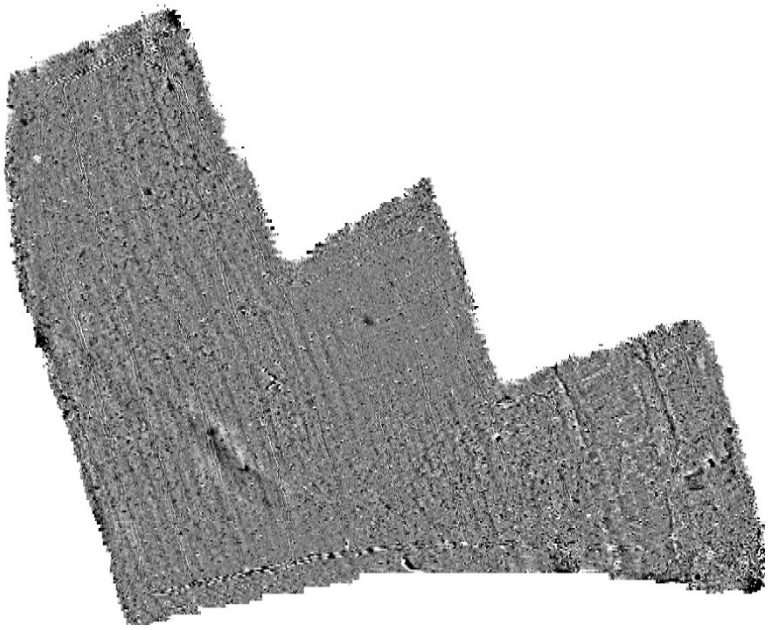

Archaeological geophysical survey on land at Lucks Lane, Buckden, Cambridgeshire March 2016

Accession No. ECB4698

Report No: 16/56

Authors: Adam Meadows
John Walford

Illustrator: Adam Meadows

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ARCHAEOLOGY

REGISTERED ORGANISATION CIfA

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Quality control and sign off**:**

Issue No.	Date approved:	Checked by:	Verified by:	Approved by:	Reason for Issue:
1	04/04/2016	Pat Chapman	John Walford	Andy Chapman	Client approval

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OASIS REPORT

PROJECT DETAILS	**Oasis No. molanort1-247027**	
Project name	Archaeological geophysical survey on land at Lucks Lane, Buckden, Cambridgeshire	
Short description	MOLA Northampton was commissioned to carry out a detailed magnetometer survey of land at Lucks Lane, Buckden, Cambridgeshire in advance of a proposed development. The survey detected medieval ridge and furrow, a probable post-medieval quarry pit, and some possible pits and ditches. Most of the possible ditches seemed likely to represent medieval or post-medieval boundaries.	
Project type	Geophysical survey	
Site status	None	
Previous work	Desk-based assessment (Flitcroft 2014)	
Current Land use	Arable and pasture	
Future work	Unknown	
Monument type/ period	Undated pits and ditches. Medieval ridge and furrow	
Significant finds	None	
PROJECT LOCATION		
County	Cambridgeshire	
Site address	Lucks Lane, Buckden	
Study area	*c* 10.7ha	
OS Easting & Northing	TL 191 670	
Height OD	*c* 26m aOD	
PROJECT CREATORS		
Organisation	MOLA Northampton	
Project brief originator	CgMs Consulting	
Project design originator	MOLA Northampton	
Director/Supervisor	Adam Meadows	
Project Manager	John Walford	
Sponsor or funding body	Gladman Developments Ltd	
PROJECT DATE		
Start date	02 March 2016	
End date	04 March 2016	
ARCHIVES	Location	Content
Physical	N/A	
Paper	MOLA Northampton, ECB4698	Site survey records
Digital		Geophysical survey & GIS data
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report	
Title	Archaeological geophysical survey on land at Lucks Lane, Buckden, Cambridgeshire, March 2016	
Serial title & volume	MOLA Northampton Reports 16/56	
Author(s)	Adam Meadows and John Walford	
Page numbers	4	
Date	04 April 2016	

Contents

Figures

Archaeological geophysical survey on land at Lucks Lane, Buckden, Cambridgeshire March 2016

ABSTRACT

MOLA Northampton was commissioned to carry out a detailed magnetometer survey of land at Lucks Lane, Buckden, Cambridgeshire in advance of a proposed development. The survey detected medieval ridge and furrow, a probable post-medieval quarry pit, and some possible pits and ditches. Most of the possible ditches seemed likely to represent medieval or post-medieval boundaries.

