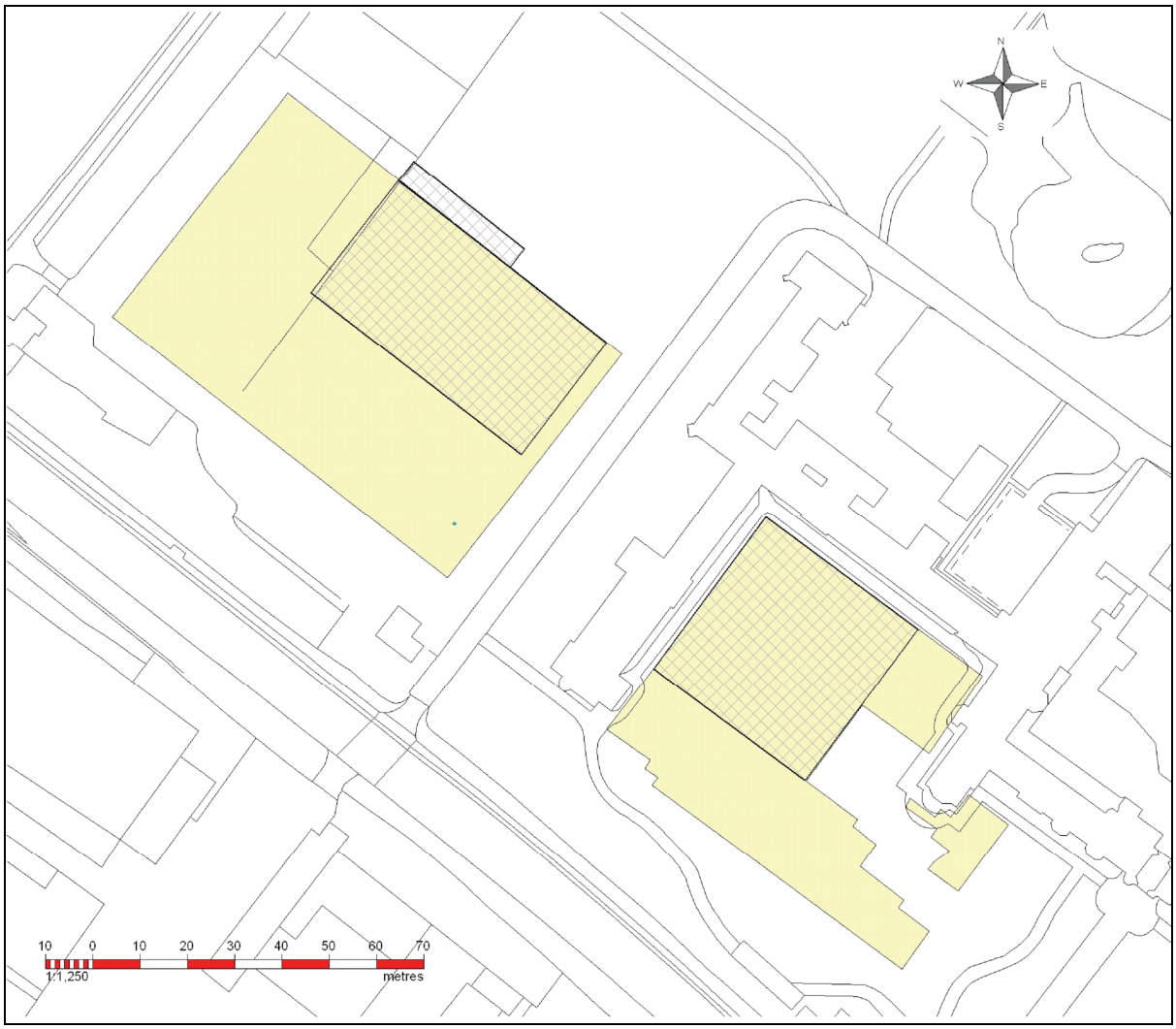
Girton College Report

In February and March 2013 Archaeology RheeSearch Group carried out magnetometry and resistivity surveys on this site at the request of the college to determine whether evidence of any subsurface features was detectable in the western area and whether any evidence of a cemetery boundary or graves was detectable in the courtyard (eastern) area.
Members participating: Brian Bridgland, Bruce Milner, Pat Davies, Jane Frost, Ian Sanderson, Gill Shapland, Maureen Storey, Tony Storey.
Site Liaison: Dr Liliana Janik
Site conditions: Grass sports field with asphalt area (W), close mown grass (E).
Equipment: Bartington 601 gradiometer; TRCIA 50cm twin probe.
Area covered: Magnetometry; six 30 m × 30 m grids (W), ten 20 m × 20 m grids (E)
Resistivity; 1830 m^2 (W), four 20 m × 20 m grids (E)

Location: TL 423610, North side of Huntingdon Road, Cambridge.



