Chichester and District Archaeology Society

Results of geophysical surveys, Monkton deserted medieval village, West Dean Estate, West Dean – 2023

STEVEN CLEVERLY – SEPTEMBER 2023

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1. Summary

Chichester and District Archaeology Society (CDAS) undertook a geophysical investigation of a site listed by Historic England (HE) as a deserted medieval village (DMV), at Monkton, West Dean, the listing of which includes the remains of a post-medieval farm (Monkton Farm).

This 2023 survey confirmed field boundaries and trackways recorded previously in a 1970's topographical survey (Aldsworth 1979) and seen in LiDAR (Light Detection and Ranging) sources (*Courtesy of Fugro Geospatial and South Downs National Park Authority*) but offers no perceptible evidence that can support the presence of building structures or medieval settlement.

CDAS members worked on the survey between the 17th of April till the 28th of April 2023.

2. Background

A '*deserted medieval village*' can be categorised as a settlement largely abandoned during or following the medieval period. If the dwellings the villagers lived in were timbered, they may have been 'slightly set up with a few posts' (Morris 2004, p61), and medieval timber-framed buildings were normally constructed of prefabricated timber frames with sill-beams that would've needed to be level. This would've been achieved by either levelling the ground up or down or propping them on stones – or a combination of all three. Once the beams had rotted away, they may have left no trace. Evidence for them is therefore likely to be seen through crop marks, as earthworks, or where material evidence such as masonry or differential growth, e.g. of nettles, can be found.

This site was first surveyed (and thereafter designated by HE) in the 1970's by the then Chichester Excavations Committee. The 1970's investigation was based upon a suggestion that earthworks in its vicinity 'might represent' a DMV. A topographical survey was undertaken, and a site plan produced (Figure 1). That teams' findings

suggested there is '*evidence of a settlement of about eight or more buildings, with associated tofts and field ways, extending over a distance of 400m'* (Aldsworth 1979, p9). While the 1970's investigations identify two '*probable'* tofts (identified as A and B in Figure 1), other probable tofts were suggested.

LiDAR data of the area implies that field ways identified in 1979 may have their foundations in earlier and wider monuments most notably field systems (Figure 2). Furthermore, the LiDAR data suggests there being a possibility for ridge and furrow within the List Entry area, immediately northwest of the suggested DMV.

The heritage site furthermore encompasses the remains of Monkton Farm, largely demolished following the end of the First World War, but some of the farm's walls remain upstanding.