1 INTRODUCTION

MOLA was commissioned by CgMs Consulting, on behalf of Gladman Developments Ltd, to conduct a magnetometer survey on land at Lucks Lane, Buckden, Cambridgeshire (NGR TL 191 670; Fig 1). The fieldwork was undertaken between the 2 and 4 March 2016 and covered the majority of the survey area, excluding one small field which contained a number of pigs. The survey has been recorded on the Cambridgeshire Historic Environment Record (HER) under event number ECB4698.

2 BACKGROUND

2.1 Topography and geology

The proposed development area comprises a bean field and two small pasture fields on the southern edge of Buckden, east of the A1 Great North Road. It is an irregularly-shaped area with the A1 and Stirtloe Lane marking its western and southern boundaries respectively. Its northern boundary adjoins a petrol station and residential properties, and its far eastern limit is defined by Lucks Lane.

The survey area encompasses *c* 10ha of more or less level ground at *c* 26m aOD, on the third terrace of the River Great Ouse. The geology of the area is mapped as Oxford Formation Mudstone overlain by river terrace sands and gravels (BGS 2016).

2.2 Historical and archaeological background

The full historical and archaeological background of the survey area has been presented in a desk-based assessment report (Flitcroft, 2014); what follows is a summary of this report's findings.

The survey area sits south of the historic core of Buckden and no archaeological finds have been recorded from within the survey area.

A number of Palaeolithic to Bronze Age worked flint artefacts, including an Acheulean handaxe (HER 00657), have been found *c* 800m north-east of the survey area and another cluster of worked flints has been found c 600m east of the area, on land at Margett's Farm (HER 02484a). Archaeological excavations carried out at Margett's Farm in 1941 identified a small Roman settlement (HER 02484), and further work at the

site in 1999 to 2000 discovered an adjacent Early to Middle Iron Age settlement (HER 02484c).

A medieval settlement site with surviving house platform earthworks exists *c* 350m to the south of the survey area, within Stirtloe Park. This is surrounded by remnants of medieval ridge and furrow cultivation that extend beyond the A1 dual carriageway to the west (HER 11601).

3 METHODOLOGY

The magnetometer survey was conducted with Bartington Grad 601-2, twin sensor array, vertical component fluxgate gradiometers (Bartington and Chapman 2003). These are standard instruments for archaeological survey and can resolve magnetic variations as slight as 0.1 nanoTesla (nT).

An independent network of 30m grid squares was established across each of the fields to be surveyed. These were set out with a tape measure and optical square and were tied in to the Ordnance Survey National Grid by means of a Leica Viva RTK GPS. The gradiometers were carried at a brisk but steady pace through each grid square, collecting data along traverse lines spaced at 1.0m intervals. Measurements were automatically triggered every 0.25m along the traverses, giving a total of 3600 measurements per square. All fieldwork methods complied with the guidelines issued by Historic England and by the Chartered Institute for Archaeologists (HE 2015; CIfA 2014).

The survey data was processed using Geoplot 3.00v software. The striping (caused by slight imbalances between sensors) was removed using the 'Zero Mean Traverse' function and destaggering of the data was performed where necessary to correct errors arising from an uneven survey pace.

The processed data is presented in this report as greyscale plots (range +4nT to -4nT / black to white), rotated and scaled for display against the Ordnance Survey base mapping (Fig 2). An interpretative plot is provided as Figure 3 and plots of the unprocessed data as Figure 4.

4 SURVEY RESULTS

The survey has detected anomalies relating to medieval ridge and furrow cultivation and post-medieval quarrying and a few other anomalies which may relate to undated ditches and pits.

The ridge and furrow anomalies are aligned almost exactly north to south across the survey area, with the clearest examples in the western half of the main field and only weak linear trends further east. Many of the furrows exhibit broad S-shaped curves which are very characteristic of this pattern of cultivation.

In the eastern part of the western field there is an irregular set of anomalies which together correspond with a cropmark of a probable post-medieval gravel pit (Google Earth imagery dated 2006). The square western end of this group is particularly distinctive. Midway along the northern edge of the group there is a moderately strong positive anomaly (c 10-15nT) and it is possible this represents a deeply buried piece of scrap metal or patch of intense burning on the edge of the pit. To the east, at the southern end of data from the small pasture field, there is another set of irregular positive anomalies which are more tentatively suggested to represent another area disturbed by quarrying.

