

Geophysics at the Royal Crescent

Geophysical survey of the lawn indicates a Late Bronze Age ditch is part of a settlement enclosure

Janet Pyke and John Oswin

A bonus of geophysical investigation is that with a considerable time spent walking over one area there is the chance to appreciate the surrounding views and their changes in the light and weather. When BACAS obtained permission to work in front of the Royal Crescent (*see Figure 1*) this was certainly true, even in spite of at least one torrential rain shower that failed to dampen the enthusiasm of our team.

This work was a project that arose from Janet's interest in the possible existence of Roman military remains in the area. In discussing this idea in relation to the geophysics undertaken for the Time Team television team's investigation in the area in 2002¹, it was clear that additional geophysics would be useful. In their Channel 4 programme broadcast as "Death in a Crescent", Time Team's interest in the lawn had centred on excavation of the Roman road crossing it from behind Royal Crescent, and burials alongside². Their work also revealed a stretch of Late Bronze Age ditch about two thirds of the way across the lawn. Time Team did not cover the whole of the lawn with their resistance survey. We decided that their information could possibly be added to with magnetometry, and the first investigation that the BACAS team undertook was using this technique. In June a small group of volunteers started early in the morning and supported John in his very efficient magnetometry survey of the lawn. The image of the results is shown in Figure 2a. This image proved to be noisy due to the continued archaeology of the area. The area had been fields for many centuries; becoming part of the Barton of Bath, then was used for building works for the Royal Crescent. The lawn then became part of Royal Victoria Park in 1830. It was used as allotments during WWII, and now it continues its use as a place of leisure activities with associated litter, including bottle tops. However in spite of the noise, the magnetometry image shows that there is a strong indication that the Late Bronze Age ditch was part of an enclosure, with a possible ring feature in the corner (*see Figures 2a and 2b*). There is also a distinct row of signals across the middle bottom of the lawn. Other, less distinct, information may well be hidden by the large mass of signals.

Following examination of these magnetometry results, a second project was undertaken by the BACAS team to include a resistance survey of that part of the lawn not surveyed by GSB Prospection for Time Team. This work was carried out in October 2012. We are very grateful to Dr John Gater who has given us permission to present our results together with those obtained by Time Team¹. The two sets are put together in Figure 3 to cover the whole lawn. The continuity of the enclosure is clearly shown in Figure 3, with its negative lines of ditches coinciding with the ditches seen in magnetometry, though the left hand ditch cannot be distinguished in a large area of negative values that we observed. Two resistance profiles were carried out towards the corner, over the ditches of the indicated



Figure 2a
Magnetometry survey of the lawn. (All satellite maps ©Google Earth).



Figure 1
Geophysics on the lawn.

enclosure, 7m apart, the second being displaced to the right. These are shown in Figures 4a and 4b. The ditches of the enclosure can clearly be seen. The Late Bronze Age finds in the Time Team excavation of the ditch had indicated it might be part of a possible settlement enclosure², and this work seems to confirm that proposal.

In Figure 3 a large prominent northwest to southeast linear feature can be distinguished crossing diagonally down into the top of the lawn on a similar orientation to the southern ditch of the enclosure. It is clearly seen at the top of the lawn, but is not apparent towards the bottom. We decided to take a resistance profile across this at the top of the lawn (*see Figure 5a*) and across its projected line towards the bottom (*see Figure 5b*), diagonally across our grid pattern. These both contain a large deep area that seems to demonstrate that this large ditch-type feature crosses the lawn. What it was is not obvious. There are the possibilities that it could be an old route or branch of Mud (Mad) Brook that ran down the Marlborough Buildings line, or a large ditch acting as a boundary or some other feature.

