

# Ground Penetrating Radar - GPR Services

GPR is a non-destructive-testing method that generates an electromagnetic signal, which penetrates the subsurface and measures the amplitude and the travel time of the returned signal. Ground-penetrating radar (GPR) data provides high-resolution cross-sectional images of the scanned material. Antennae of different frequencies allow for varying levels of resolution and depths of investigation. The data is very versatile and applicable across many disciplines.



## THE Applus+ SOLUTION

Applus+ RTD's geophysical teams use state-of-the-art GPR equipment, processing techniques and 3D visualisation software to evaluate sites and provide comprehensive answers to its clients' questions. Our GPR services are carried out by highly trained and experienced staff geophysicists.

Applus+ RTD works with its clients to understand their needs and deliver data that will answer their questions. We also have the advantage of being able to draw on other geophysical methodologies in the event that GPR turns out not to be the most appropriate technology. Whatever the situation, we offer our clients a complete and high-quality solution.

Our teams are able to respond rapidly no matter where the client is based. We display all GPR data collected in a georeferenced map to show data coverage. Applus+ RTD can also create 3D volumes in which to display complicated data sets, allowing the user to fly through the data and also create slices through the data volume.

## Target customers



Ground-penetrating radar is a versatile geophysical method. It can be used in the geotechnical field in **concrete scanning** and analysis, as well as in a range of other fields such as in environmental, archeological and transportation projects.

It is used during the entire life-cycle of a project, from design through to maintenance and operation. GPR is often used during the design phase of a construction project to investigate the ground for geological properties or to identify the location of utilities and buried anomalies. GPR is also often used during and after the construction phase to verify concrete thickness and/or to locate reinforcing bars or buried utility conduits.

GPR can be used to collect some of the following types of data:

### **Geotechnical**

- Location of rebar/post-tension cables
- Utility and conduit mapping
- Slab thickness/concrete cover
- Concrete integrity/void identification

### **Environmental**

- Site assessment
- Location of buried drums and tanks (UST)
- Landfill and trench boundary mapping
- Archeological and forensic investigations
- Map contaminant plumes
- Water-table mapping

### **Transportation**

- Asphalt thickness
- Base-layer evaluations and void detection
- Bridge condition assessments
- Bridge concrete cover and deck thickness

## **Key customer benefits**

Partnering with Applus+ RTD for a GPR solution affords the following benefits, amongst others:

- High level of quality – our geophysical experts provide the best available data-collection and interpretation services
- Cost effectiveness – we select the optimal collection parameters so as to collect the best data the first time



- Professional reports – discussing both the technology used as well as in-depth results and interpretations
- Non-destructive technology
- Rapid results – most of our GPR results are obtained in real-time to allow for the rapid assessment of survey data