

GEOPHYSICAL SURVEY REPORT

Ickleford Manor, Ickleford, Hertfordshire

Client

Orion Heritage Ltd

For

Hawridge Strategic Land Limited

Survey Report

SUMO-22628

OASIS Ref. No.

sumogeop1-534766

Date

07 July 2025



Survey Report SUMO-22628: Ickleford Manor, Ickleford, Hertfordshire

Survey dates	25 June 2025
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Report Date	07 July 2025
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SUMO GeoSurveys is a trading name of SUMO Geophysics Ltd.

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3 SURVEY TECHNIQUE

- 3.1 Detailed magnetic survey (magnetometry) was chosen as the most efficient and effective method of locating the type of archaeological anomalies which might be expected at this site. All survey techniques followed the guidance set out by ClfA (2020) and the European Archaeology Council (EAC) (2016).

MACS Cart System (Foerster) Traverse Interval 1.0m Sample Interval 0.125m

The only processes performed on data are the following unless specifically stated otherwise:

Zero Mean Traverse	This process sets the background mean of each traverse to zero. The operation removes instrument striping effects and edge discontinuities over the whole of the data set.
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4 EXECUTIVE SUMMARY OF RESULTS

- 4.1 A magnetometer survey of land at Ickleford Manor, Ickleford, Hertfordshire has not recorded any magnetic responses that could be interpreted as being of definite archaeological interest, except for ridge and furrow cultivation. Uncertain anomalies are likely to have been caused by a combination of natural variations, agricultural processes, or buried ferrous. Former field boundaries and electric fences have been detected in the survey along with the route of a service pipe. A group of ferrous responses forming a rectangular shape in the north of Area 8 probably mark the foundations of a relatively modern structure. While others in Areas 6 and 7 are likely to have been caused by buried debris. A zone of magnetic disturbance in Area 4 is due to spreads of spoil.

5 INTRODUCTION

- 5.1 **SUMO GeoSurveys** was commissioned to undertake a geophysical survey of an area outlined for development. This survey forms part of an archaeological investigation being undertaken by **Orion Heritage Ltd** on behalf of **Hawridge Strategic Land Limited**.

5.2 Site Details

NGR / Postcode	TL 17984 31255 / SG5 3XB
Location	The site is located 3.5 km west of Letchworth Garden City and on the northern outskirts of Hitchin. The survey area is bounded to the north by Turnpike Lane, to the west by Bedford Road and to the south by the River Oughton.
HER	Hertfordshire HER
OASIS Ref. No.	sumogeop1-534766
District	North Hertfordshire District
Parish	Ickleford Civil Parish
Topography	Flat
Land Use	Pasture / arable
Geology	Bedrock: Gault Formation – Mudstone
(BGS 2025)	Superficial: Glaciofluvial Deposits, Mid Pleistocene - Sand and gravel Alluvium - Clay, silt, sand and gravel.
Soils (CU 2025)	Soilscape 8: Slightly acid loamy and clayey soils with impeded drainage Soilscape 20: Loamy and clayey floodplain soils with naturally high groundwater
Survey Methods	Magnetometer survey (fluxgate gradiometer)
Study Area	3.75 ha (1 ha unsurveyable)

5.3 **Archaeological Background** (OH 2025)

- 5.3.1 Whilst some evidence of prehistoric activity has been recorded within the study area, very little is in close proximity to the Study Site itself. As a result, the potential for the Study Site to contain archaeological finds and features dating from the prehistoric period is deemed to be low.
- 5.3.2 It is possible that the line of the Icknield Way which is recorded along Turnpike Lane, immediately to the north of the Study Site, could have originated during the Roman period or even earlier. However, apart from stray finds of Roman objects, the only Roman site within the study area is the cremation cemetery that was recorded c. 800m to the south-east in 1877. As

a result, the potential for the study site to contain archaeological finds and features dating from the Roman period is deemed to be low.

- 5.3.3 There is very little evidence of Saxon activity within the study area, and It is possible that any traces of the original Saxon settlement lie beneath the present village, to the north-east of the Study Site. As a result, the potential for the study site to contain archaeological finds and features dating from the Saxon period is deemed to be low.
- 5.3.4 Features relating to medieval or early post-medieval agricultural activity have been recorded during archaeological work to the east and west of the Study Site, and it is possible that traces of ridge and furrow may survive on the site itself. As a result, the potential for the study site to contain archaeological finds and features dating from the medieval period is deemed to be moderate.
- 5.3.5 Historic maps suggest that much of the site was either farmland, woodland or parkland associated with Ickleford House to the north-east until relatively recently. The maps show that the site has had various changes to its field boundaries over the years, and that there have been a number of structures built on the site which no longer exist. As a result, the potential for the study site to contain archaeological finds and features dating from the post-medieval and modern periods is deemed to be moderate.

5.4 ***Aims and Objectives***

- 5.4.1 To locate and characterise any anomalies of possible archaeological interest within the study area.