The team also investigated the site of a known hole under the lawn. This was revealed when a lorry

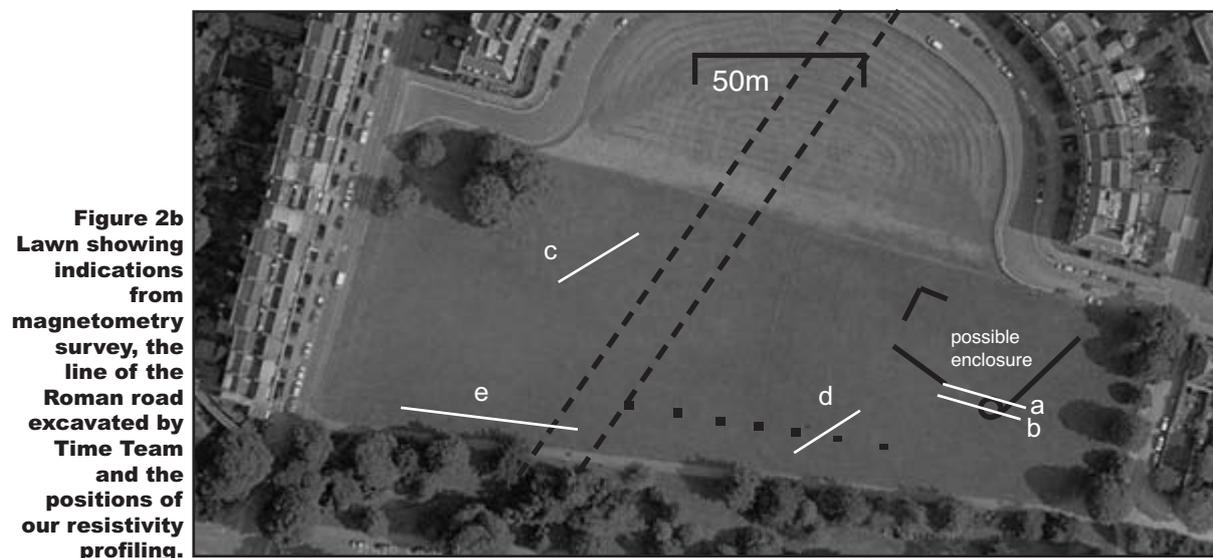


Figure 2b
Lawn showing indications from magnetometry survey, the line of the Roman road excavated by Time Team and the positions of our resistivity profiling.

