ARCHAEOLOGICAL SERVICES WYAS

Spital Farm
Staxton
North Yorkshire

Geophysical Survey

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Report No. 1428

CLIENT

Mr Honeybell

Spital Farm

Staxton

North Yorkshire

Geophysical Survey

Contents

Summary

A geophysical evaluation covering an area of 5 hectares and comprising both magnetometer and earth resistance surveys was carried out in a field to the west of Spital Farm, Staxton, part of which is a Scheduled Ancient Monument thought to be the site of a medieval hospital. Anomalies corresponding to upstanding earthworks as well as to other previously unknown sub-surface features have been identified both within and beyond the scheduled area. These anomalies are indicative of infilled ditches forming possible enclosures as well as discrete anomalies indicative of pits, areas of burning and possibly graves. It is not clear whether any of the identified anomalies is associated with the former hospital although the type and morphology of the anomalies is suggestive of more than one period of activity.

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Archaeological Services WYAS

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1. Introduction and Archaeological Background

1.1 Archaeological Services WYAS was commissioned by Ms Paula Ware of MAP Archaeological Consultancy Ltd on behalf of their client Mr Honeybell, the owner of Spital Farm, to carry out a geophysical survey on land to the west and south-west of Spital Farm, Staxton (see Fig. 1), part of which is protected as a Scheduled Ancient Monument (Monument No. NY558). The site is centred at TA 0236 7947 (see Fig. 2) and covers an area of approximately 5 hectares. Field boundaries to the north and west, the A64 to the south and Spital Farm and associated outbuildings demarcated the survey area.

1.2 Topographically the site was relatively flat at about 40m Above Ordnance Datum (AOD). The local geology comprises glaciofluvial drift over Ampthill and Kimmeridge clay with the overlying soils being classified in the Newport 1 soil association. These soils are deep well drained sands and coarse loams. The survey was carried out between July 27th and August 4th 2005. No problems were encountered during the fieldwork.

1.3 Spital Farm, Staxton is thought to occupy the site of the medieval hospital of Saint Mary founded by Bridlington Priory and is also located at the southern end of an important medieval route heading northwards across the Vale of Pickering. The hospital is believed to be at least partially located within an area to the west and north of the farmhouse (now a private residence) that contains several earthworks. The area bounded by the linear earthworks is now a scheduled ancient monument.

1.4 The first archaeological investigation at the site was undertaken in 1950 by Tony Brewster. The possible remains of a medieval building and some disarticulated human remains were uncovered and more recently further burials dating to the Anglo Saxon period have been discovered during the excavation of a pond to the south of the house (see Fig. 2). It is thought probable that these burials come from the same cemetery indicated by burials discovered to the south of the A64 in 1937.

1.5 Prior to the geophysical survey a field visit was undertaken by English Heritage (Pearson 2004) following an enquiry by the landowner for permission to landscape the field to the west of the farm. This survey concluded that the most prominent bank and ditch earthwork that runs parallel with and 30m north of the A64 was probably either the continuation of the medieval village street with which it aligns or is a medieval approach to the hospital. It is unclear whether the ploughed down bank that intersects with the probable trackway defines the precinct of the medieval hospital or whether they represent post-medieval close boundaries.

2. Methodology and Presentation

2.1 The objectives of the geophysical survey were to establish the presence, absence, extent and nature of any archaeological features within the scheduled area in order to inform a possible decision regarding landscaping. This was to be achieved by undertaking detailed magnetometer and resistance surveys across the whole of the scheduled area, approximately 3 hectares. However, the client requested that an additional area to the west of the scheduled area

also be surveyed. It was therefore decided, in agreement with the clients archaeological consultants, that only 2 hectares of resistance survey would be undertaken allowing the additional 2 hectares of magnetometer survey to be carried out in the same time. The location of the resistance survey was to be determined on the results of the magnetometer survey.

2.2 A Bartington Grad601 magnetic gradiometer was used during the survey with readings being taken at 0.25m intervals on zig-zag traverses 1m apart within 20m by 20m grids. The readings were stored in the memory of the instrument and later downloaded to computer for processing and interpretation using Geoplot 3 software.

2.3 The resistance survey was carried out using a Geoscan RM15 resistance meter with a multiplexer with the instrument logging each reading automatically at 1m intervals on traverses 1m apart. The mobile probe spacing was 0.5m with the remote probes 15m apart and at least 15m away from the grid under survey.

2.4 The survey methodology, report and any recommendations comply with guidelines outlined by English Heritage (David 1995) and by the IFA (Gaffney, Gater and Ovenden 2002). All figures reproduced from Ordnance Survey mapping are done so with the permission of the controller of Her Majesty's Stationery Office. © Crown copyright.

