

Northamptonshire Archaeology

Archaeological Geophysical Survey
At Sulgrave Castle Green, Sulgrave,
Northamptonshire
August 2007



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Report 07/192

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**GEOPHYSICAL SURVEY AT SULGRAVE CASTLE GREEN, SULGRAVE,
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ABSTRACT

Northamptonshire Archaeology conducted a geophysical survey, on behalf of the Sulgrave Castle Green Management Committee, on two areas of the Castle Green in the village of Sulgrave, Northamptonshire. Putative building platforms have been identified together with possible demolition evidence and foundations in the south-west of the green. A potential former hollow-way was detected crossing the green from the south-east to north-west. Further possible building remains were identified to the south of the castle earthworks.

1 INTRODUCTION

Northamptonshire Archaeology conducted geophysical survey on behalf of Clare Pollak of the Sulgrave Castle Green Management Committee, in August 2007. The survey was targeted at two areas of land on the green to the south of the castle motte, with a total area of approximately 0.26ha (Centre: NGR SP 5565, 4525, Fig 1). The Management Committee plan to redevelop the Green area to provide better access to and enhance the presentation of Sulgrave Castle.

2 ARCHAEOLOGICAL BACKGROUND

The most outstanding archaeological feature of Sulgrave is the castle, a Norman ringwork. There is evidence of building on the site from the tenth to twelfth centuries, a stone and timber hall and later a timber tower (RCHME 1982, 138-139).

3 TOPOGRAPHY AND GEOLOGY

The Castle Green consists of an undulating 'D-shaped' pasture field, situated 30m south of the Castle Hill. The solid geology of the area is Inferior Oolite limestone and Upper Lias clays (BGS 2007).

4 METHODOLOGY

All fieldwork was carried out in accordance with English Heritage and the Institute of Field Archaeologists Guidelines (EH 1995 & Gaffney, Gater and Ovendon 2002).

Earth resistance and magnetometer survey were carried out in tandem at Sulgrave. The aim was to obtain a maximum amount of information from the survey and to provide 'hands-on' experience for interested local people. Both surveys collected data within the same pattern of 20m x 20m grids both on the green and in a small area adjacent to the motte (Figs 2 and 4). These areas totalled 0.26ha.

Earth Resistance Survey

Prospection by earth resistance was carried out utilising a Geoscan Research RM15 resistance meter in a 0.5m spaced 'Twin Probe' electrode array. Each grid square was examined along 1.0m separated traverses with readings (in Ohms, Ω) taken at 1.0m intervals.

Magnetometer Survey

Intensive magnetometer survey was undertaken using a Bartington Grad601-2 fluxgate gradiometer. The Grad601-2 is constructed as a dual-sensor instrument with two vertical gradiometers separated on a yoke to enable two lines of survey to be recorded in tandem.

The grid squares were traversed at rapid walking pace in zigzag traverses spaced at 1.0m intervals with data (in nanoTesla, nT) recorded every 0.25m along these.

The data was analysed using Geoplot 3.00s software. Low (negative) magnetism and resistance are shown as white and high (positive) magnetism and resistance as black in the resultant greyscale plots (Figs 2 and 4). To avoid the introduction of bias, minimal processing was carried out on the data. The 'Zero Mean Traverse' function was applied to magnetometer data in order to bring the average level of each line of data into a balanced zero. The resistance data grids were each matched so that the background levels were consistent across the survey.

The processed data is presented here in the form of greyscale highlighting the resistance and magnetic anomalies (5/13 Ω scale, Fig 2; -10/+10nT, Fig 4) and as interpretive plots (Figs 3 and 5) and are referred to directly in the following Survey Results section.

5 SURVEY RESULTS

Earth Resistance Survey

The resistance survey results of the green broadly divide into two zones; higher resistance in the south-west half and lower resistance in the north-east half. There appears to be some structure in the high zone, although some of this can be attributed to an electrical reaction to trees and the edge

of the area. Two areas of high readings were detected on the south of the north-west – south-east line through the field. These could represent a pair of approximately 10m diameter building platforms. Two high resistance linear features may indicate the presence of buried wall footings. The generally increased level of resistance in the south-west of the green is likely to be a response to demolished stone and/or brick structures.

The north-eastern half of the green was found to be of a fairly consistent low resistance. However, a lower resistance linear area c4m wide, was identified orientated north-west to south-east at the boundary with the high resistance area. This feature suggests an earlier hollow way or track. The low resistance feature in the south of the green may represent a large pit or pond.

Two high resistance features were identified in the small survey area to the south of the castle mound. The westernmost features would appear likely to represent part of a known bank. To the east are possible sub-rectangular building foundations. High resistance areas, possible rubble scatters, were detected north and south of the latter ‘building’. The lower resistance to the west may have been simply the natural background level as seen in the north-east of the green.