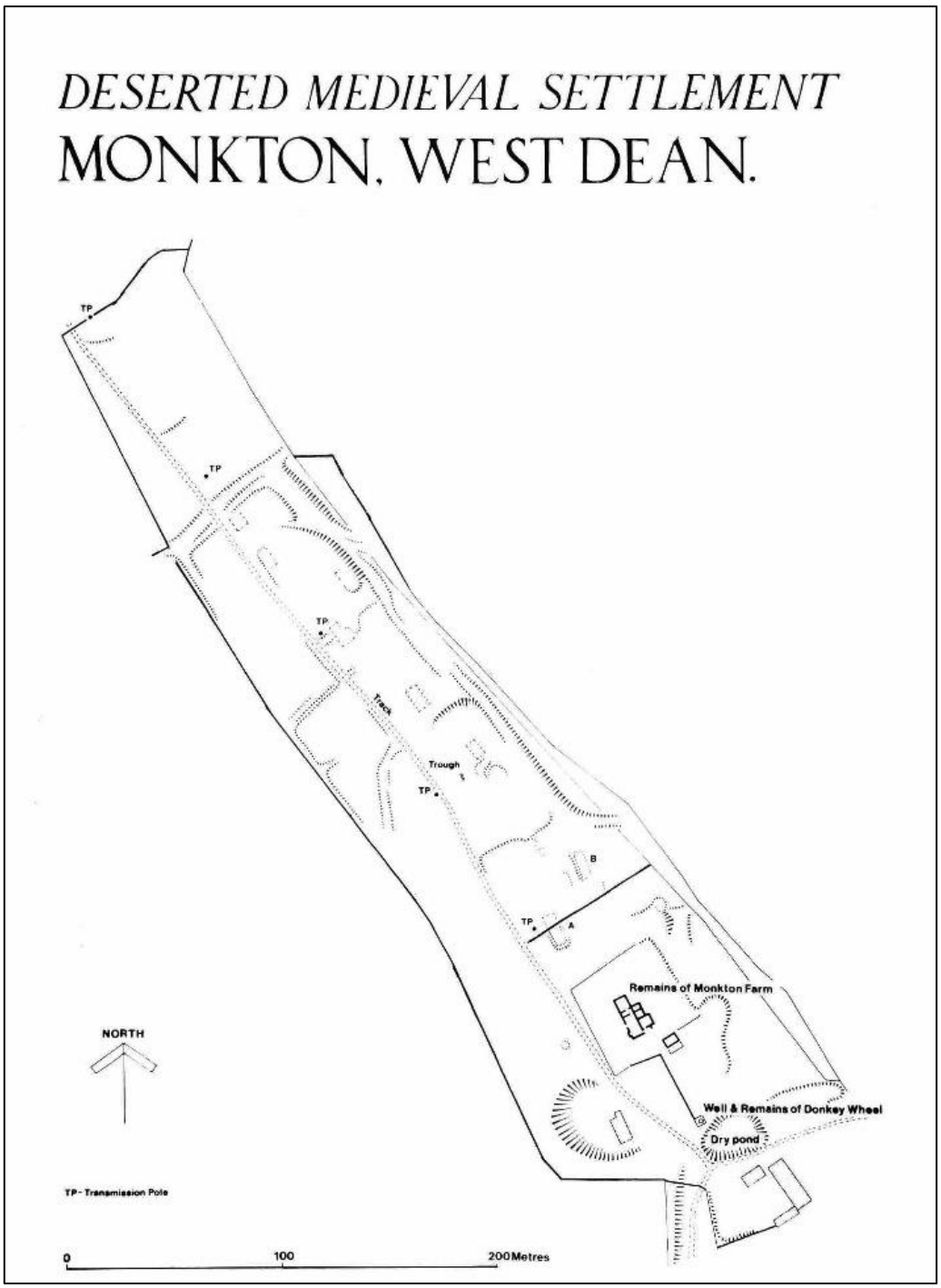

Figure 1: Monkton DMV plan (Aldsworth 1979, 10)

Figure 2: LiDAR data for the survey area and immediate surroundings (*Courtesy of Fugro Geospatial and South Downs National Park Authority*)

With the consent of the West Dean Estate and Mr Mark Roberts the Estate's Archaeological Advisor, CDAS proposed to undertake a geophysical survey of all the accessible parts within the area encompassing the scheduled monument (National Heritage List Number 1005811) (Figure 3). If time allowed, further surveying would have occurred to the north and south of the prioritised survey area.

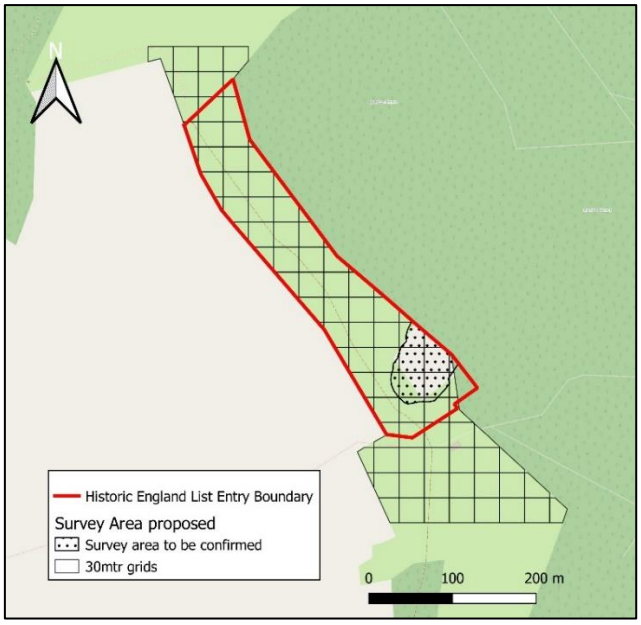

Figure 3: Area proposed to be surveyed

The geophysical survey intended to assist in a better understanding of the site. In particular the results will support West Dean Estate with their management plans for the site.

It was also an opportunity to survey by applying contemporary survey techniques, supplementing the 1970's topographical survey and modern LiDAR.

It was hoped that evidence would be provided to confirm the existence of tofts/homesteads and the overall extent of the deserted medieval village.

The survey also aimed to detect any geophysical evidence to support the ridge and furrow within the List Entry, as suggested by the LiDAR data, and to confirm if there are any other archaeological features of interest that have not been documented.

A Schedule 42 licence application was applied for (Cleverly 2023) and duly granted by Historic England (Reade 2023).

3. The site

The site is within the ownership of the West Dean Estate. The main site of the DMV was set aside as pasture, whilst the area once occupied by Monkton Farm, is in an area predominantly wooded with heavy vegetation, inaccessible to CDAS during this survey.

The valley lies in the civil parish of West Dean in the District of Chichester, West Sussex – approximately 6 miles northwest of Chichester (Figure 4).

The site of the DMV exists in a dry coombe of South Downs chalkland, ranging between 145mtrs and 177mtrs above Ordnance Datum, centred on NGR 482896 116617.

The area lies between two geological formations (British Geological Survey 2023).