6 **RESULTS**

- 6.1 *The survey has been divided into nine survey areas (Areas 1-9) and specific anomalies have been given numerical labels [1] [2] which appear in the text below, as well as on the Interpretation Figure(s).*

6.2 ***Probable / Probable Archaeology***

- 6.2.1 No magnetic responses have been recorded that could be interpreted as being of definite archaeological interest, expect for ridge and furrow cultivation (see 6.3).

6.3 ***Ridge and Furrow***

- 6.3.1 Broad, widely spaced and parallel linear anomalies in Areas 2, 3 and 4 have been caused by historic ridge and furrow cultivation; they are also visible in these areas on the LiDAR data plot (see Figure 06).

6.4 ***Uncertain***

- 6.4.1 Several trends and discrete anomalies have been recorded in the survey which have been assigned to the category of *Uncertain origin*. They are magnetically weak and lack the defined morphology of anomalies that would normally warrant an archaeological interpretation. They have probably been caused by a combination of underlying natural variations, agricultural processes, or buried ferrous debris.

6.5 ***Former Field Boundary – Corroborated***

- 6.5.1 Linear anomalies of varying magnetic strength have been marked in Areas 6, 7 and 8 which correspond with the alignment of former field boundary that are visible in historic mapping (see Figure 05).

6.6 **Temporary Electric Fencing**

- 6.6.1 Lines of closely spaced discrete circular anomalies have been detected in Areas 5, 7 and 8 which have been caused by temporary electric fences. Some of the fences are visible on 2025 aerial imagery (see Figure 06).

6.7 **Service**

- 6.7.1 A strong dipolar linear ferrous anomaly in the north of Area 8 marks the route of an underground service.

6.8 **Ferrous / Magnetic Disturbance**

- 6.8.1 In the north of Area 8 a group of positive ferrous anomalies [1] have been detected which form a rectangular shape measuring 29 m by 14 m. The responses may have been caused by metal tips (originally attached to wooden posts) or iron rods being left in the ground; as such they probably have modern origins and may mark the location of a former post-built structure or a temporary small compound, though nothing is visible on old mapping. Similar responses [2] have also been detected in Areas 6 and 7, again, these are likely to have modern origins. In this instance they correspond with the location of a former allotment garden and are due to buried ferrous debris (see Figure 05).
- 6.8.2 A zone of magnetic disturbance [3] is visible in Area 4. It corresponds with groundworks that are visible on 2018 aerial imagery and its likely to have been caused by spreads of debris or spoil (see Figure 05).
- 6.8.3 Other ferrous responses close to boundaries are due to adjacent roads, buildings, fences and gates. Smaller scale ferrous anomalies ("iron spikes") are present throughout the data and are characteristic of small pieces of ferrous debris (or brick / tile) in the topsoil; they are commonly assigned a modern origin. Only the most prominent of these are highlighted on the interpretation diagram.

7 **DATA APPRAISAL & CONFIDENCE ASSESSMENT**

- 7.1 Historic England Table 4 (EH 2008) states that the typical magnetic response on the local soils / geology is variable. The results from this survey indicate the presence of ridge and furrow cultivation; consequently, there is no *a priori* reason why archaeological features would not have been detected.