Location plan: Survey areas at Girton College
(Resistivity survey areas are crosshatched, magnetometry areas are solid.)

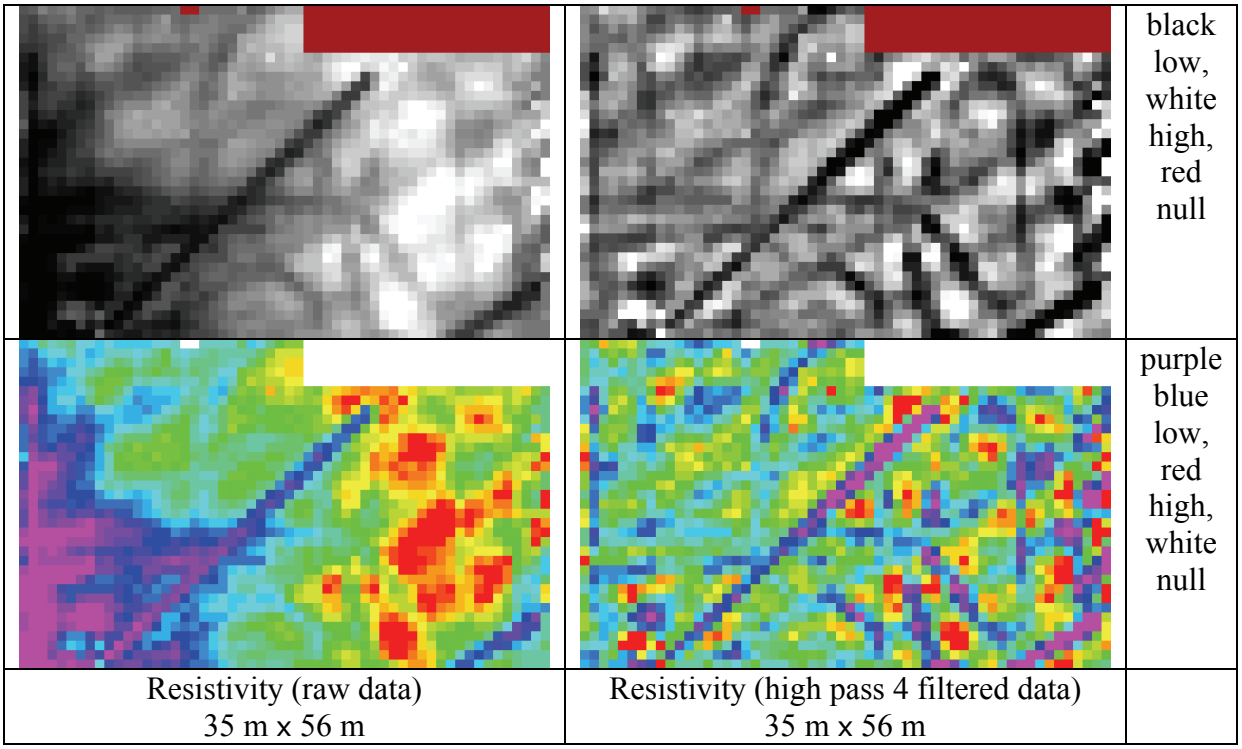
Images are orientated with north to the top of the page except where indicated otherwise.

