

## PAS128 – Type B Survey

By utilising the latest in subsurface detection techniques, including Ground Penetrating Radar (GPR) and Radio Frequency Locators (RFL), Safedigging can work virtually anywhere to locate and mark out the depth, position and type of all buried utilities.

Working to PAS128 specification for underground Utility Detection, verification and Location as standard Safedigging will find services including electrical cables, steel mains pipes, plastic gas and water pipes, fibre optic ducts, concrete sewers and clay drainage pipes down to a depth of up to 2m.

Once all the perimeters have been identified, Safedigging will use appropriate equipment in a proven and methodical manner. All services found will be marked immediately (together with relevant depths where possible) using specialist biodegradable paints, with different colours to indicate utility type.



### PAS 128 Type B specifies a min. of two techniques be used in detecting utilities:



**EML, Electro Magnetic Locating:** Detection of buried utilities via a hand-held receiver using electromagnetic and radio frequency signals that are present in metallic utilities as a result of current flow or re-transmitted low frequency radio signals (passive EML).

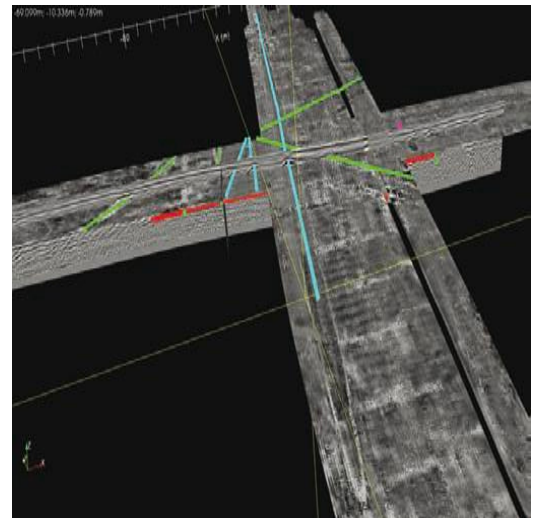
Signals can also be induced from a transmitter at ground surface, by direct connection from a signal generator or from a sonde or tracing wire introduced into a pipe or duct (active EML).

Most EML systems do not have the capability of recording what was detected on-site, so it relies on the detected position and depth being marked on the ground as the survey progresses. This has the advantage of providing quick results but does not allow post-processing and retrospective interpretation of the data to be undertaken and has the disadvantage that no digital record is made.

**GPR, Ground Penetrating Radar (sometimes referred to as ground probing radar):** The use of radar waves from a surface transmitter that can penetrate through ground materials and are reflected back to the instrument by a change of ground material or other buried objects.

In its simplest form, GPR has systems which have only real-time capability. As with EML, no digital record is captured. GPR systems where the data are recorded are usually surveyed in grids and then post-processed and interpreted off-site. This increases the confidence in the data. Accurate survey grids are established so that detected features found during post-processing and interpretation can be retrospectively located on the interpretative drawings. A digital record is generated with these systems. Geophysical data by itself does not allow identification of the utility detected. The identification of the utility is achieved through a combination of on-site interpretation from both GPR and EML surveys together with on-site reconnaissance and correlation with utility records.

It is recognized that post-processing generally improves the interpretation of GPR data by resolving weak and intermittent signals or analysing multiple targets in order to gain a better understanding of areas of complex or more obscure utility networks.



At Safedigging we use the very latest Electromagnetic Utility Detectors from the market leader Vivax-Metrotech, IDS Stream C GPR & Opera Duo. Using Gred HD Post Processing Software and One Vision we are able to completely Post Process the data collected so you have the confidence everything is covered, giving you the very best information possible sub surface.