8 **CONCLUSION**

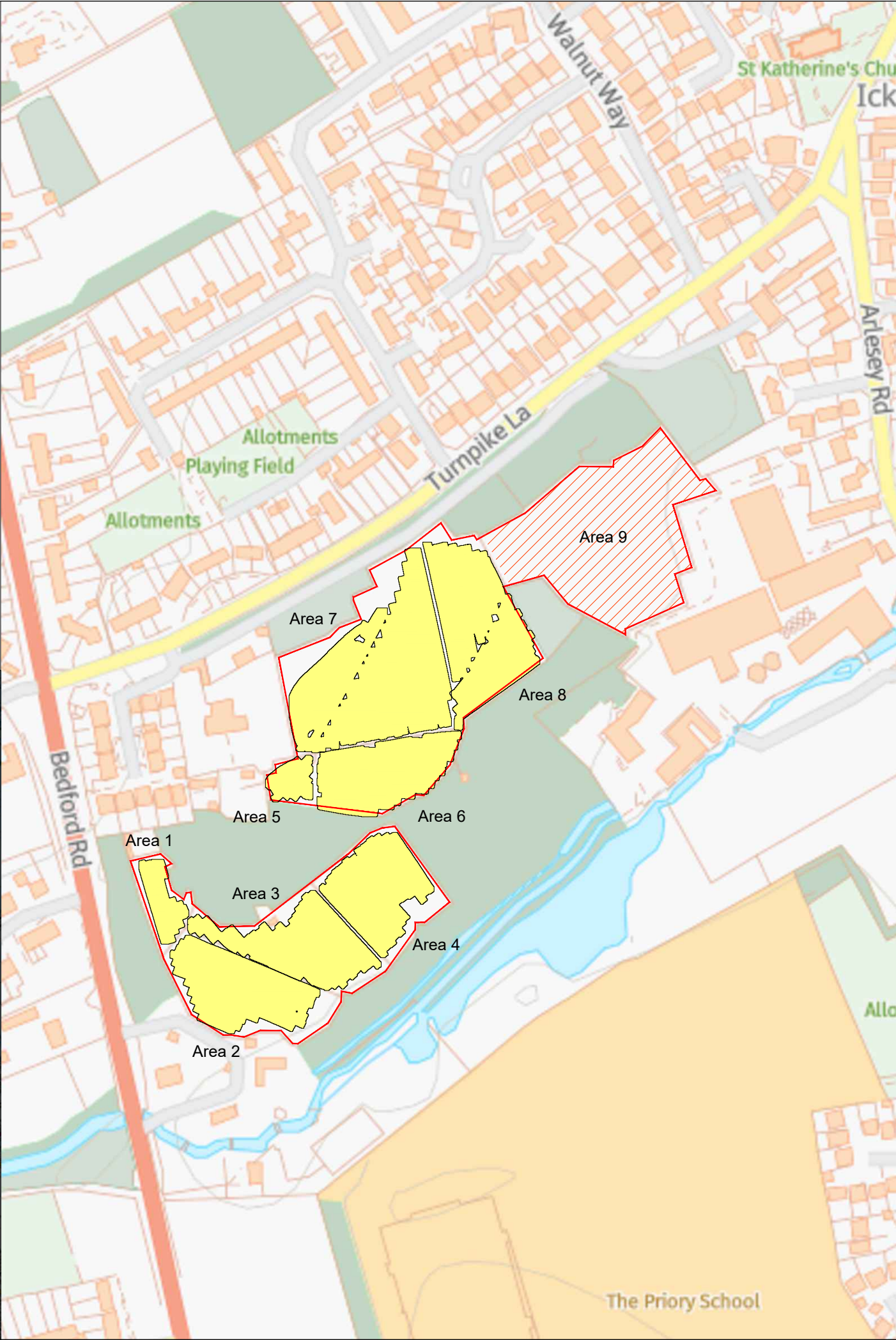
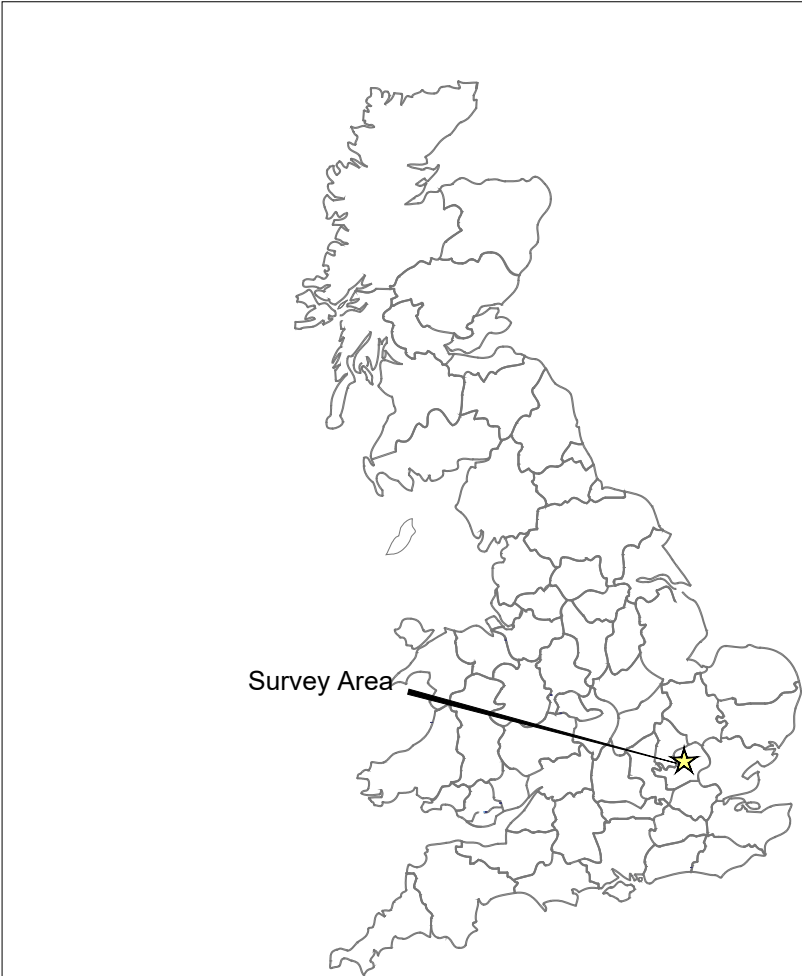
- 8.1 The magnetometer survey has not recorded any magnetic responses that could be interpreted as being of definite archaeological interest, except for ridge and furrow cultivation, which is visible in Areas 2, 3 and 4. A number of uncertain anomalies in the survey are likely to have been caused by a combination of natural variations, agricultural processes, or buried ferrous debris. Former field boundaries and electric fences have been detected in the survey along with the route of a service pipe. A group of ferrous responses forming a rectangular shape in the north of Area 8 probably mark the foundations of a relatively modern structure. Other ferrous like responses in Areas 6 and 7 are likely to have been caused by buried debris. A zone of magnetic disturbance in Area 4 is due to spreads of spoil.

