, Plexal – The Press Centre,
Here East, Queen Elizabeth Olympic Park,
London, E20 3BS
+44 (0) 3450 600 700
enquiries@xrailgroup.com

Utility Mapping Services



Utility Mapping

Imagine how useful it would be to know exactly what lies beneath your feet before starting excavations, to know for sure where expensive fibre-optics cut across your site or how deep utilities lie...

In a project context, missing, inaccurate or outdated utility information can lead to delays, conflicts and interruptions in service. In a human context, however, inadequate information can lead to serious injury or even death.

This type of survey may also reveal elements that were not shown on construction drawings or statutory undertakers records. Simply showing their presence will allow you to plan your works accordingly, saving time, money and improving safety in the process.

Since our inception in 2003, XRAIL's utility mapping services have become indispensable to a client base stretching across the construction, rail, telecoms, utilities and highways sectors.

What is Utility Mapping?

Utility mapping surveys provide critical information on below-ground conditions, clearly showing all manner of obstacles (utilities, voids, foundations etc), their depth, position and type. What's more, this can usually be achieved without disturbing the ground and with minimal disruption to the public or other site workers.

From power, gas, water and telecoms to fibre-optics, drainage and sewers, our survey teams pick up all services in accordance with BSI PAS 128, the current British Standard for underground utility detection. From an initial desktop study and site reconnaissance to the detection and physical verification phases, our team enforce best practice throughout the entire project.

Key Benefits

- Reduced levels of cost, delay and risk
- Improved levels of safety
- Unnecessary excavation kept to a minimum
- Disruption to road/other site users severely reduced
- Highly accurate data provided
- Up-to-date records that educate future design and construction



The Equipment

Utility surveys are initially carried out using electromagnetic cable avoidance tools such as the Radiodetection RD8000 with drainage runs being traced by feeding a sonde along pipe runs from the surface. The transmitted signal is then traced from above ground using the C.A.T. with the service's position marked on the surface.

Depending on the service level demanded, a thorough electromagnetic survey can be followed by a more sophisticated Ground Penetrating Radar (GPR) scan. Where even greater levels of accuracy are required XRAIL can deliver a practically unique vacuum excavation service to physically verify the location of buried services. Where appropriate, service locations are plotted using the very latest total station and GPS instrumentation allowing our surveyors to accurately display their findings within 2D or 3D CAD drawings or even BIM plans.

Survey Types

Whilst all of our surveys conform to PAS 128 guidelines, utility mapping is not a 'one size fits all' service... What one client might demand another may see as unnecessary. Every project, therefore, is different with site-specific requirements, deliverables and environmental considerations varying considerably between one job and the next.

This is a complex science that should not be procured without first consulting a true, seasoned professional. We pride ourselves on providing up-front advice to all clients, present and future, to ensure that they get precisely the information their project demands.

Site Mark-up Surveys

As a matter of course all surveys should be marked out on the ground prior to any drawings being produced. Indeed, a simple site mark-up is all that many clients require, especially for smaller jobs where excavation is imminent or where time is of the essence. The first stage of the operation is to source all available buried services information from the known asset owners. In exceptional cases it may be possible to carry out a survey without them but best practice dictates that these plans form the backbone of any responsible utility surveyor's arsenal.

A site mark-up survey is carried out using the latest approved cable avoidance tools, signal generators and multi-antennae ground penetrating radar equipment. Our surveyors' findings are clearly and precisely marked on the ground using bio-degradable survey marking paint. For areas of softer, protected ground such as grass, it may be necessary to use a series of small marker flags to highlight service routes.



Full Mapping Surveys

If a topographic survey has already been completed our surveyors can occupy the existing control using total station or GPS instruments in order to position all findings on a precision and to-scale CAD plan. Alternatively, they can install new control and carry out their own topographic survey making it as basic or as detailed as the project demands.

Not only do these drawings provide our clients with a valuable, accurate and up-to-date resource upon which to base their designs and future works, with tens of thousands of incidents occurring every year in which people are killed or injured and third party property is damaged, the argument against carrying out a full mapping survey has become a non-starter.

Key Benefits

Vitaly important to all those breaking ground, as-built surveys are frequently carried out only after a project has been completed. Even worse, many are never carried out at all leaving construction drawings or even guesswork the only source of information.

Without comprehensive as-built documents assets are increasingly difficult to locate with cable strikes and service outages becoming an inevitability. Without the proper documentation minor changes or deviations will not be recorded with strikes, time and costs increasing as a result. Our dedicated team of surveyors works directly alongside or behind telecoms and utility installation teams, picking up new cable runs and assets (cabinets, switches, manholes etc.) in real time.

The result? Truly accurate, up-to-date as-built documents that reduce downtime, saving time and money in the process.



Get in Touch

For more information on our range of services or the best approach for your project why not call our office on **+44 (0) 3450 600 700**. A member of our team will be happy to help.



UK Head Office

14 East Bay Lane, Plexal – The Press Centre,
Here East, Queen Elizabeth Olympic Park,
London, E20 3BS

+44 (0) 3450 600 700 | enquiries@xrailgroup.com