- Principally: Seaford Chalk Formation - Chalk. Sedimentary bedrock formed between 89.8 and 83.6 million years ago during the Cretaceous period.
- Along the western edge: Lewes Nodular Chalk Formation - Chalk. Sedimentary bedrock formed between 93.9 and 86.3 million years ago during the Cretaceous period.

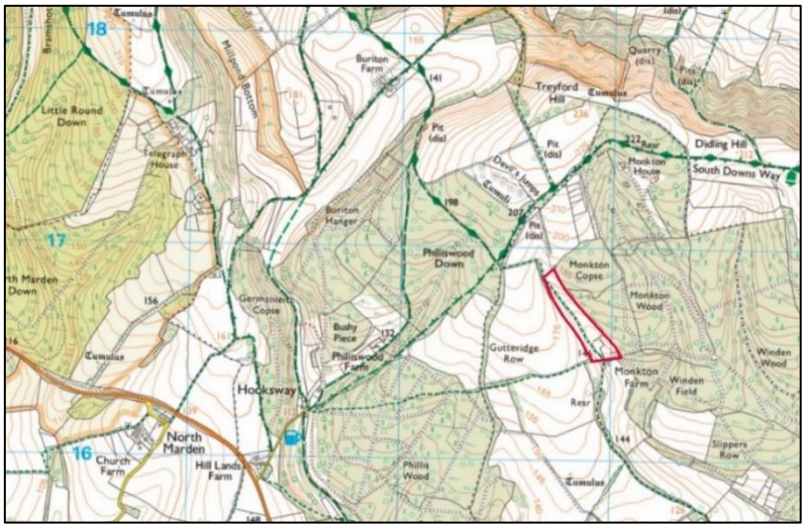

Figure 4: Location of site (outlined in red; https://www.bing.com/maps/) relative to Hooksway and North Marden

4. Health and safety

A standard CDAS surveying Health and Safety Risk Assessment was prepared and shared with the volunteers prior to undertaking the geophysical survey. The assessment took into consideration that the site has a public footpath running its length and therefore the welfare of the public was to be safeguarded.

5. Methodology

The survey utilised the following equipment:

Resistivity

Geoscan RM15D resistivity meter was employed.

- Readings were taken at one metre intervals on both the x and y-axis.
- Each grid was surveyed in zigzag mode.
- The probes will be 0.5 metres apart.

Magnetometry

The CDAS Bartington Grad 601 and a loaned Geoscan RM85 magnetometer were used.

- Readings were taken at quarter metre intervals on the y-axis and one metre interval on the x-axis.
- Each grid was surveyed in zigzag mode.

Both the resistivity and magnetometry survey results were processed using Snuffler version 1.32 (freeware).

A Theodolite established a baseline for the setting out of the 30 metre survey grids. The establishment of the survey grids is documented within Appendix A.