9 REFERENCES

- BGS 2025 *Geology of Britain Viewer*, British Geological Survey, website:
(<http://www.bgs.ac.uk/opengeoscience/home.html?Accordion1=1#maps>)
- ClfA 2020 *Standard and Guidance for Archaeological Geophysical Survey*. 2014 amended 2020. ClfA Guidance note. Chartered Institute for Archaeologists, Reading
https://www.archaeologists.net/sites/default/files/ClfAS%26GGeophysics_3.pdf
- CU 2025 *The Soils Guide*. www.landis.org.uk. Cranfield University, UK. website:
<http://mapapps2.bgs.ac.uk/ukso/home.html>
- EAC 2016 *EAC Guidelines for the Use of Geophysics in Archaeology*, European Archaeological Council, Guidelines 2.
- EH 2008 *Geophysical Survey in Archaeological Field Evaluation*. English Heritage, Swindon (now withdrawn, but used for evaluating suitability of soil types)
- OH 2025 *Ickleford Manor, Ickleford, Hertfordshire Archaeological Desk-Based Assessment*. Orion Heritage Ltd, London

10 ARCHIVE

- 10.1 The minimally processed data, data images, XY traces and a copy of this report are stored in **SUMO GeoSurveys'** digital archive, on an internal RAID configured NAS drive in the Midlands Office. These data are also backed up to the Cloud for off-site storage.
- 10.2 The Grey Literature will be archived with OASIS and the relevant HER within a period of 12 months.

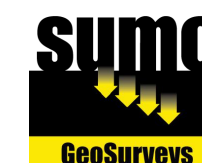
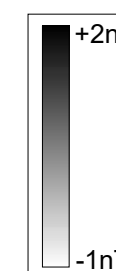


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	Survey Areas
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Title:	Site Location	
Client:	Orion Heritage Ltd	
Project:	SUMO-22628: Ickleford Manor, Ickleford, Hertfordshire	
Scale:	NOT TO SCALE	Fig No: 01



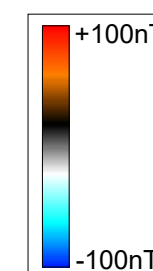
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Client: Orion Heritage Ltd

Project: SUMO-22628: Ickleford Manor, Ickleford, Hertfordshire

Scale: 0 metres 75
1:1500 @ A3

Fig No: 02



Title: Magnetometer Survey - Colour Plots	
Client: Orion Heritage Ltd	
Project: SUMO-22628: Ickleford Manor, Ickleford, Hertfordshire	
Scale: 0 75 metres 1:1500 @ A3	Fig No: 03



KEY

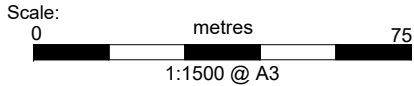
	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Temporary electric fencing
	Magnetic disturbance
	Service
	Ferrous (positive response)
	Ferrous

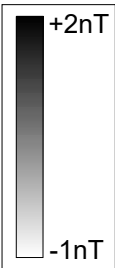
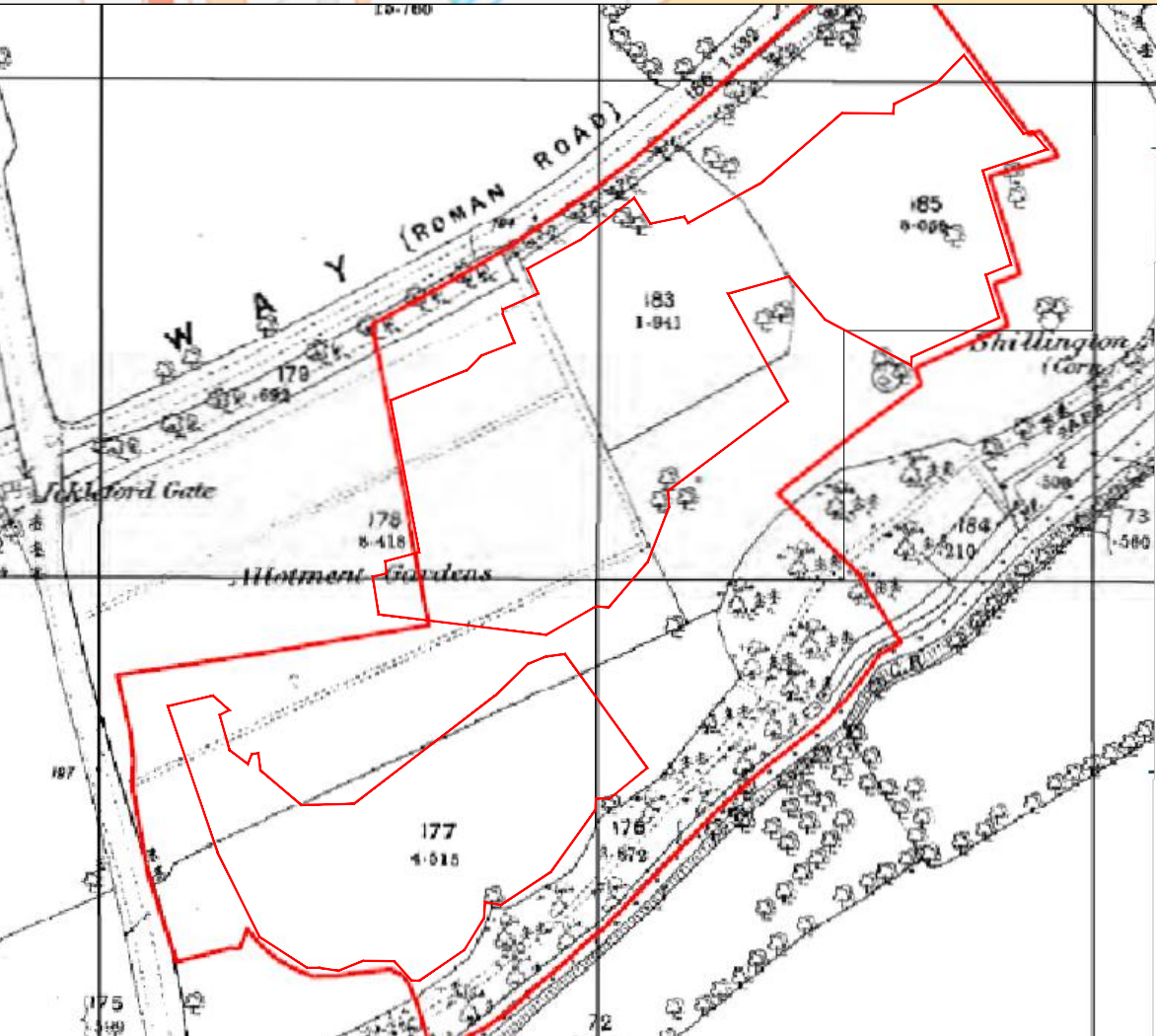