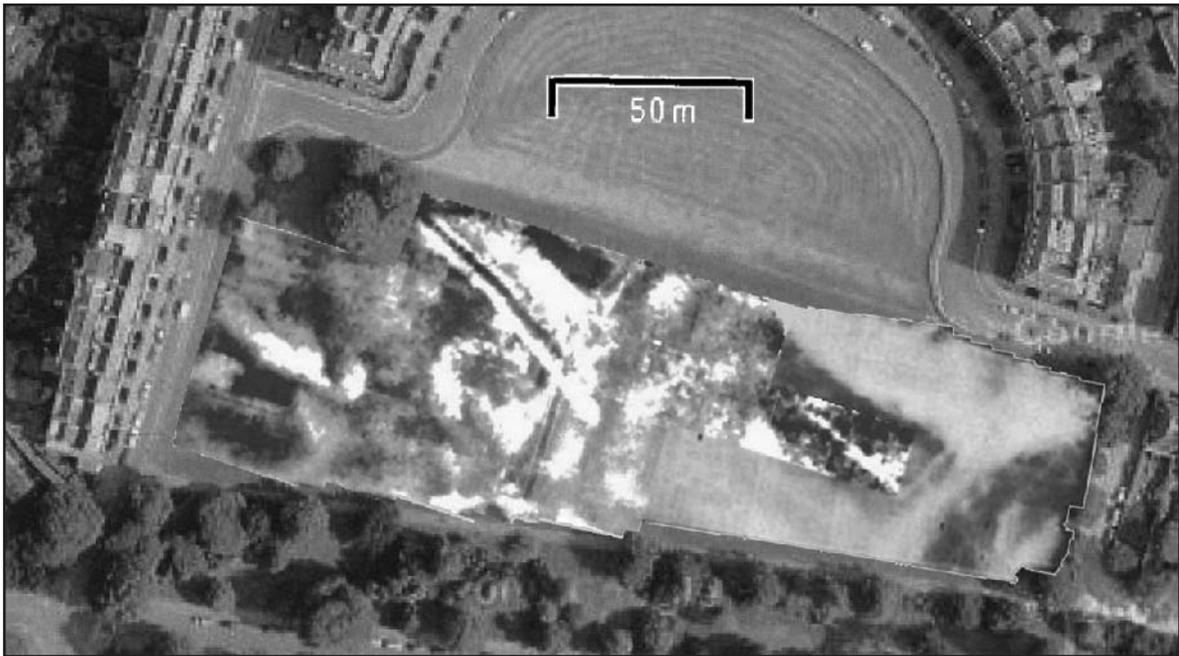


Figure 3
Composite of resistance surveys from Time Team (LH area) and this project (RH area).

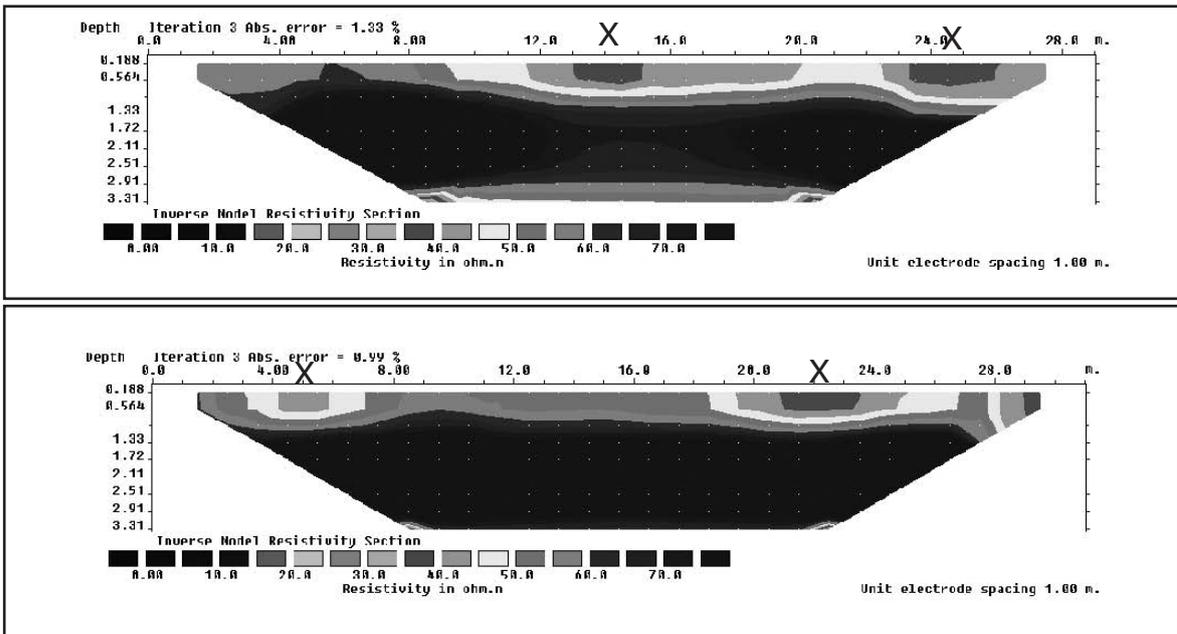


Figure 4a and 4b
Resistivity profiles across corner of enclosure (a&b in Figure 2b) indicating ditches (X).

subsidied into it before a concert in the Park in 2003, and a second hole then appeared in the bank below the lawn in the clearing operation³. At this time these holes were investigated briefly before being filled and their pit-like nature was observed. A dark area indicating the site can be seen on the Time Team geophysics, coincident with a dark green area of grass. It is just over 5m from the path and about 50m in from the western edge of the lawn. We looked at this area using resistance, and also with resistance profiling and ground penetrating radar. The results are shown in Figures 6a & 6b, with the void area towards the middle of the images, and in 6c ground penetrating radar results illustrate two sections crossing this chamber area and a slice across it. As well as indicating their size, these results also demonstrate the multiplicity of these holes in this area.