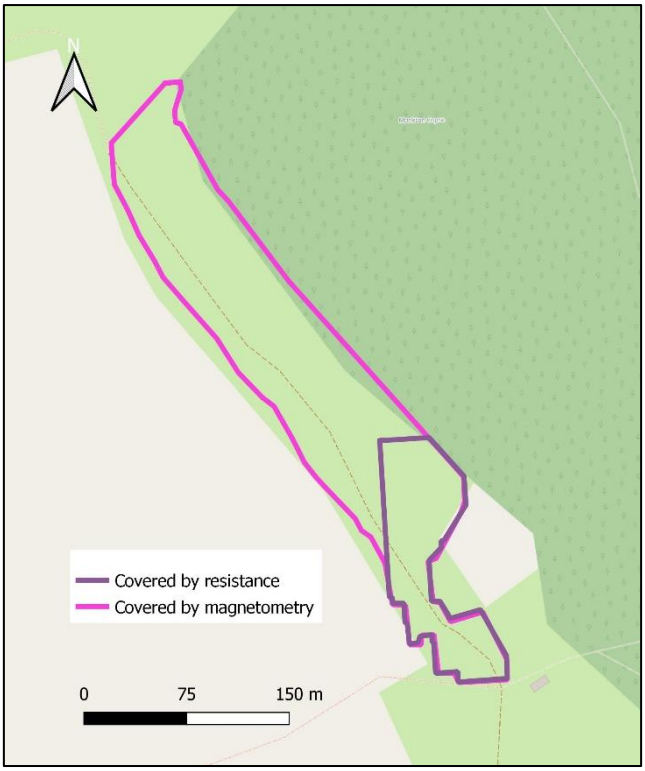

Figure 5: Areas surveyed

6. Survey results: magnetometry

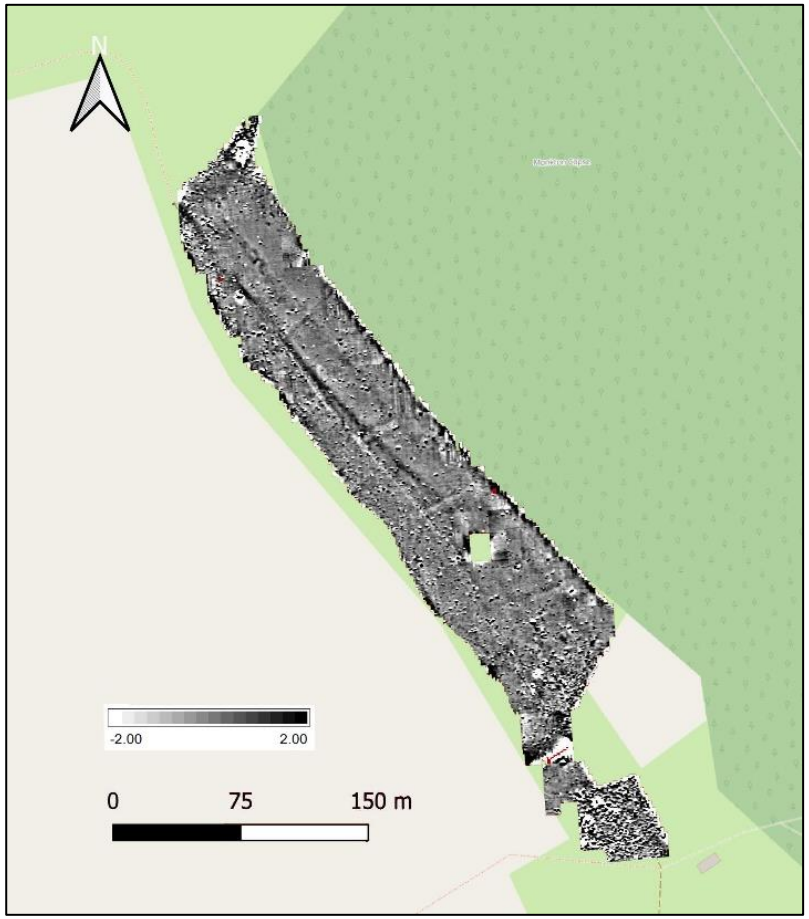

Figure 6: Magnetometer responses, including range bar

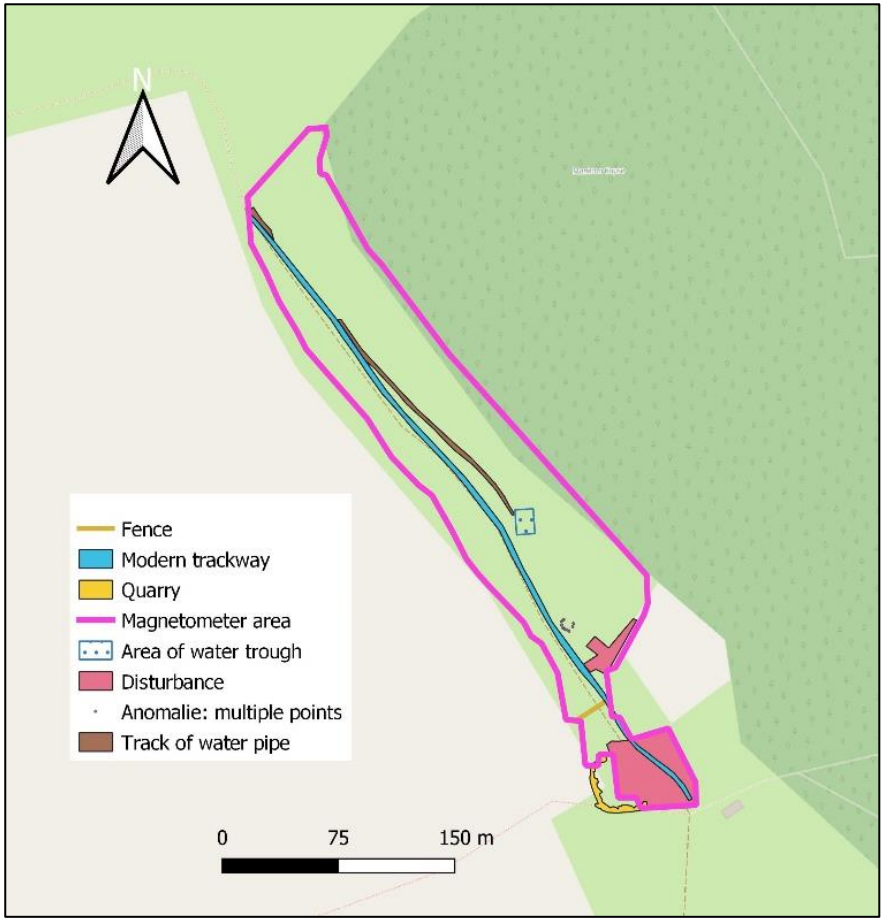

Figure 7: Schematic interpreting magnetometer responses

A number of observations need to be made following the magnetometry survey (see Figures 6 and 7).