Title: Magnetometer Survey - Interpretation

Client: Orion Heritage Ltd

Project: SUMO-22628: Ickleford Manor, Ickleford, Hertfordshire



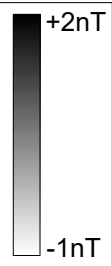
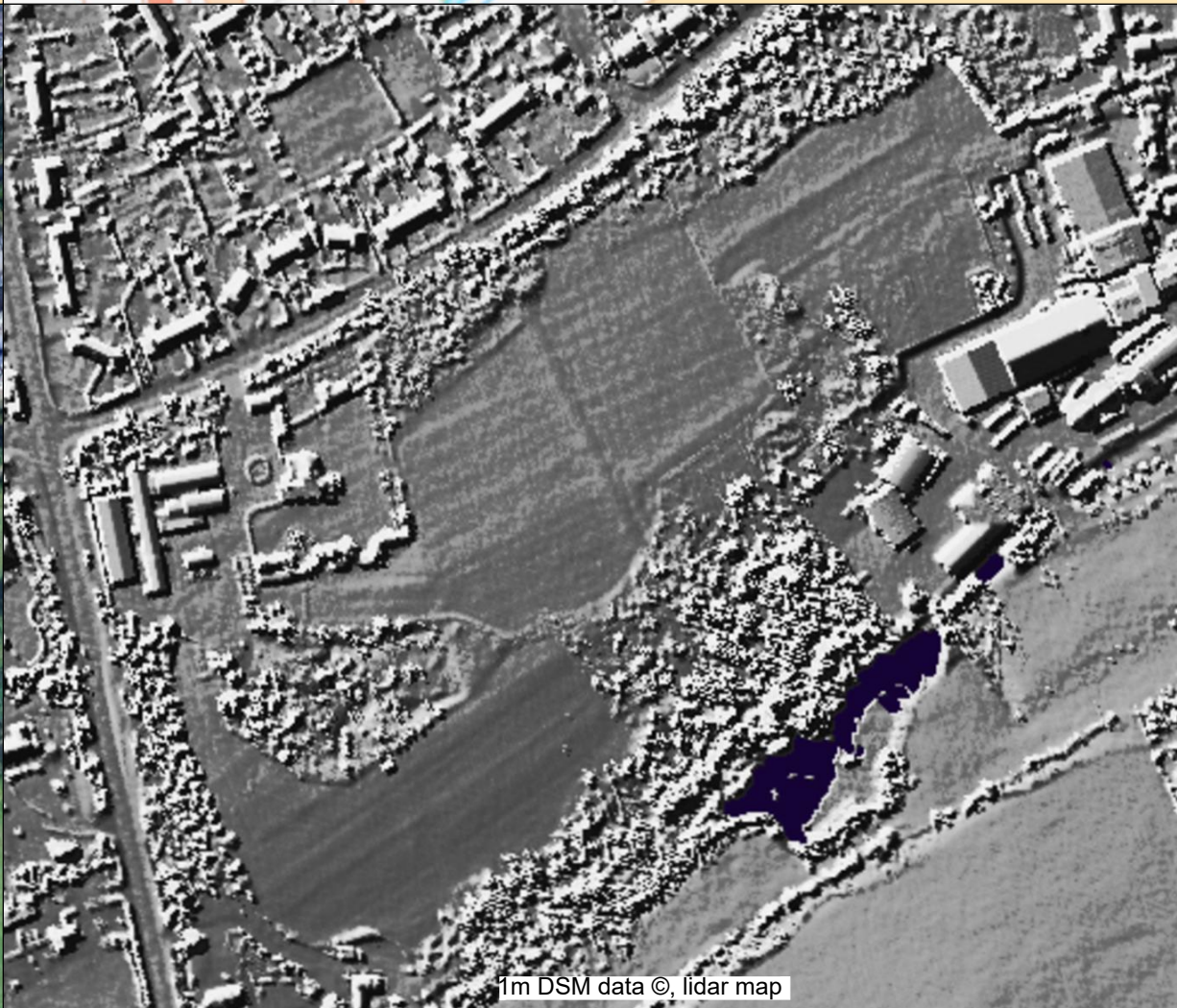