Other resistance analysis, ground penetrating radar and profiling work was also carried out elsewhere on the lawn but showed no obvious further results, including anything to account for the line of strong signals seen across the lower middle of the lawn in magnetometry (see Figure 2b). However, further examination of the resistance image shown in Figure 3 does show other hints of

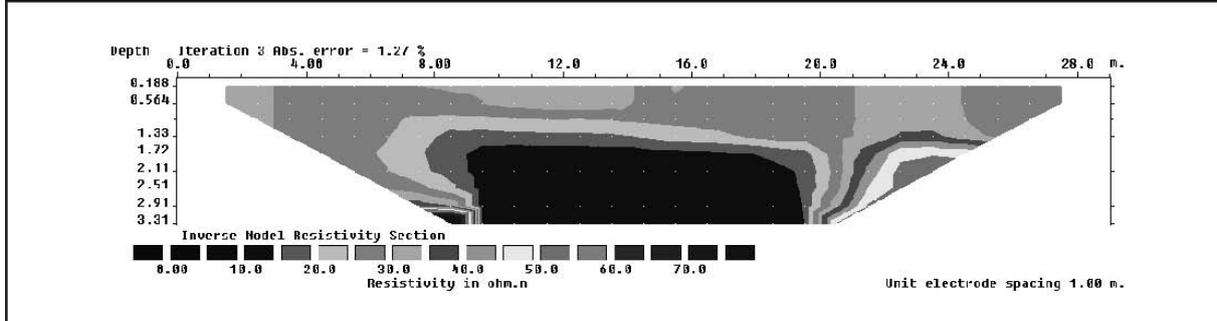
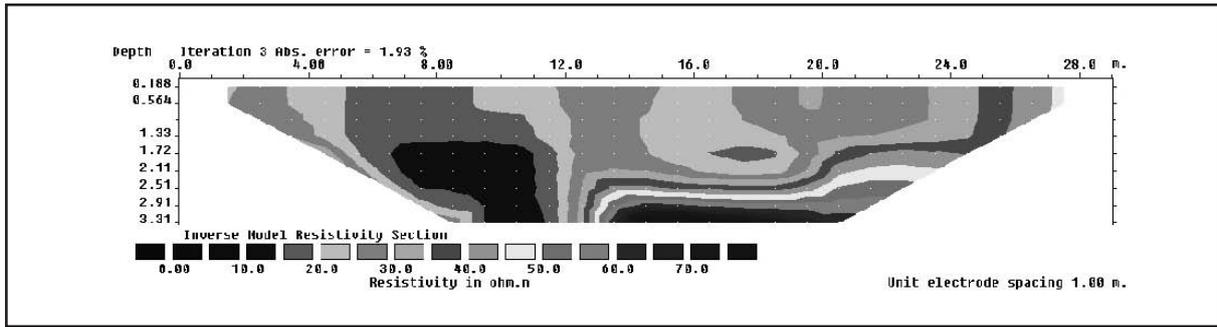


Figure 5a and 5b above
Resistivity profiles along the ditch-like feature (c&d in Figure 2b).