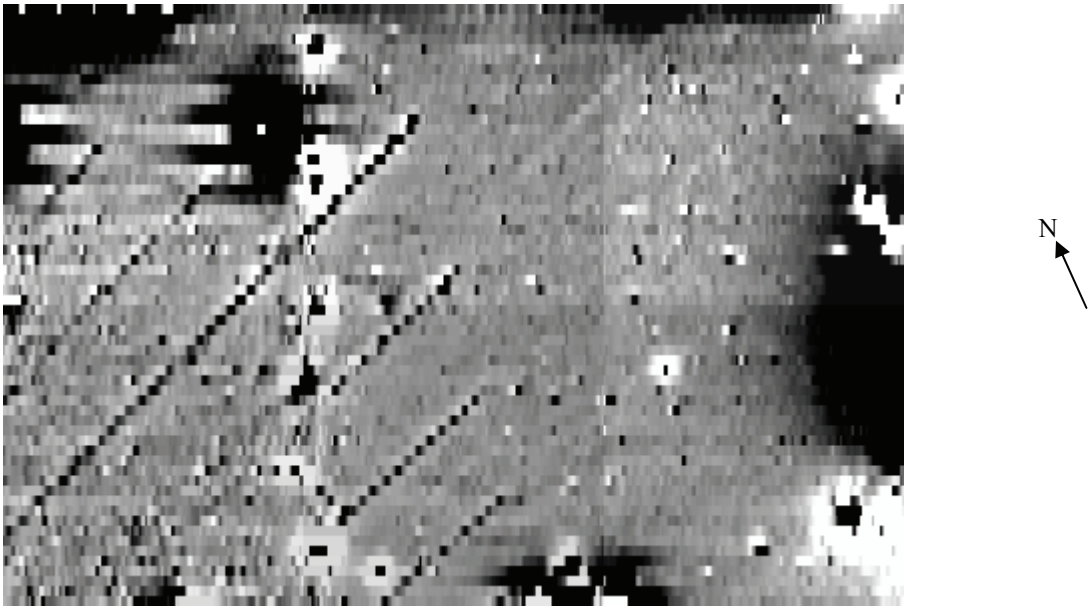
West Area.

Purpose of survey: To determine if any subsurface structures were detectable.

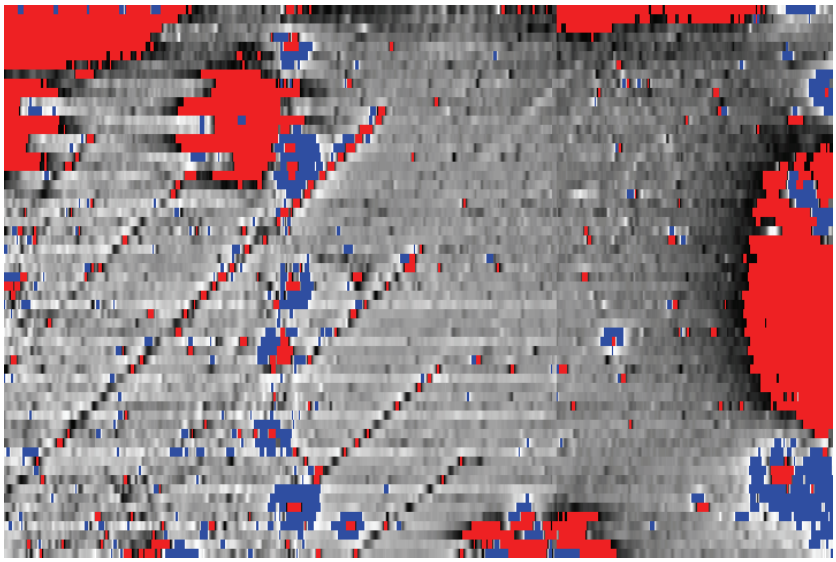
Results.