2.5 A general site location plan, incorporating the 1:50000 Ordnance Survey mapping, is shown in Figure 1. Further detailed location plans showing the magnetometer and earth resistance data are presented in Figures 2 and 3 at a scale of 1:2000. Figure 4 contains the 1st edition Ordnance Survey map showing the approximate scheduled area together with modern Superplan data at a scale of 1:2000. The processed magnetometer and earth resistance data are displayed in greyscale format, at a scale of 1:1250, in Figures 5 and 9 with an interpretation of the anomalies at the same scale in Figures 6 and 10. Figure 7 shows the unprocessed ('raw') magnetometer data as an XY trace plot. A 1:500 XY trace plot of probable archaeology is shown in Figure 8. A combined interpretation of the two sets of data is presented in Figure 11. Figures 12 and 13 show relief plots of the magnetometer and earth resistance data.

2.6 Information on the technical background to the two survey techniques as well as on data processing and display are given in Appendix 1 and Appendix 2. The Section 42 Licence is shown in Appendix 3. The survey location information is presented in Appendix 4 and the composition of the site archive comprises Appendix 5.

The figures in this report have been produced following analysis of the data in 'raw' and processed formats and over a range of different display levels. All figures are presented to most suitably display and interpret the data from this site based on the experience and knowledge of Archaeological Services staff.

3. Results

3.1 Magnetometer Survey

3.1.1 Very few isolated dipolar anomalies ('iron spikes' - see Appendix 1) have been identified within the survey area. These 'iron spike' anomalies are caused by ferrous objects either on the ground surface or contained within the upper soil horizons. Although archaeological artefacts may cause these anomalies they are more often caused by modern cultural debris that has been introduced into the topsoil usually as a consequence of manuring. It can be surmised by the lack of these anomalies that the site has not been ploughed much for arable cultivation in the modern period.

3.1.2 Four areas of magnetic disturbance have been identified towards the edges of the site. The two anomalies to the north of the field are due to the metal supporting cables for wooden electricity poles and the larger disturbed area on the western field edge has been caused by the proximity of an iron field gate. The fourth, to the east of the site is caused by assorted ferrous rubbish.

3.1.3 Perhaps the most obvious responses are those caused by surveying over the upstanding earthworks that are aligned broadly parallel with the A64 along the southern edge of the site. Here the two strong parallel linear anomalies (**A**) correspond with two banks (see Plate 1). There is an apparent break in the anomaly caused by the more northern of the two banks although there was no corresponding break in the earthwork.

3.1.4 Towards the western side of the site three linear anomalies can be seen intersecting with Anomaly **A**. The easternmost (Anomaly **B**) also corresponds with a linear earthwork (less substantial than the banks to the south – see Plate 2) that can be seen continuing to the northern edge of the survey area although the magnetic response becomes intermittent near the fence line due to the presence of spoil generated from the creation of the pond to the south of the farm.

3.1.5 West of Anomaly **B** the two relatively stronger anomalies (**C**) are not visible as earthworks and are considered likely to be caused by infilled archaeological ditches. These anomalies appear to turn through 90° approximately 120m to the north before becoming weaker and intermittent and disappearing completely before the eastern edge of the survey block.

3.1.6 The reason Anomaly **C** appears to be intermittent is probably due to ridge and furrow ploughing. Three particularly strong parallel linear anomalies (**D**), approximately 10m apart on a north to south alignment, cut across Anomaly **C** at right angles from the northern edge of the site. Even though there are no upstanding remains the magnetic contrast between the infilled furrows and former ridges provides evidence of this former method of ploughing. South of Anomaly **C** the anomalies due to ridge and furrow ploughing are still apparent but are much less strong, possibly due to the effects of modern deep ploughing.

3.1.7 A number of discontinuous, conjoining, relatively weak, positive linear anomalies (aggregated as Anomaly **E**) are visible immediately to the west of Anomalies **B** and **D**. These anomalies form a rough 'playing card' shape

approximately 40m from north to south and 30m from east to west. Three small discrete areas of magnetic enhancement have also been identified within the boundaries formed by the linear anomalies. It is considered probable that these anomalies are also probably caused by infilled cut features such as ditches or pits.

3.1.8 Numerous similar discrete anomalies have also been identified throughout the site. The majority are in a cluster (**F**) west and south of Anomaly **E** with a much smaller number south and east of Anomaly **C**. Given the known proximity of a Saxon graveyard some of these anomalies could be caused by graves although other infilled archaeological features such as pits or even modern intrusive activity could cause these anomalies. Two anomalies (**G**) have slight negative halos possibly indicating areas of burning.

3.2 Earth Resistance Survey

3.2.1 The linear earthworks to the south of the site are again immediately apparent in the resistance data with the high resistance anomaly, **H**, correlating with the flatter area between the two banks that themselves manifest as high resistance anomalies. The degraded bank that intersects with these earthworks is also identifiable as a discontinuous linear high resistance anomaly, **I**.

3.2.2 Several other high and low resistance linear resistance trends, on the same north to south alignment in the eastern half of the surveyed area, are thought to be caused by the vestiges of ridge and furrow ploughing.