Due to the nature of the site with its sometimes-steep valley sides, the ability of the magnetometer operator to keep their foothold and balance was challenging. This resulted in the processed results displaying striping. It should be noted though, that where this affect happened, it did not hinder the analysis of the results.

There were two features that necessitated a reasonable exclusion during the survey. One was a metal water trough, the other a half-buried iron-bar gate. Where post processing of these objects revealed ‘flaring’ (extreme magnetic responses) some survey readings were removed from within Snuffler to mitigate their effects.

During the survey, an employee of the Estate confirmed the path of a water pipe which ran down the valley to supply the water trough.

There is evidence for ground ‘disturbance’ around the remains of Monkton Farm, largely to the south, but to a lesser extent north of the Monkton Farm demolition area.

The magnetometer findings show traces of field divisions/boundaries and probable trackways seen in both the LiDAR and suggested in the 1970’s topographical survey (overlain within QGIS (Geographical Information System)), these stand as a testament to how accurately these observations were recorded.

7. Survey results: resistivity

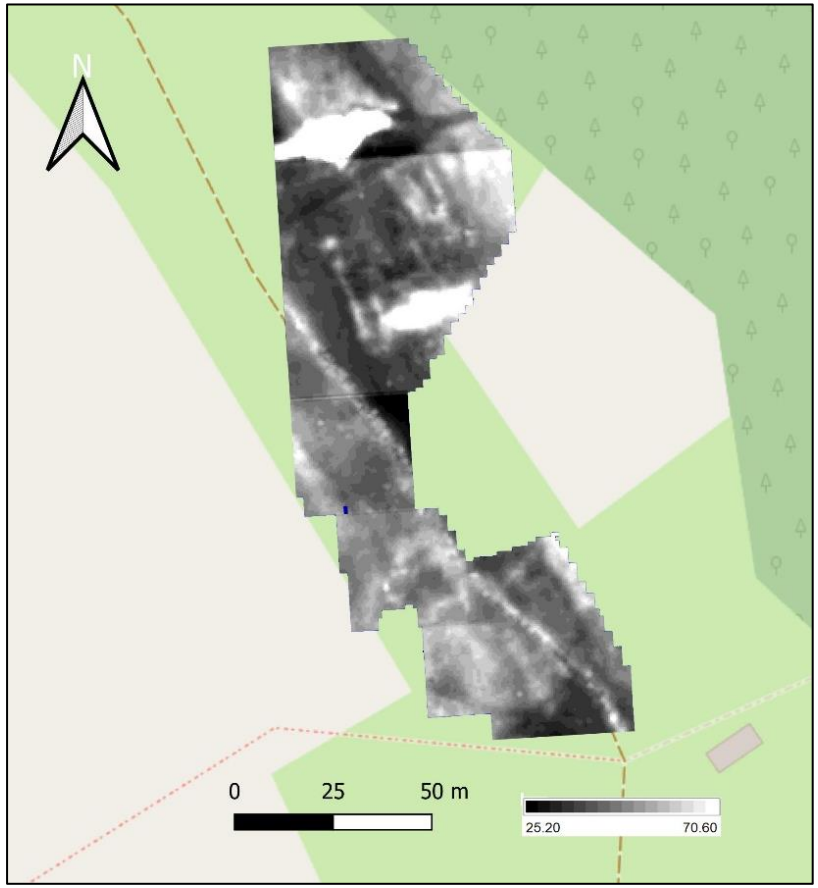

Figure 8: Resistivity responses, including range bar

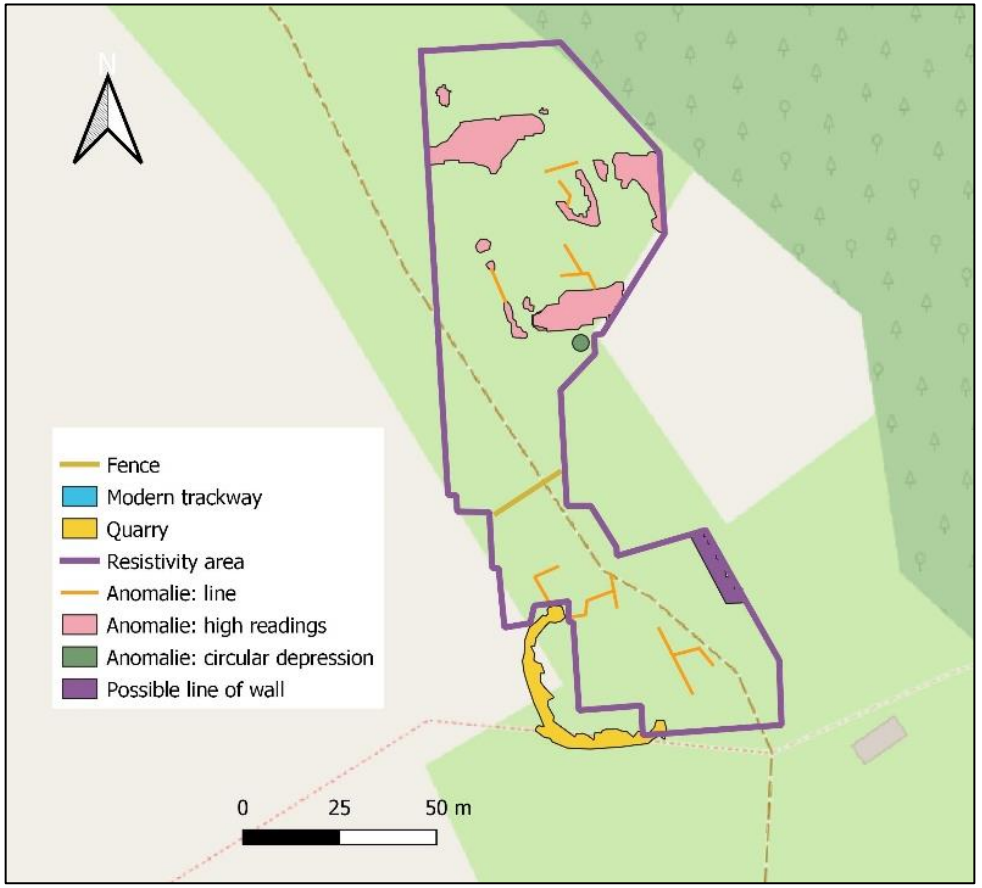

Figure 9: Schematic plotting of resistivity responses

Although because of its size the site was better suited to magnetometry, a portion of it was surveyed using resistivity (Figures 8 and 9). The area chosen surrounds the remains of Monkton Farm and a distinct location suggested by Fred Aldsworth as containing the remains of two medieval tofts.

The results of the 2023 resistivity survey suggest a buried portion of Monkton Farm wall, recorded as ‘possible line of wall’ in Figure 9.

A circular depression, evident when walked over, is also seen in the results.

There were also readings that produced high resistance data (Figure 9) and appear to be a spread of material, exhibiting no obvious forms.

8. Discussion of results

The results of the 2023 geophysical survey, in conjunction with LiDAR data (*Courtesy of Fugro Geospatial and South Downs National Park Authority)* superimposed over the 1970’s site plan, stand as a testament to how accurately that survey was conducted. The 1970’s survey took in evidence of earthworks, rectangular depressions, as well as patches ‘*dominated by nettles during the summer months*’ (Aldsworth 1979).