Individual survey area results, rotated for presentation



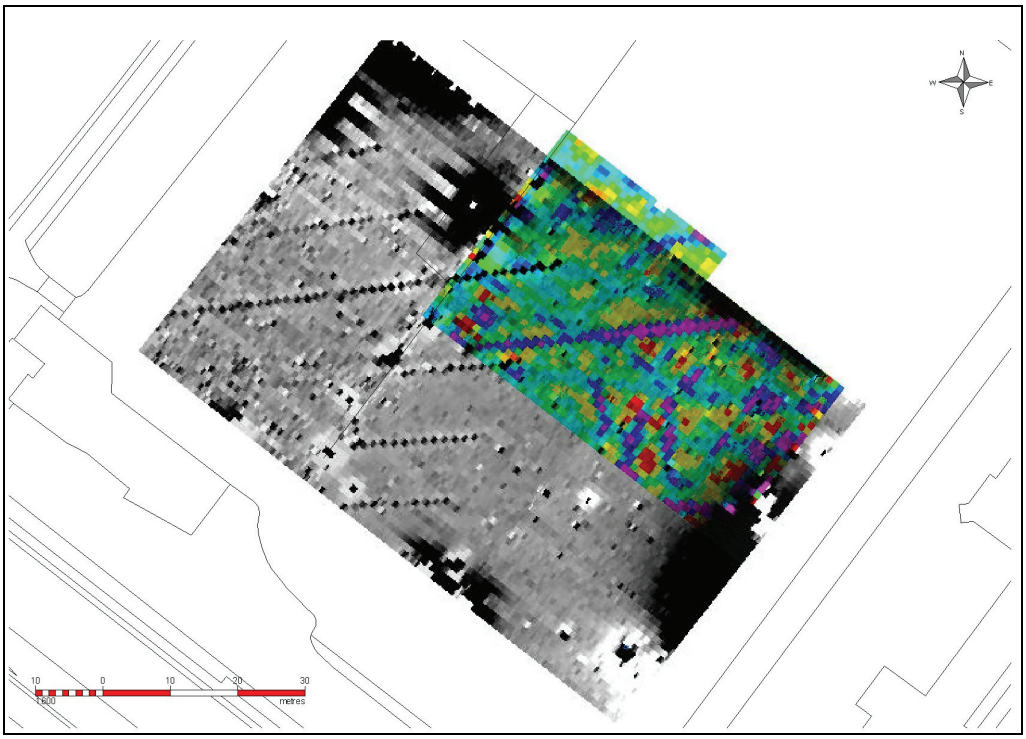


Magnetometry +16 to -12 nT
60 m x 90 m



N

Magnetometry +16 to -12 nT showing extreme values
60 m x 90 m



Superimposition of resistivity and magnetometry results.

Discussion

This site had metal construction fencing along the NE side and a lorry of construction materials on the SE side and included a tarmac court with metal posts at the N corner and some goal posts to the SW on the day of this survey. All of these features and a drain cover in the S corner produced strong magnetic signals which obscure any useful magnetometry data in the areas in close proximity to them. The extreme values magnetometry image above shows those areas, a series of parallel linear features running E-W and an interrupted

sequence of signals running NE-SW. In addition there is a high background scatter of strong magnetic signals.

The parallel linear features are almost certainly clay field drains and the interrupted linear feature is characteristic of jointing along a pipeline, but could be metal fence post bases from a fairly recent boundary. There are indications of field drainage with a slightly different alignment to the E of the magnetic survey which show strongly in the resistivity results suggesting a trench and gravel construction where the moisture cannot flow away as easily as in a drain pipe.

The resistivity results show continuations of the same drainage channels that show up strongly in the magnetometry as well as one particularly low valued linear feature on a different alignment. The latter runs through a rectilinear high resistance structure at the W corner of the resistivity survey area, possibly foundations of a small building. There may be another similar feature to the S, centred about 17m due N of the S corner of the survey area on the same alignment as that on the W, but at least one drainage channel passes directly through it preventing a conclusive identification. Some of the patterns visible as weak low signals in the greyscale resistivity images may be due to whitelining to mark out sports pitches.

East Area.

Purpose of survey: To determine if any cemetery boundaries are detectable using geophysical methods.