KEY

	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Temporary electric fencing
	Magnetic disturbance
	Service
	Ferrous (positive response)
	Ferrous



Title: Greyscale Plots / Interpretation / 1881 Ordnance Survey Map (OH 2025) / 2018 Aerial Image	
Client: Orion Heritage Ltd	
Project: SUMO-22628: Ickleford Manor, Ickleford, Hertfordshire	
Scale: NOT TO SCALE	Fig No: 05

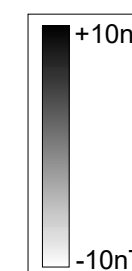


KEY

	Ridge and furrow
	Uncertain Origin (discrete anomaly / trend / increased response)
	Former field boundary (corroborated)
	Temporary electric fencing
	Magnetic disturbance
	Service
	Ferrous (positive response)
	Ferrous



Title: Greyscale Plots / Interpretation / 2025 Aerial Image / LiDAR Data Plot	
Client: Orion Heritage Ltd	
Project: SUMO-22628: Ickleford Manor, Ickleford, Hertfordshire	
Scale: NOT TO SCALE	Fig No: 06



Title: Minimally Processed Data - Greyscale Plots	
Client: Orion Heritage Ltd	
Project: SUMO-22628: Ickleford Manor, Ickleford, Hertfordshire	
Scale: 0 metres 75 1:1500 @ A3	Fig No: 07



Title: XY Trace Plots (clipped at +/-15nT)	
Client: Orion Heritage Ltd	
Project: SUMO-22628: Ickleford Manor, Ickleford, Hertfordshire	
Scale: 0 75 metres 1:1500 @ A3	Fig No: 08

Appendix A - Technical Information: Magnetometer Survey Method

Grid Positioning

For hand held gradiometers the location of the survey grids has been plotted together with the referencing information. Grids were set out using a Trimble R8 Real Time Kinematic (RTK) VRS Now GNSS GPS system.

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. This results in an accuracy of around 0.01m.

Technique	Instrument	Traverse Interval	Sample Interval
Magnetometer	Bartington Grad 601-2	1.0m	0.25m
Magnetometer	Bartington Cart System	1.0m	0.125m
Magnetometer	MACS Cart System (Foerster)	1.0m	0.125m

Instrumentation:

Bartington instruments operate in a gradiometer configuration which comprises fluxgate sensors mounted horizontally, set 1.0m apart. The fluxgate gradiometer suppresses any diurnal or regional effects. The instruments are carried, or cart mounted, with the bottom sensor approximately 0.1-0.3m from the ground surface. At each survey station, the difference in the magnetic field between the two fluxgates is measured in nanoTesla (nT). The sensitivity of the instrument can be adjusted; for most archaeological surveys the most sensitive range (0.1nT) is used. Generally, features up to 1m deep may be detected by this method, though strongly magnetic objects may be visible at greater depths.

Bartington Grad 601-2

Hand-Held: Data will be collected using a Bartington Grad 601-2. The instrument consists of two paired sensors and readings are logged at 0.25m centres along traverses 1.0m apart across 30m grids. The collection of data at 0.25m centres provides an appropriate methodology balancing cost and time with resolution as per Historic England guidelines

Bartington Cart System

Data will be collected using a cart carrying four paired Bartington magnetic sensors. Each data point is geographically referenced using an on-board Trimble RTK survey grade GPS system. Readings will be taken at 0.125m centres along traverses 1.0m apart.

MACS Cart System (Foerster)

A multi-sensor array cart system (MACS) utilising 4 Foerster 4.032 Ferex CON 650 gradiometers, spaced at 1m intervals, with a control unit and data logger was used for the magnetic survey. Each data point is geographically referenced using an on-board RTK GNSS system. Readings will be taken at 0.125m centres along traverses 1.0m apart.

Data Processing

Zero Mean	This process sets the background mean of each traverse within each grid to zero.
Traverse	The operation removes striping effects and edge discontinuities over the whole of the data set.
Step Correction (De-stagger)	When gradiometer data are collected in 'zig-zag' fashion, stepping errors can sometimes arise. These occur because of a slight difference in the speed of walking on the forward and reverse traverses. The result is a staggered effect in the data, which is particularly noticeable on linear anomalies. This process corrects these errors.

Display

Greyscale/
Colourscale Plot

This format divides a given range of readings into a set number of classes. Each class is represented by a specific shade of grey, the intensity increasing with value. All values above the given range are allocated the same shade (maximum intensity); similarly, all values below the given range are represented by the minimum intensity shade. Similar plots can be produced in colour, either using a wide range of colours or by selecting two or three colours to represent positive and negative values. The assigned range (plotting levels) can be adjusted to emphasise different anomalies in the data-set.