To the north and west of the quarry anomalies in the main western field, there are three largely parallel linear anomalies aligned north to south which are stronger and less neatly defined than the ridge and furrow anomalies. The significance of these is uncertain but their position and alignment would be most consistent with post-medieval field boundaries. Similarly, a weak curvilinear trend which crosses the western half of the field perpendicularly to the ridge and furrow would be best explained as a plough headland or field boundary.

A number of relatively small discrete positive anomalies are widely dispersed across the western field. These are poorly diagnostic and could either represent pits or have a geological cause. The best candidate for a pit would be the fairly regular, well-defined example in the south-east of the field; this appears to be associated with a short linear anomaly which could represent a section of ditch. The other examples are less well defined and perhaps more likely to be geological.

In the south-western portion of the western field there is a large diffuse negative anomaly of elongated form displaying a weak positive halo. This is likely to represent a band of palaeochannel sediments or some other variation in the composition of the underlying terrace gravels.

Very thin paired negative linear anomalies are present throughout the western field. These relate to modern agricultural tramlines that circle and transect the field. Aligned north-north-west to south-south-east, they run almost parallel with the medieval furrows. The stronger linear anomaly of alternating polarity along the southern edge of their field also seems to relate to a tramline, although its precise mode of origin is obscure.

Small, discrete dipolar anomalies are distributed widely across the survey area. It is likely that the majority of these represent relatively small pieces of agricultural scrap in the ploughsoil, with the slight concentration of such anomalies in the south-east of the western field relating to an accumulation of debris around a former gate onto Stirtloe Lane.

5 CONCLUSION

The survey has successfully mapped medieval ridge and furrow cultivation and at least one probable backfilled quarry pit of post-medieval date. The survey has also detected possible post-medieval field boundaries and a few isolated features tentatively interpreted as pits and a ditch of indeterminate date.

