

GEOPHYSICAL SURVEY REPORT

STRATASCAN™



Project name:

Station Road, Irchester

Client:

University of Leicester Archaeological Services

August 2014

Job ref:

J7134

Report author:

Thomas Richardson MSc AlfA

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Station Road, Irchester

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Job ref:

J7134

Techniques:

Earth Resistance

Survey date:

31st July 2014

Site centred at:

SP 928 658

Post code:

NN29 7FD

Field team:

Tim Hamflett MSc AIFA

Rebecca Davies BSc (Hons)

Project manager:

Simon Haddrell BEng(Hons) AMBCS PIFA

Report written By:

Thomas Richardson MSc AIFA

CAD illustrations by:

Thomas Richardson MSc AIFA

Checked by:

David Elks MSc AIFA

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1 SUMMARY OF RESULTS

A detailed earth resistance survey was conducted over approximately 0.3 hectares of grassland. The survey has not identified any archaeology on the site. Areas of quarry rubble are observed in the data, as well as an anomaly of natural origin.

2 INTRODUCTION

2.1 *Background synopsis*

Stratascan were commissioned to undertake a geophysical survey of an area outlined for development. The survey targets an area of earthworks recorded as being related to a post-medieval building in the Northamptonshire HER (HER number: MNN12011, MNN120117, MNN120118). This survey forms part of an archaeological investigation being undertaken by University of Leicester Archaeological Services.

2.2 *Site location*

The site is located to the west of Biscay Close, Irchester, Northamptonshire at OS ref. SP 928 658.

2.3 *Description of site*

The survey area is approximately 0.3 hectares of grassland. The survey area slopes from the east down to the west with no obstructions.

2.4 *Geology and soils*

The site lies in a complex geological area with Stamford Member – Sandstone and Siltstone, Wellingborough Limestone Member – Limestone and Mudstone, and Whitby Member – Mudstone all seen in the area (British Geological Survey website). There is no recorded drift geology (British Geological Survey website).

The overlying soils are known as Moreton which are typical brown calcareous earths. These consist of calcareous clayey and fine loamy soils over limestone (Soil Survey of England and Wales, Sheet 4 Eastern England).

2.5 *Site history and archaeological potential*

A previous gradiometer survey of the area was conducted by Stratascan (J6254). The survey identified extensive ridge and furrow cultivation across the site, as well as two possible earthworks. The area covered by this survey targets an area identified as being of natural origin by the previous survey. The Northamptonshire HER shows earthworks in the area, potentially related to a post-medieval building (HER number MNN12011, MNN120117, MNN120118), however recent excavation of the site by University of Leicester Archaeological

Services shows an area of quarry rubble in the area (Vicki Score, personal communication, 22/08/2014).

2.6 **Survey objectives**

The objective of the survey was to identify any potential archaeology on the site, so that it may be assessed prior to development.

2.7 **Survey methods**

This report and all fieldwork have been conducted in accordance with both the English Heritage guidelines outlined in the document: *Geophysical Survey in Archaeological Field Evaluation, 2008* and with the Institute for Archaeologists document *Standard and Guidance for Archaeological Geophysical Survey*.

Detailed earth resistance survey was used as an efficient and effective method of locating masonry remains that may be associated with a former building. More information regarding this technique is included in the Methodology section below and in Appendix A.

2.8 **Processing, presentation and interpretation of results**

2.8.1 **Processing**

The processing was carried out using specialist software known as Geoplot 3 and involved the 'despiking' of high contact resistance readings. The nett effect is aimed at enhancing the archaeological or man-made anomalies contained in the data.

The following schedule shows the processing carried out on the processed resistance plots.

Despike	X radius = 1
	Y radius = 1
	Spike replacement

2.8.2 **Presentation of results and interpretation**

The presentation of the data for the site involves a print-out of the minimally processed data as a grey scale plot. Anomalies have been identified and plotted onto the 'Abstraction and Interpretation of Anomalies' drawing.

3 RESULTS

The earth resistance survey conducted at Station Road has identified a number of anomalies. The following list of numbered anomalies refers to numerical labels on the interpretation plots.

3.1 *Probable Archaeology*

No probable archaeology has been identified within the survey area.

3.2 *Possible Archaeology*

No possible archaeology has been identified within the survey area.

3.3 *Other Anomalies*

- 1 High resistance area anomalies across much of the site. This is related to areas of quarry rubble.
- 2 A low resistance area anomaly. This is of unknown origin; however it is most likely to be natural.

4 CONCLUSION

The survey at Station Road has not identified any archaeology on the site. There is no evidence for any structures in the area. The survey results corroborate the excavation of the site, with large areas of quarry rubble seen in the area. The only other anomaly identified on the site is likely to be of natural origin.

5 REFERENCES

British Geological Survey South Sheet, 1977. *Geological Survey Ten Mile Map, South Sheet First Edition (Quaternary)*. Institute of Geological Sciences.

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APPENDIX A – METHODOLOGY & SURVEY EQUIPMENT

Grid locations

The location of the survey grids has been plotted together with the referencing information. Grids were set out using a Leica 705auto Total Station and referenced to suitable topographic features around the perimeter of the site or a Leica Smart Rover RTK GPS.

An RTK GPS (Real-time Kinematic Global Positioning System) can locate a point on the ground to a far greater accuracy than a standard GPS unit. A standard GPS suffers from errors created by satellite orbit errors, clock errors and atmospheric interference, resulting in an accuracy of 5m-10m. An RTK system uses a single base station receiver and a number of mobile units. The base station re-broadcasts the phase of the carrier it measured, and the mobile units compare their own phase measurements with those they received from the base station. A SmartNet RTK GPS uses Ordnance Survey's network of over 100 fixed base stations to give an accuracy of around 0.01m.

Earth Resistance

Readings were taken at 1.0m centres along traverses 1.0m apart. This equates to 900 sampling points in a full 30m x 30 grid. All traverses were surveyed in a "zigzag" mode.

STRATASCAN™



STRATASCAN LTD

Vineyard House Upper Hook Road Upton upon Severn
Worcestershire WR8 0SA United Kingdom

T: 01684 592266 F: 01684 594142
info@stratascan.co.uk www.stratascan.co.uk