3.2.3 Ten metres west of, and parallel with, Anomaly **I** are two parallel low resistance anomalies, **J**, approximately 5m apart. These two anomalies extend approximately 40m to the north before no longer standing out against the background. In this instance these anomalies are thought to be due to infilled cut features.

3.2.4 In the north-west corner of the survey area three low resistance curvilinear anomalies, again probably caused by infilled cut features, have been identified. Also in this part of the site are three larger areas of low resistance. These anomalies probably extend over too large an area to be caused by discrete archaeological features and are probably caused by modern intrusive activity or natural variations in the composition of the topsoil although an archaeological origin cannot be completely dismissed.

3.2.5 Towards the east of the survey area there are a number of high resistance linear trends parallel with the direction of traverse. These readings are not indicative of underlying features and are the result of surveying during heavy rain.

4. Discussion and Conclusions

4.1 The geophysical survey undertaken at Spital Farm, Staxton has identified anomalies of probable archaeological origin extending beyond the bounds of the medieval hospital as defined by the extant earthworks.

4.2 Most prominent of these earthworks is the double-banked feature at the southern end of the site adjacent to the current road. The banks manifest as strong positive magnetic anomalies (**A**) although the most southerly bank definitely correlates with the low resistance linear anomaly (**H**) whilst the

'depression' between the banks manifests as a high resistance anomaly. This can be explained if this earthwork was a routeway heading eastwards from Staxton, as suggested by the recent English Heritage field assessment, rather than a boundary feature demarcating the extent of the medieval hospital as previously postulated. If this were the case the surface of the trackway would naturally have become compacted through decades of use and would therefore offer more resistance to the passage of an electrical current than the relatively uncompacted banks to either side.

4.3 The much less prominent north to south aligned bank to the west has also been identified by both survey techniques (**B** and **I**). However, in this case the bank, presumed to mark the precinct of the hospital, is identified as a high resistance linear anomaly as well as a positive linear anomaly. This bank, which demarcates the western edge of the scheduled area, seems to have been truncated by ploughing in the recent past as it is far more extensive in the field immediately to the north of the survey area. A rather more prosaic explanation could be that the degraded bank has nothing to do with the hospital but is the remnant of a post-medieval close, several of which are recorded around Spital in the 17th and 18th centuries (Pearson 2004). Consequently it is still unclear whether either of these two earthworks served to define the extent of the medieval hospital but it seems increasingly unlikely that both features were contemporary with the hospital.

4.4 Also identifiable in both data sets, but not visible as upstanding features, are the parallel anomalies (**C** and **J**) immediately west of the degraded bank described in Section 4.3 above. In this case the underlying features manifest as low resistance and positive linear magnetic anomalies. These anomalies are interpreted as being caused by infilled ditch features defining a possible enclosure or farmstead. It is not possible to state whether these features are earlier, later or contemporary with either of the two earthworks described previously but the double-ditches and morphology (playing-card shape) are not dissimilar to those of a Roman marching camp.

4.5 Outside this enclosed area, much smaller in scale and also previously unknown, is a second possible enclosure near the northern edge of the survey area. In this instance there are no resistance anomalies that correlate with the intermittent linear magnetic anomalies (**E**) that define a rectangular area of approximately 1200m². Three discrete anomalies within one of the sub-divided parts of the enclosure are interpreted as resulting from possible occupational activity being either pits or areas of burning.

4.6 Further west still is another cluster of discrete magnetic anomalies of archaeological potential (**F** and **G**). Several possible causes are plausible, including pits, areas of burning or even graves or kilns. However, no ditch enclosing these anomalies has been identified and therefore a non-archaeological explanation for any or all of these anomalies causes cannot be dismissed, especially given the possibility of localised, small-scale mineral extraction (Pearson 2004).

4.7 In general the results from the resistance survey are less coherent and are consequently more difficult to interpret with any degree of certainty. However, no anomalies have been identified to suggest the presence of sub-surface structural remains anywhere in the survey area. This may be because much of

the supposed hospital precinct remained unsurveyed due to the change in priorities at the beginning of the fieldwork. The spurious data along the eastern edge of the survey block could also be masking weaker archaeological anomalies. Several low resistance anomalies have been noted to the north-west of the survey area that were not identified through the magnetic survey. However, it is considered probable that these anomalies are likely to have a modern or natural origin.

4.8 In conclusion the combined surveys have confirmed that the site has a high archaeological potential and that this potential extends beyond the current scheduled area. However, it is also possible that none of the identified anomalies is associated with the medieval hospital but relate to either much earlier or much later activity.

The results and subsequent interpretation of data from geophysical surveys should not be treated as an absolute representation of the underlying archaeological and non-archaeological remains. Confirmation of the presence or absence of archaeological remains can only be achieved by direct investigation of sub-surface deposits.

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Appendices