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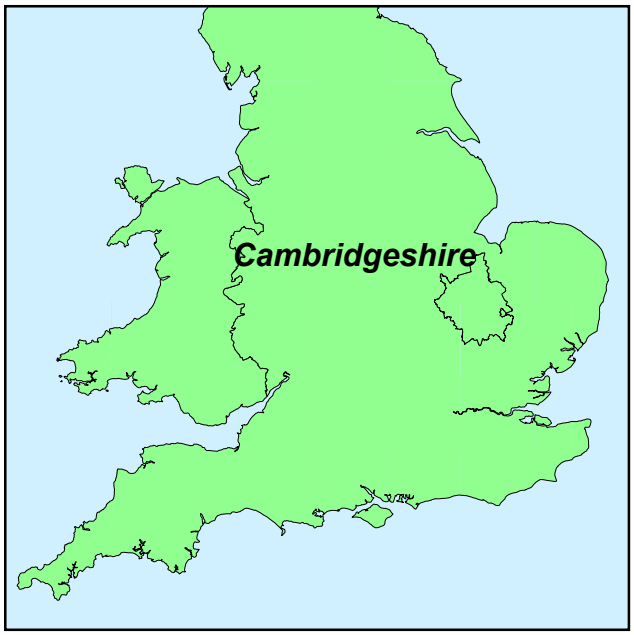
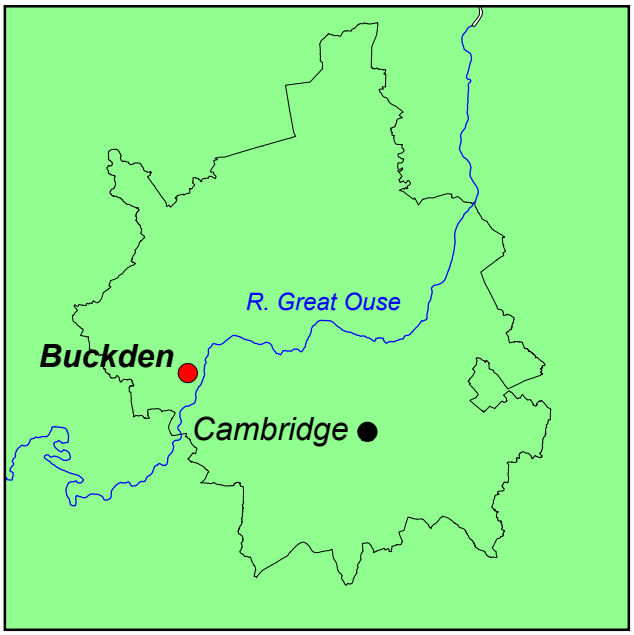
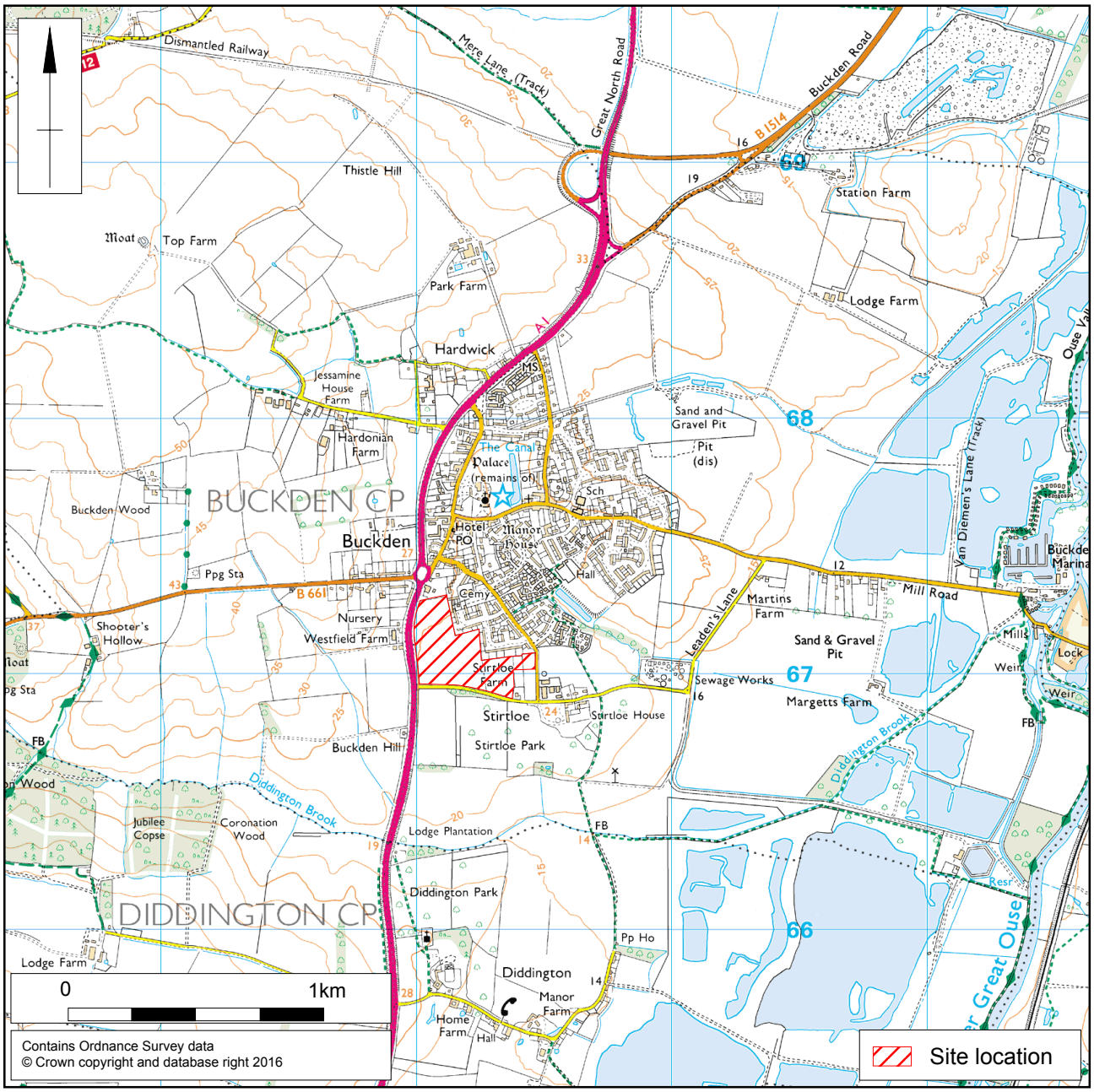
MOLA
04 April 2016







Scale 1:25,000

Site location Fig 1

Magnetometer survey results Fig 2

Scale 1:2500

Fig 3 Magnetometer survey interpretation

Scale 1:2500

Unprocessed magnetometer data Fig 4

Scale 1:2500

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