Unfortunately, the 2023 magnetometry results disclosed no evidence to suggest wall foundations, post-holes or hearths, which could be expected as evidence for the dwellings suggested in the Aldsworth survey (1979), nor indeed elsewhere across the survey area. The 2023 output (Figure 10) follows post processing of the magnetometer readings (within Snuffler), with processing set as a value to highlight magnetic responses. The building plots suggested in the 1970’s topographical survey when traced onto the 2023 magnetometry results, either represented as circles around the building plots, or where earthworks suggest crofts A and B being

located (Aldsworth 1979) – see Figure 10. No magnetic evidence of patterns, post-holes or hearths are seen within those circular boundaries.

In Figure 11 two of the suggested building plots (Aldsworth 1979) are recorded as located within linear depressions (dark traces on the LiDAR image). These dark depressions run further than the suggested building footprints and may mean that these linear depressions are the result of something other than levelling for house platforms, i.e., possible quarry ditches for the banks that run alongside them.

The two tofts cited as A and B (Aldsworth 1979) (Figure 1), appear in an area that contains both large resistance readings and linear features, seen in both the LiDAR image (Figure 12) and in the resistance survey (Figures 8 & 9). Given the proximity of A and B to the remains of Monkton Farm, it may be possible that these earthworks are a mix of demolition material resulting from the demise of the farm or that they were once outbuildings associated with the farm, or even natural deposits such as Coombe rock. Without excavation, it should not be dismissed that these earthworks may indeed be the remains of medieval structures, but the 2023 survey offers no evidence to support that hypothesis.

LiDAR maps (*Courtesy of Fugro Geospatial and South Downs National Park Authority*) show trackways and field boundaries running across the valley into earthworks on either side of the site. Some appear to coincide with the locations suggested as containing DMV dwellings, which may have been misinterpreted.

Despite the LiDAR data suggesting evidence of ridge and furrow, no geophysical evidence to confirm such was evident.