Results.
Individual survey area results, rotated for presentation

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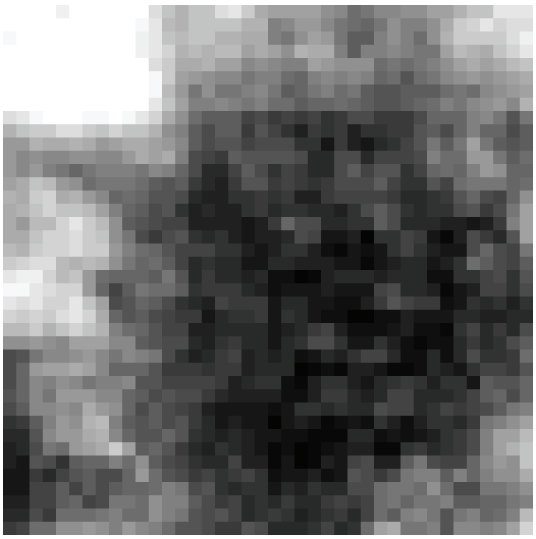
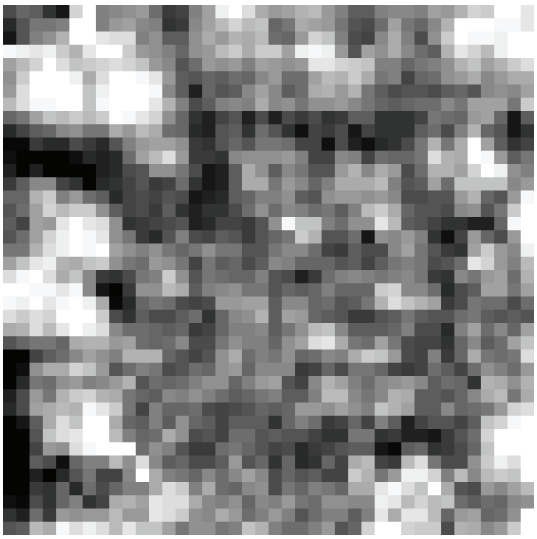
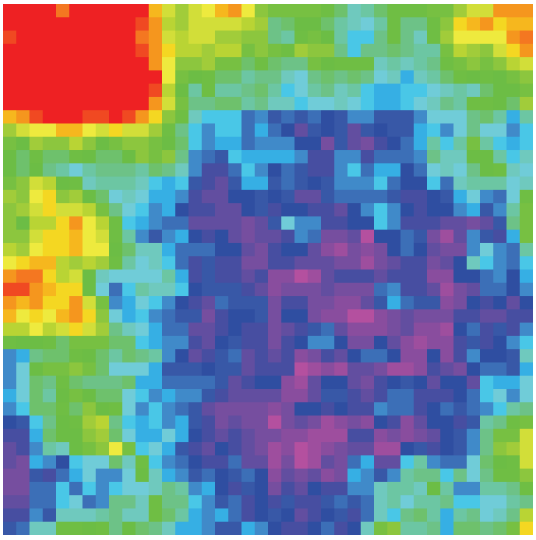
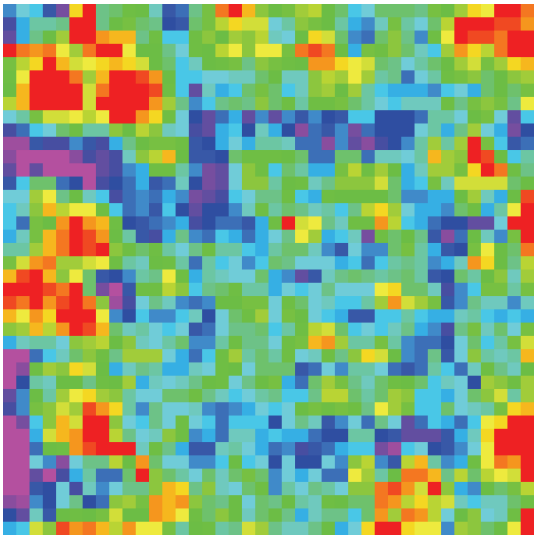