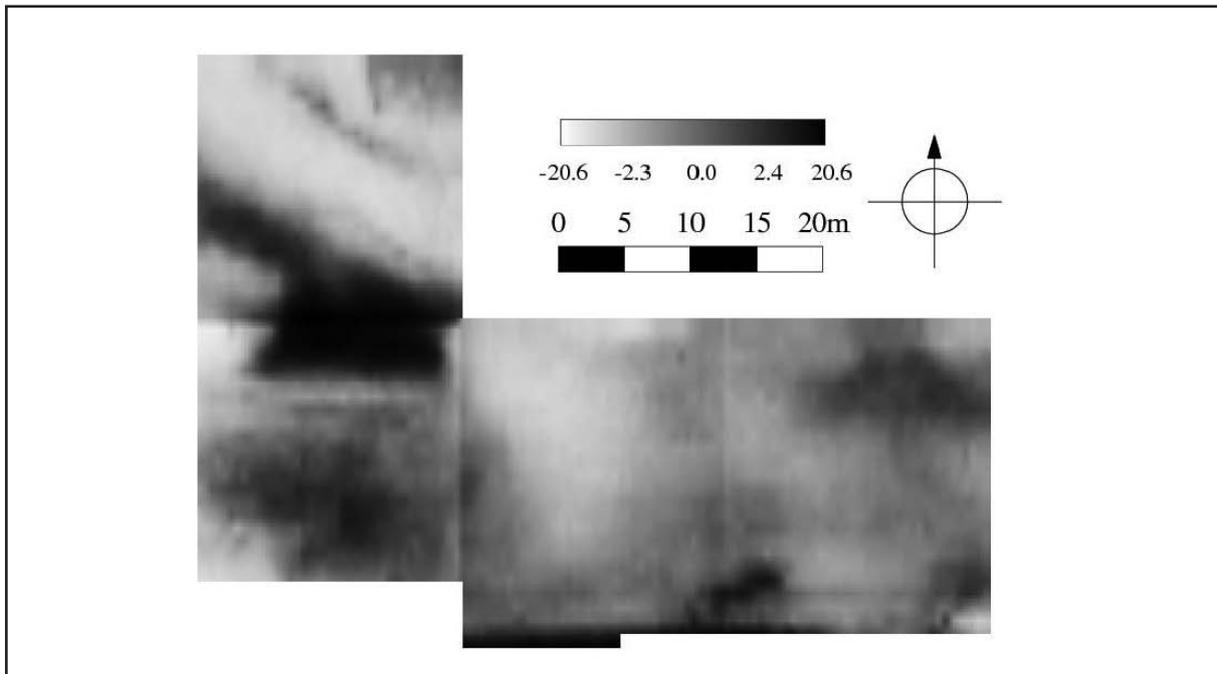


Figure 6a above
Additional resistance survey of area in the south west of the lawn.

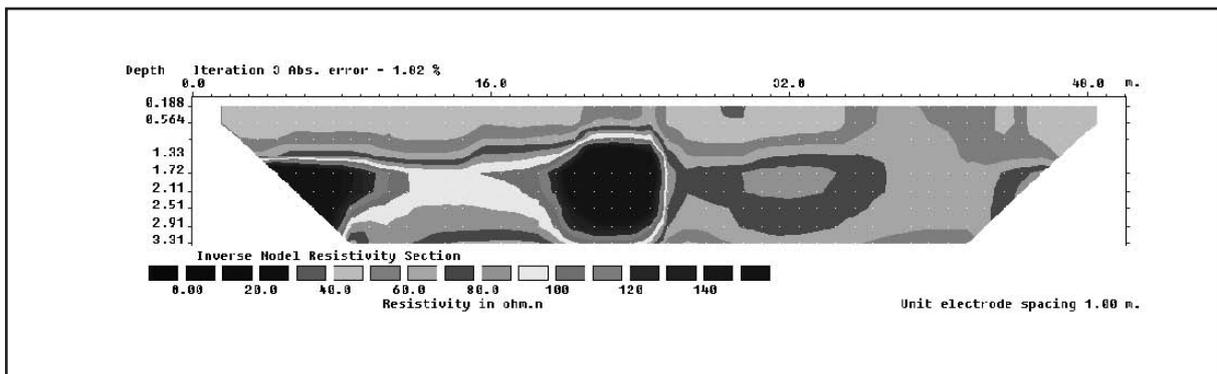


Figure 6b
Resistivity profile across X-Y in Figure 6a (profile e in Figure 2b).