Figure 10: High magnetometer readings, overlaid with suggested building plots (circled in red)

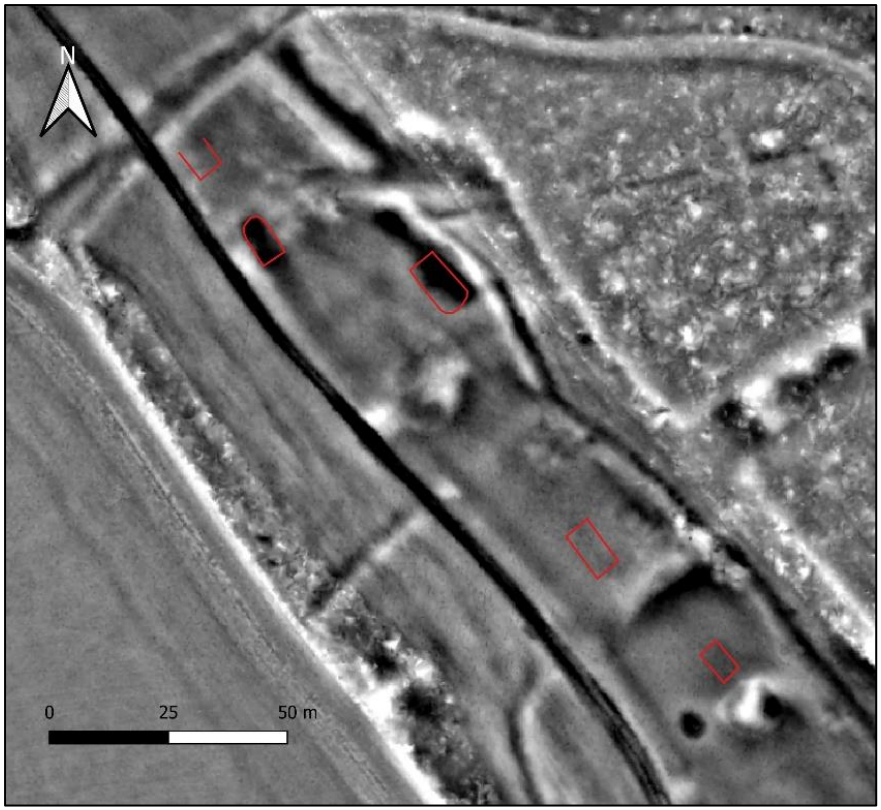

Figure 11: Building plots superimposed (in red) on LiDAR map

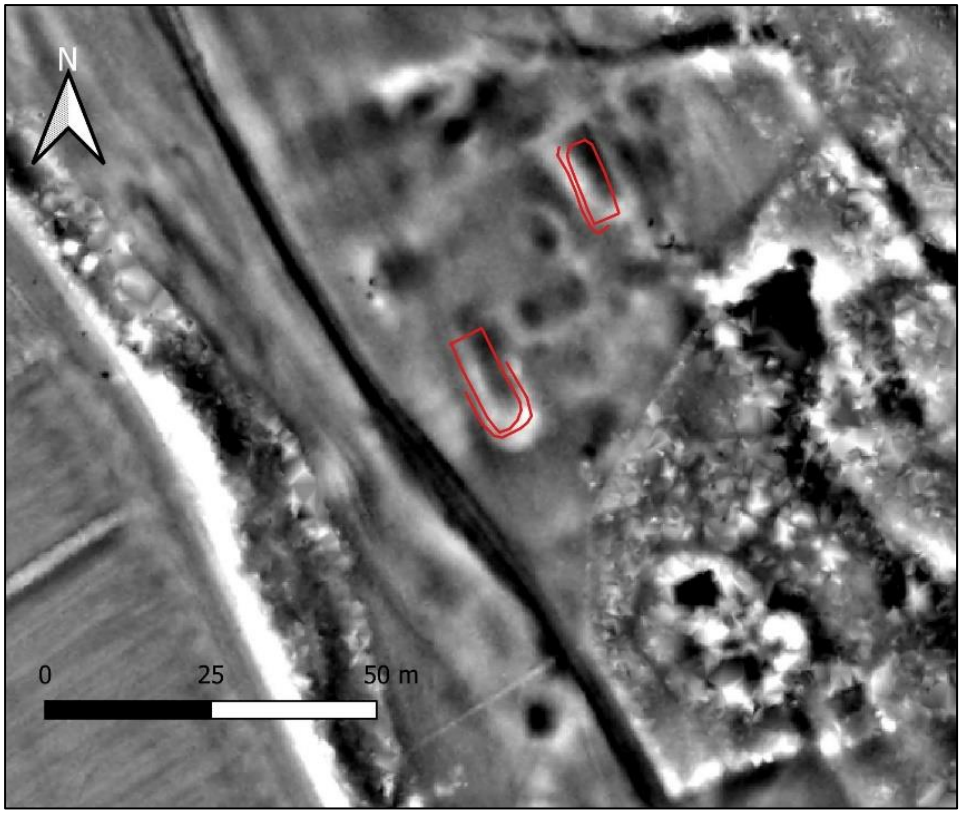

Figure 12: Building plots imposed over LiDAR map

9. Acknowledgements

The researchers are extremely grateful to Mr Mark Roberts for his negotiation, permission, and support for this project. Our appreciation extends to West Dean Estate.