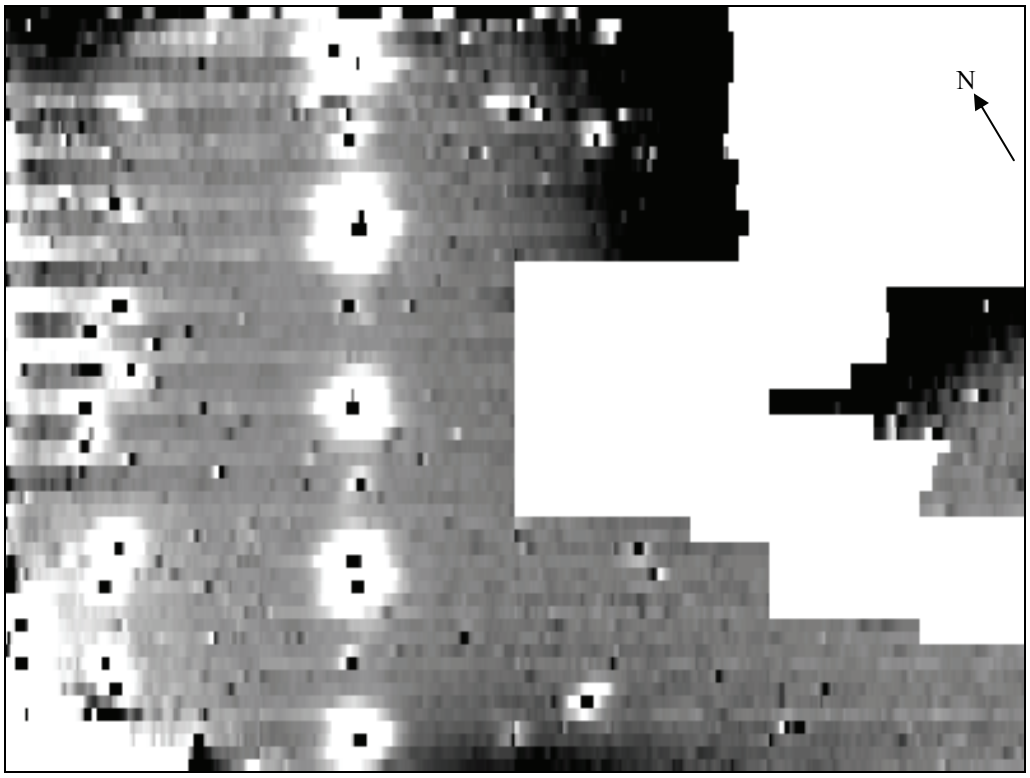
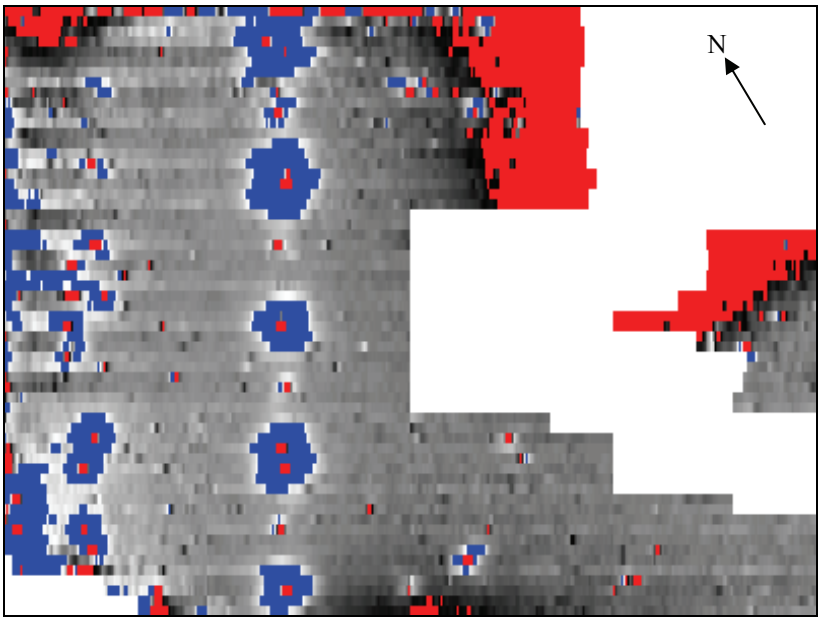
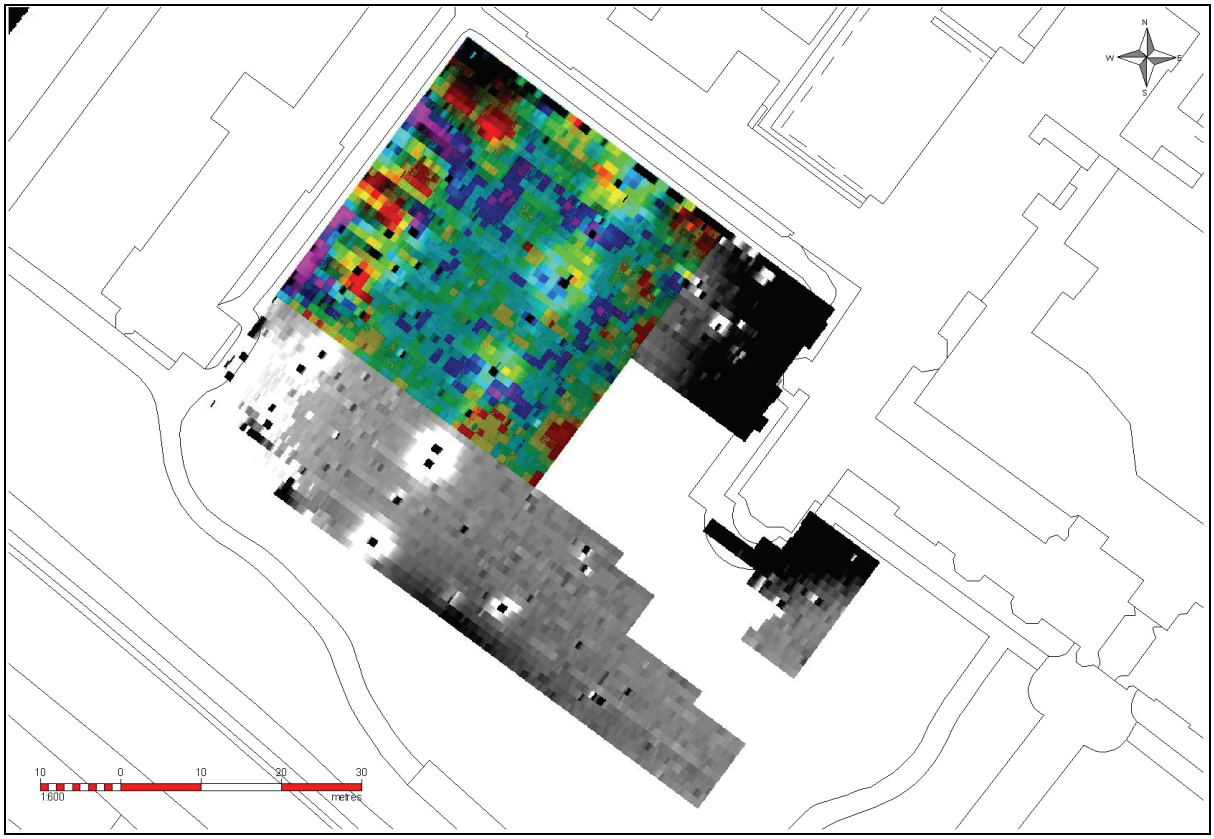
		black low, white high N
		purple blue low, red high N
Resistivity (raw data) 40 m x 40 m	Resistivity (high pass 4 filtered data) 40 m x 40 m	



