Geophysics can aid archaeological investigations immensely. The use of the above techniques can provide rapid coverage of a site where archaeological remains are believed to exist. Success relies on using staff qualified and experienced in both geophysics and archaeology. Surveys should be conducted with the appropriate methods and practices in accordance with guidance set out by the Institute for Archaeologists and English Heritage. Data can aid greatly in targeting archaeological digs by supplying accurate data from which initial interpretations of archaeological remains can be made.

Geophysics can also play an important role in the detection of human remains and other buried objects, in particular clandestine unmarked graves, as part of forensic investigations.

Survey examples
Locating Historic Ruins
In the example above an integrated geophysical survey comprising earth resistance (photo above) and EM (coloured map above) was conducted on the site of a medieval abbey to determine the presence of buried foundations, walls and other remains of former standing structures of archaeological interest at the site. Buried walls have a higher resistance than compared with the surrounding soils.

This information was used by the client to target an archaeological dig. As a result of the geophysical investigation the time and expense of a large system of exploratory trenches was avoided.

Archaeological Evaluation
In the example right, a magnetometer survey was conducted over a large proposed wind farm site. The survey was undertaken so that the most sensitive archaeological areas could be avoided by the development at the planning stage. Due to the scale of the site, preliminary detailed surveys were conducted around each turbine position and along each construction route. Areas of particular archaeological potential were identified for targeted follow-up surveys.

Magnetometer survey data showing numerous circular features which are interpreted as ring ditches
Locating archeological features

Interpretation and Excavation

In the example right on the site of a proposed windfarm in Leicestershire, the data shows a large anomaly in the eastern field (A) which is related to a capped coal mine shaft. In the western field, the data shows numerous linear and strongly circular features indicative of human activity (B).

Subsequent trial trenching (marked C) across the circular feature encountered a ditch filled with animal bones and mid to late iron age pottery.

This is a good example of how excavation can be targeted to avoid ‘blind trenching’. The data also shows how more recent human activity can completely mask the response from previous activities.

Locating Graves over a Historic Burial Ground

Ground Penetrating Radar (GPR) was used over a historic burial ground. The technique offers a quick and reliable means of detecting buried objects such as unmarked clandestine graves. The use of GPR is ideal because it is non-destructive therefore preserving the cemetery and the graves. As shown below the reflection anomalies recorded in the data are interpreted to provide extent depth and location.

For further information, visit us at www.rsk.co.uk or contact:
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