Magnetometer Survey

The most immediately apparent feature of the gradiometer survey of the green was the highly magnetic anomaly across the northern half. This represents the makeup of the new footpath installed in 2007. An area of magnetic noise (mixed positive and negative signals) was detected in the south-west of the green. It is considered that, with the resistance results, this may indicate an area of demolished stone and/or brick structures. Save for a general distribution of paired positive and negative anomalies representing iron fragments such as nails in the topsoil, little more can be identified in the magnetic data from the green.

The area south of the castle was found to be generally noisy, perhaps indicating a spread of stone and brick under the surface. A large ferrous anomaly was detected on the north edge of the area, reflecting a large piece, or collection of buried ironwork.

6 CONCLUSION

Combined earth resistance and magnetometer survey of the Sulgrave Castle Green have identified possible surviving building platforms, wall footings and areas of demolished stone or brick structures. A putative former trackway was traced crossing the green area north-west to south-east. A property boundary across the road continues this line further south-east to the fields.

Whilst the features identified immediately south of the castle would seem to conform to recent excavated evidence of medieval walls (R Ivens pers comm, 2007), it is possible that more recent activity has been traced in the form of post-medieval 'squatter occupation'.

BIBLIOGRAPHY

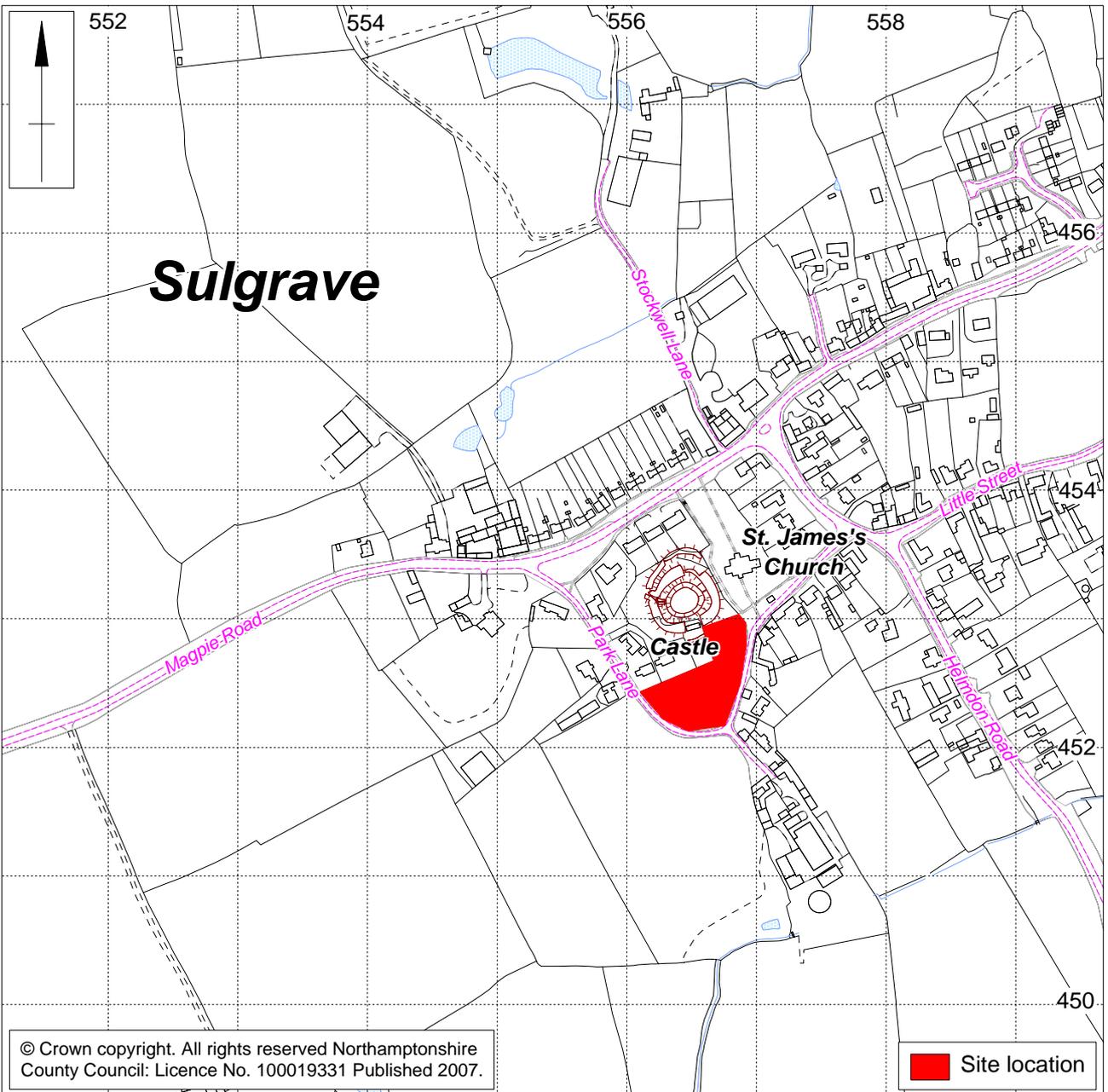
British Geological Survey 2007 www.bgs.ac.uk/geoindex/ accessed 11/2007