Interpretation Categories

In certain circumstances (usually when there is corroborative evidence from desk-based or excavation data) very specific interpretations can be assigned to magnetic anomalies (for example, *Roman Road, Wall, etc.*) and where appropriate, such interpretations will be applied. The list below outlines the generic categories commonly used in the interpretation of the results.

<i>Archaeology / Probable Archaeology</i>	This term is used when the form, nature and pattern of the responses are clearly or very probably archaeological and /or if corroborative evidence is available. These anomalies, whilst considered anthropogenic, could be of any age.
<i>Possible Archaeology</i>	These anomalies exhibit either weak signal strength and / or poor definition, or form incomplete archaeological patterns, thereby reducing the level of confidence in the interpretation. Although the archaeological interpretation is favoured, they may be the result of variable soil depth, plough damage or even aliasing as a result of data collection orientation.
<i>Industrial / Burnt-Fired</i>	Strong magnetic anomalies that, due to their shape and form or the context in which they are found, suggest the presence of kilns, ovens, corn dryers, metal-working areas or hearths. It should be noted that in many instances modern ferrous material can produce similar magnetic anomalies.
<i>Former Field Boundary (probable & possible)</i>	Anomalies that correspond to former boundaries indicated on historic mapping, or which are clearly a continuation of existing land divisions. Possible denotes less confidence where the anomaly may not be shown on historic mapping but nevertheless the anomaly displays all the characteristics of a field boundary.
<i>Ridge & Furrow</i>	Parallel linear anomalies whose broad spacing suggests ridge and furrow cultivation. In some cases, the response may be the result of more recent agricultural activity.
<i>Agriculture (ploughing)</i>	Parallel linear anomalies or trends with a narrower spacing, sometimes aligned with existing boundaries, indicating more recent cultivation regimes.
<i>Land Drain</i>	Weakly magnetic linear anomalies, quite often appearing in series forming parallel and herringbone patterns. Smaller drains may lead and empty into larger diameter pipes, which in turn usually lead to local streams and ponds. These are indicative of clay fired land drains.
<i>Natural</i>	These responses form clear patterns in geographical zones where natural variations are known to produce significant magnetic distortions.
<i>Magnetic Disturbance</i>	Broad zones of strong dipolar anomalies, commonly found in places where modern ferrous or fired materials (e.g. brick rubble) are present.
<i>Service</i>	Magnetically strong anomalies, usually forming linear features are indicative of ferrous pipes/cables. Sometimes other materials (e.g. pvc) or the fill of the trench can cause weaker magnetic responses which can be identified from their uniform linearity.
<i>Ferrous</i>	This type of response is associated with ferrous material and may result from small items in the topsoil, larger buried objects such as pipes, or above ground features such as fence lines or pylons. Ferrous responses are usually regarded as modern.

Individual burnt stones, fired bricks or igneous rocks can produce responses similar to ferrous material.

Uncertain Origin

Anomalies which stand out from the background magnetic variation, yet whose form and lack of patterning gives little clue as to their origin. Often the characteristics and distribution of the responses straddle the categories of *Possible Archaeology / Natural* or (in the case of linear responses) *Possible Archaeology / Agriculture*; occasionally they are simply of an unusual form.

Where appropriate some anomalies will be further classified according to their form (positive or negative) and relative strength and coherence (trend: weak and poorly defined).

Appendix B - Technical Information: Magnetic Theory

Detailed magnetic survey can be used to effectively define areas of past human activity by mapping spatial variation and contrast in the magnetic properties of soil, subsoil and bedrock. Although the changes in the magnetic field resulting from differing features in the soil are usually weak, changes as small as 0.1 nanoTeslas (nT) in an overall field strength of 48,000 (nT), can be accurately detected.

Weakly magnetic iron minerals are always present within the soil and areas of enhancement relate to increases in *magnetic susceptibility* and permanently magnetised *thermoremanent* material.

Magnetic susceptibility relates to the induced magnetism of a material when in the presence of a magnetic field. This magnetism can be considered as effectively permanent as it exists within the Earth's magnetic field. Magnetic susceptibility can become enhanced due to burning and complex biological or fermentation processes.

Thermoremanence is a permanent magnetism acquired by iron minerals that, after heating to a specific temperature known as the Curie Point, are effectively demagnetised followed by re-magnetisation by the Earth's magnetic field on cooling. Thermoremanent archaeological features can include hearths and kilns; material such as brick and tile may be magnetised through the same process.

Silting and deliberate infilling of ditches and pits with magnetically enhanced soil creates a relative contrast against the much lower levels of magnetism within the subsoil into which the feature is cut. Systematic mapping of magnetic anomalies will produce linear and discrete areas of enhancement allowing assessment and characterisation of subsurface features. Material such as subsoil and non-magnetic bedrock used to create former earthworks and walls may be mapped as areas of lower enhancement compared to surrounding soils.