Magnetometry +20 to -20 nT
80 m x 60 m



Magnetometry +16 to -12 nT
(peak values red, lowest values blue)
80 m x 60 m

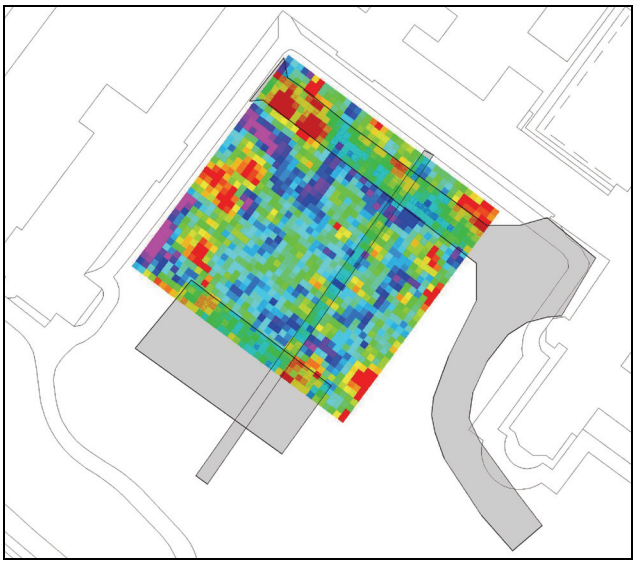


Superimposition of resistivity and magnetometry results.

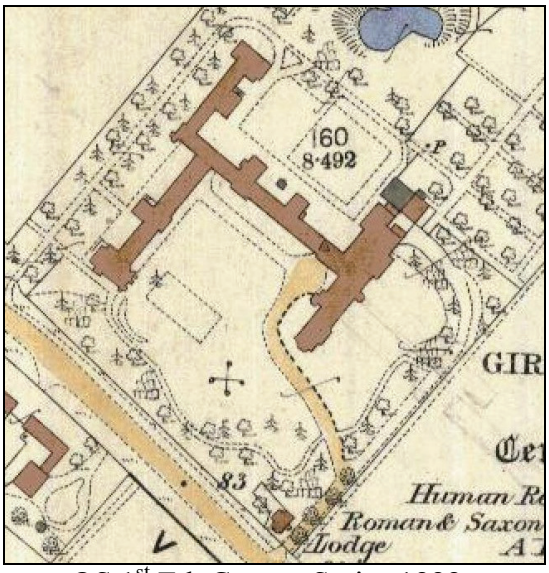
Discussion

This site has a high level of background magnetic noise due to the buildings on three sides. This masks most of the magnetic signal from any archaeological features. This is compounded by service connections to the wing to the NW and a pipeline running NE-SW across the survey area.