English Heritage 1995 *Geophysical Survey in Archaeological Field Evaluation*, Research and Professional Services Guideline, **1**

Gaffney, C, Gater, J, and Ovendon, S, 2002 *The Use of Geophysical Techniques in Archaeological Evaluations*, Institute of Field Archaeologists Technical Paper, **6**

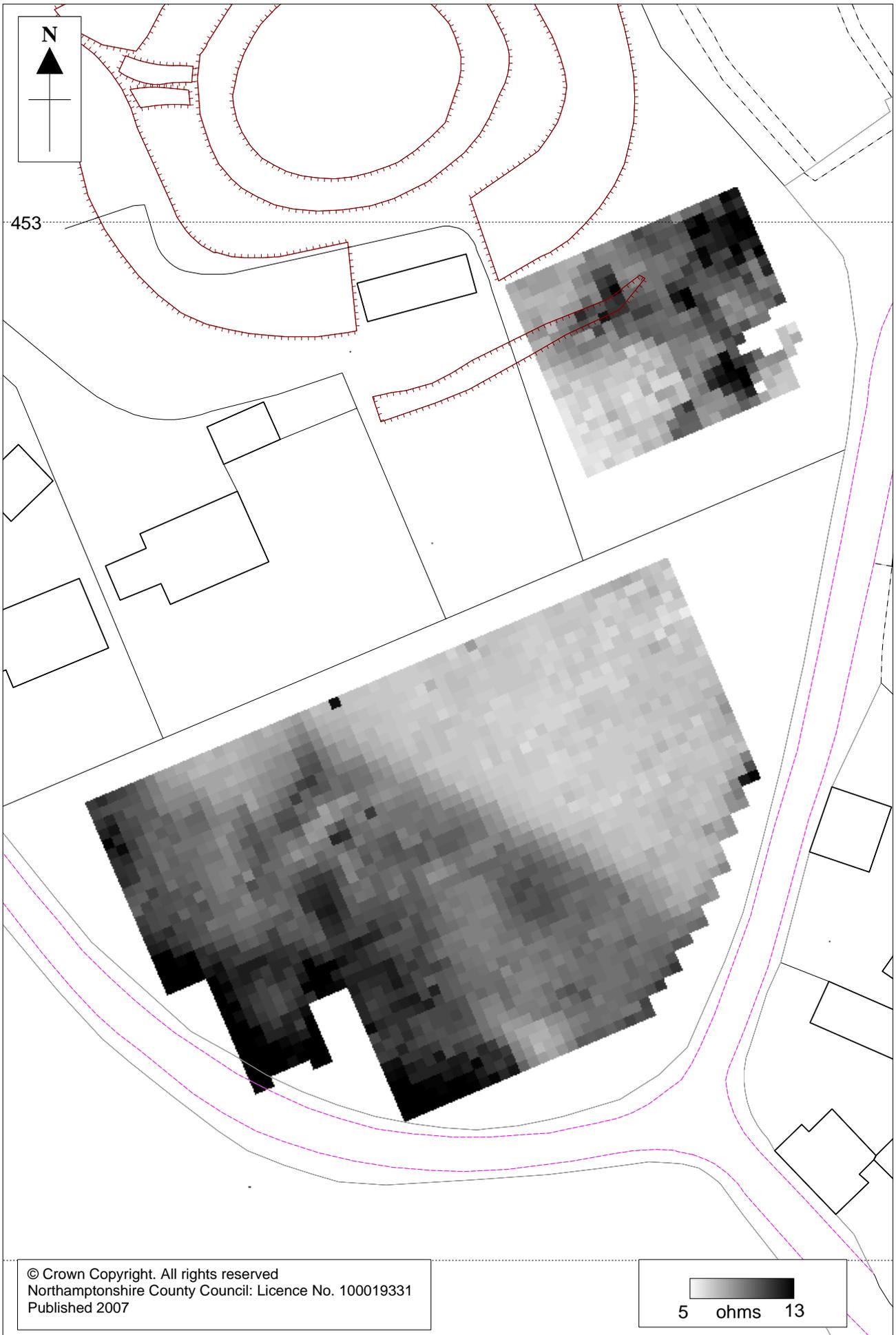
RCHME 1982 *County of Northampton Archaeological Sites Volume four, South-West*, Royal Commission for Historic Monuments England, HMSO, London

www.sulgrave.org/Castle%20Green%2002.html accessed September 2007



Scale 1:5000

Site location Fig 1



Scale 1:500

Earth Resistance Results Fig 2



Scale 1:500

Earth Resistance Interpretation Fig 3



Scale 1:500

Gradiometer Results Fig 4



Scale 1:500

Gradiometer Interpretation Fig 5