Magnetic survey is carried out using a fluxgate gradiometer which is a passive instrument consisting of two sensors mounted vertically 1m apart. The instrument is carried about 30cm above the ground surface and the top sensor measures the Earth's magnetic field whilst the lower sensor measures the same field but is also more affected by any localised buried feature. The difference between the two sensors will relate to the strength of a magnetic field created by this feature, if no field is present the difference will be close to zero as the magnetic field measured by both sensors will be the same.

Factors affecting the magnetic survey may include soil type, local geology, previous human activity and disturbance from modern services.

Appendix C - OASIS Summary

OASIS ID (UID)	sumogeop1-534766
Project Name	Geophysical Survey at Ickleford Manor, Ickleford, Hertfordshire
Sitename	Ickleford Manor, Ickleford, Hertfordshire
Sitecode	SUMO-22628
Project Identifier(s)	SUMO-22628
Activity type	Geophysical Survey, MAGNETOMETRY SURVEY
Planning Id	
Reason For Investigation	Planning requirement
Organisation Responsible for work	SUMO Geophysics Ltd.
Project Dates	25-Jun-2025 - 25-Jun-2025
Location	Ickleford Manor, Ickleford, Hertfordshire NGR: TL 17922 31108 LL: 51.9659466766927, -0.284986663962525 12 Fig: 517922,231108 NGR: TL 18047 31297 LL: 51.9676207873662, -0.283109147197547 12 Fig: 518047,231297
Administrative Areas	Country: England County/Local Authority: Hertfordshire Local Authority District: North Hertfordshire Parish: Ickleford
Project Methodology	Data was collected using a cart carrying four paired Bartington magnetic sensors. Four sensors mounted 1m horizontally apart and very accurately aligned to nullify the effects of the earth's magnetic field. Readings relate to the difference in localised magnetic anomalies compared with the general magnetic background. Each data point is geographically referenced using an on-board Trimble RTK survey grade GPS system. Readings were taken at 0.125m centres along traverses 1.0m apart. Readings relate to the difference in localised magnetic anomalies compared with the general magnetic background.
Project Results	The magnetometer survey has not recorded any magnetic responses that could be interpreted as being of definite archaeological interest, except for ridge and furrow cultivation, which is visible in Areas 2, 3 and 4. A number of uncertain anomalies in the survey are likely to have been caused by a combination of natural variations, agricultural processes, or buried ferrous debris. Former field boundaries and electric fences have been detected in the survey along with the route of a service pipe. A group of ferrous responses forming a rectangular shape

	in the north of Area 8 probably mark the foundations of a relatively modern structure. Other ferrous like responses in Areas 6 and 7 are likely to have been caused by buried debris. A zone of magnetic disturbance in Area 4 is due to spreads of spoil.
Keywords	Ridge And Furrow - MEDIEVAL - FISH Thesaurus of Monument Types Field Boundary - POST MEDIEVAL - FISH Thesaurus of Monument Types Fence - 20TH CENTURY - FISH Thesaurus of Monument Types Pipeline - 20TH CENTURY - FISH Thesaurus of Monument Types
Funder	Private or public corporation Orion Heritage Ltd
HER	Hertfordshire HER - unRev - STANDARD
Person Responsible for work	Thomas Cockcroft
HER Identifiers	
Archives	

Report generated on: 07-07-2025:0934

Appendix D – Data Management Plan & Archive Selection Strategy

Data Management Plan

Project ID / OASIS ID

SUMO-22628 / sumogeop1-534766

Project Name

Ickleford Manor

Project Description

Detailed magnetic survey over approx. 3.75ha

Client

Orion Heritage

Project Manager

Thomas Cockcroft

Field Leader

Mia Long

Date DMP created

23.06.2025

Date DMP last updated

07.07.2025

Version

2

Technique - data

Detailed magnetic survey.

Manual – cart - other

Cart mounted magnetometers.

Documentation and metadata

All documentation and data produced are stored on SUMO servers in a specific job file.

Data storage, access and back-up

- SUMO Secure server during the project life set up in a RAID configuration (a RAID configuration incorporates a level of data redundancy meaning if a single hard drive in fails data can still be restored).

- Snap shots of the data will be made at several intervals during the day to allow data to be restored for up to 30 days if changed / deleted.
- Once the final report has been completed data will be moved onto NAS drive set up in a RAID configuration.
- All data is backed up to an off-site location (Cloud storage).

Archive Selection Strategy

Digital Data

Selection

It is proposed that only the final version of all born digital documents (reports, images and CAD files) will be selected for inclusion in the Preserved Archive. All raw and processed survey data will be included in the preserved archive. Below is what will constitute the selected archive:

- Raw data in XYZ format .csv and .png plus .pgw world file
- Processed data as .png plus .pgw world file
- Final survey report .pdf
- CAD and Vector graphics (interpretations) in .dwg format

De-selected digital data

The de-selected material will be retained on the SUMO Secure server and Cloud storage.

Documents

Not applicable – no archive

Materials

Not applicable – no archive



- Archaeological Geophysics
- Engineering Geophysics
- Measured Building Services
- Utility and Topographic Services
- Aerial Surveys
- Rail Surveys

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