

The Resistance Profiler

A portion of the survey fund is used to enhance Geophysical equipment

As there was some money left in our fund, raised by members a while ago, we have used some to buy a profiling kit to add to the old TR resistance meter. This uses the existing electronics, but provides a set of individual probes which are laid out in a long line in the ground, and connected by new cables. This equipment gives the old TR resistance meter a new lease of life as a profiler.

John Oswin

Its advantage is that it does not produce a plan picture, but an elevation. It is like being in the ground and looking at what is in front of you, so that you can see the different features at different depths. You can of course then do several sections next to each other and use these to produce a three-dimensional picture. This is best done as 'depth slices' looking at all the features at, say one metre below ground level, and then all the features at one-and-a-half metres below ground level, rather as if it were a poor man's version of ground-penetrating radar. Needless to say, we have done this, but it requires colour pictures for easy interpretation, so I cannot include such in Camertonia this year.

The kit looks down to a maximum depth of three metres, although the area covered gets narrower at greater depths. We tried it first on Homefield. On the south side of the stream, opposite our mediaeval excavations, we had found an ancient drainage system by geophysics, and also a building. Using the profiler, we were able to show that the building lay quite deep, mainly two metres down, and was lower than the drains. We still cannot date the building, but we can say it is much earlier than the drains, and we know from map evidence that the drains had gone out of use before 1840. We did twenty profiles here to build up a picture of the building. We also did a few profiles around the excavation, picking up the trackway, and walls that continue from the excavation site, but these were all quite shallow features.

Over the course of the Blacklands dig, we used the profiler on lower part of the field, below the ring ditch, and produced some evidence to support my belief that there could be a second Roman villa there. A note is available on this for anyone who is interested.

We have also used the profiler to build up a series of sections through the building which we discovered in nearby Laverton churchyard two years ago. This building now appears to be close to the surface, but is on an alignment which corresponds with a possible earlier church under the present building. This work is still in progress at time of writing.

It is a very useful tool, but quite hard, backbreaking work to use as the contact wires have to be moved to different combinations of four of the probes over a whole series of measurements. We are hoping to alleviate this by building a patch panel which lets us set up all the combinations of probes from one position, but that is one task to do amongst many in improving our geophysics capability.

Figure 1
Students operating the new profiler.



Figure 2
A vertical profile through the building on Homefield. You can see the bulk of the building at about two metres depth, and can just see the lines of three drainage ditches near the surface. There appears to be undisturbed ground below the building. Note the profile gets narrower the deeper it looks.