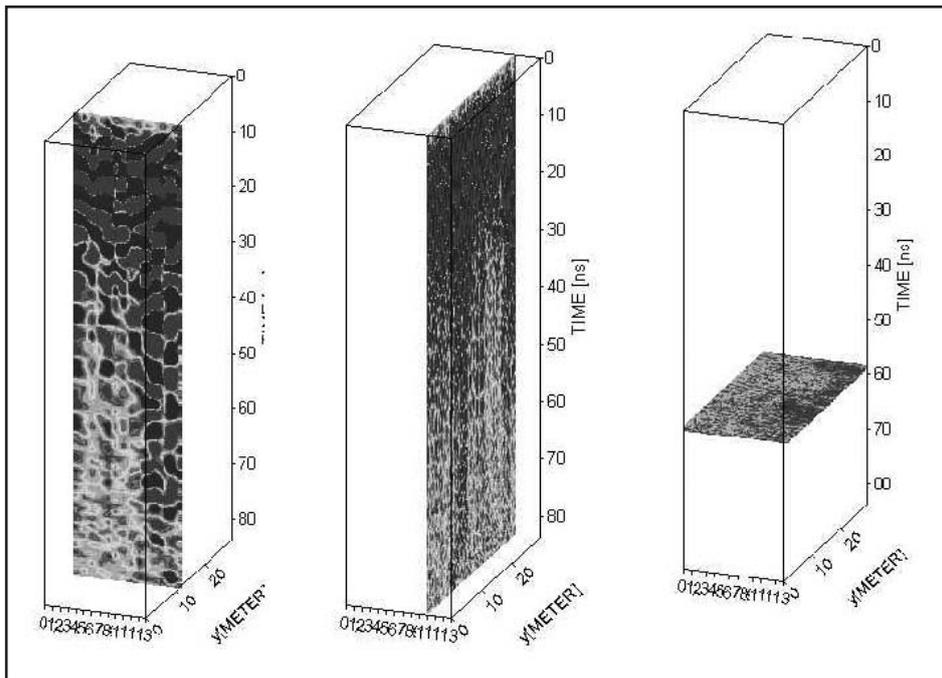


Figure 6c
Ground penetrating radar over void area, two slices crossing void, and corresponding section.

features indicated, including a series of parallel negative linear resistance anomalies across the western side of the image, one of which was replicated in our survey, as well as a dark rectangular block. At right angles to this direction there are vertical indications running down the middle of the lawn including one dark grey line. They are not on the orientation of the WWII allotments. No evidence for buildings under the lawn was found in the Time Team excavations², and this area has been clearly labelled in historical documents as “never to be built on”⁴ as are the Commons to the west. The reasons for these patterns observed in this geophysics require further explanation.

Conclusion

With this complete resistance and magnetometry survey of the lawn and the further analysis, this work has given us increased information about the area. The confirmation of the Late Bronze Age settlement enclosure is an important part of our results. Further comparison of these results with archaeological information, both for this area and the areas around, will add further to the picture of the historical role of this land, long before it became this very popular lawn below the Royal Crescent Ha-ha.

Acknowledgements

Thanks are due to John Gater, of GSB Prospection for our communication with him and his permission to use the Time Team geophysics results. We also very much appreciate the discussions we have had with Marek Lewcun about the work. We are very grateful for the kind permission of the B&NES Parks Department to carry out this work on this lawn. We wish to thank the efficient and supportive team of volunteers and helpers especially: Adam Aust, Rick Buettner (thanks also due for recording our efforts with his photography), Sandra Heward, Chris Higgs, Denise Hillier, Dawn Hodgson, Mary Huntley, Andy Kingan, John Knapper, Tim Lunt, Patrick McCarron, Di Parkin, Ian Perkins, Sue Pickering, Emma Pryke, Susan Rhodes, and Richard Wyatt. This work was supported by the B&NES Archaeological Officer, Richard Sermon.

References

1. GSB Prospection, Geophysical Survey report 2002/88, Julian Road and Royal Victoria Park, Bath, 2002
2. Davenport, P, Julian Road and Royal Victoria Park, Bath. Evaluation Report, Time Team/Bath Archaeological Trust 2004
3. Marek Lewcun, personal communication
4. John Wood’s lease documents for building the Royal Crescent 1764 Bath Record Office 0810/7/1