



Arbor Operations

WE GET IT RIGHT

TOLL FREE: 1800 652 862

Ground Penetrating Radar

Many projects require the ability to view what is below ground –reasons for this could include scanning previously laid concrete or ground cover for easements and buried utilities, scanning concrete for steel reinforcing, or scanning an area near or around a tree to locate the roots to determine how potential construction and development work could affect the tree health and vitality. The key to a comprehensive environmental assessment is the subsurface investigation. GPR plays an integral part by providing a non-intrusive means of examining the subsurface for environmental hazards such as soil contamination, underground storage tanks and drums. GPR can delineate landfills and pathways for contaminant flow, as well as conduct hydrogeological surveys.

Ground Penetrating Radar (GPR) is a way to accurately determine whether something lies beneath the surface and with its 2D image capacity, is frequently used by developers, builders and utility service providers giving more certainty to the location of any sub-surface anomalies.

GPR uses high frequency radio waves which are transmitted into the ground. When the radio wave hits something under the ground (say an object, root or anomaly) the radar records variations in the reflected return signal.

The science behind the GPR is that the radar uses electromagnetic energy to determine the varying electrical signals given off by the ground and any underlying objects within the ground. The GPR efficiency is dependent upon the electrical conductivity of the ground, the transmitted frequency and the radiated power. As conductivity increases, penetration depth decreases this is due to electromagnetic energy dissipating into the ground, which in turn causes a loss in signal strength.

The best resolution of an image is achieved with higher frequencies, however these frequencies do not penetrate as well as lower frequencies. Good general penetration is achieved in dry sandy soils or dry materials such as granite, limestone and concrete where the depth of penetration could be to 10-15m.

Arbor Operations have successfully used GPR technology for many of their clients – in both domestic and commercial situations – to determine how best to proceed. Call today for further information or visit www.arboroperations.com.au to view the GPR video.