The low value resistivity results form a rectangular outline slightly off centre of the survey area which is best seen on the coloured filtered image above. The sharp delineation on the NE side is coincident with the edge of a path shown on the 1888 map shown below. The SW, more diffuse line is 3-4 m NE of the edge of a 13 x 27 m feature shown on the same map, presumably a tennis court. Both of these sides have a discontinuity matching the pipeline shown in the magnetometry results. The high resistance features can largely be discounted being associated with entrances (centre NW edge, E corner), earlier paths (N corner), or trees (W and S corners). This leaves a patch on the SW edge adjacent to the line of the pipe shown in the magnetometry, and a patch about 8 m from the W corner of the survey area, both of which are anomalous. The low values along the NW side may be due to path edge drainage and the low values extending into the survey area from the same side may be a similar soakaway.

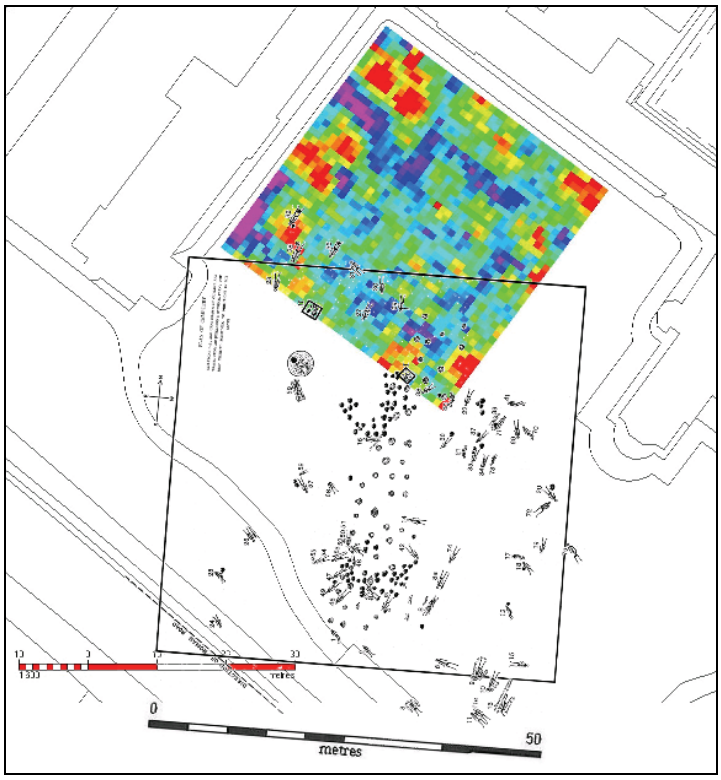


Resistivity with pipeline and features from the 1888 map



OS 1st Ed. County Series 1888

Overall the magnetometry which might have been the more effective in identifying a boundary ditch to a cemetery site, has been swamped by the magnetic background on the site. The resistivity has some features, particularly as lower values, which are anomalous. A case could be made for a boundary showing as the line of low resistance values parallel and a few metres to the NE of the tennis court area placing the Jenkinson record (Hollingworth and O'Reilly, 2012) as shown below if the NE edge of the recorded graves follows that boundary and the road line is correct. This is compatible with the von Hügel record (ibid), if it is taken that the first skull discovered was in the foundations for the SW side of the Tower wing. On this basis further burials may be under the lawn adjacent to the access drive.



Jenkinson plan alternative positioning.

Reference: Hollingworth, E. J. , and O'Reilly, M. M. (2012).
The Anglo-Saxon Cemetery at Girton College, Cambridge: A Report based on the MS Notes of the Excavations Made by the Late F. J. H. Jenkinson, MA. Cambridge, UK:
Cambridge University Press.
Final diagram rescaled from Cambridge Archaeological Unit Report No. 1006, 2011.

Raw data are available as two separate appendices.
Magnetometry readings: 8/m, 1 m separation.
Resistivity readings: 1 m interval, 1 m separation.

Report by Dr I Sanderson for Archaeology RheeSearch