We also recognise the invaluable support and guidance from Mr James Kenny, Archaeology Officer for Chichester District Council.

10. Bibliography

Aldsworth, F.G., 1979. *Three Medieval Sites in West Dean Parish*, *Sussex Archaeological Collections* (Volume 117, article, pp.109-124)

British Geological Survey - http://mapapps.bgs.ac.uk/geologyofbritain/home.html., viewed on 14th June 2023.

Cleverly, S., 2023 *Section 42 Licence Application in Respect of National Heritage List Number 1005811*, CDAS Archive

Historic England Listing Map Search - *https://mapservices.historicengland.org.uk/printwebservicehle/StatutoryPrint.svc/5847/HLE_A4L_NoGrade%7CHLE_A3L_NoGrade.pdf*, Viewed on 20th March 2023

Morris, K., 2004. *The Archaeology of Buildings*, Tempus

LiDAR data - Courtesy of Fugro Geospatial and South Downs National Park Authority, through the Historic Environment Record held by Chichester District Council

Reade, C., 2023, Email to Steven Cleverly, 14th April 2023

Figure 4: https://www.bing.com/maps/, viewed on 14th June 2023

APPENDIX A

The approach to setting up the baseline from which to spawn the survey grids is as follows.

Based upon the western end of the barn southeast of the site, 30 metre square grids and partials were created – Figure 13.

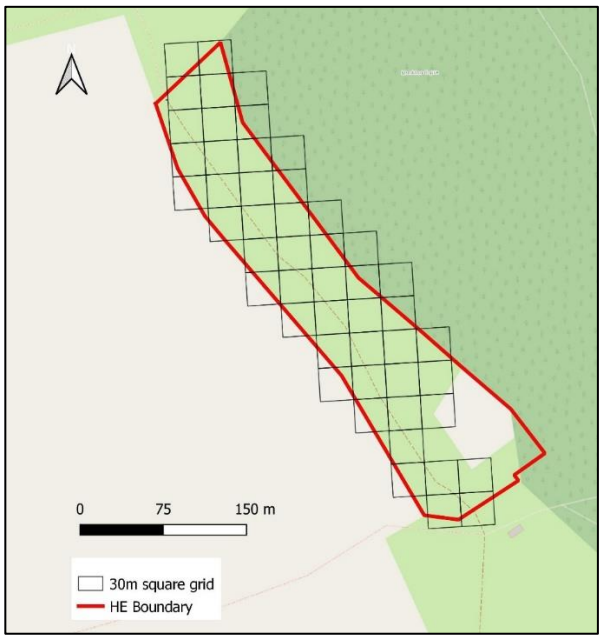

Figure 13: 30mtr grids laid out

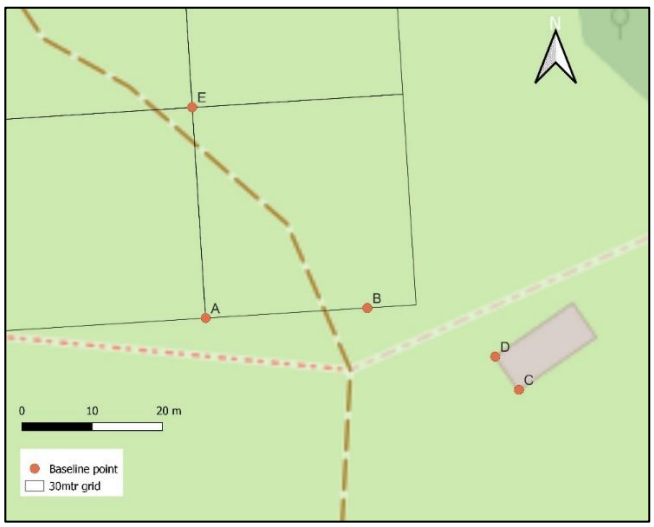

Figure 14: Baseline creation

- A 30-metre baseline running from A to E (Figure 14), was established from which to form the basis of proceeding grids.
- From the southern corner of the end of the barn, point A is measured at 43.50mtrs from point C, and 39.50mtrs from point D.
- Then from the northern corner of the end of the barn, point B is measured at .23.63mtrs from point C, and 18.55mtrs from point D.
- It was not possible to fully establish a 30-metre baseline right of point A. Point A to point B runs for 23mtrs. To establish point E, point A measures 30-metres, and point B to point E is 37.80mtrs in length.

APPENDIX B

Historic England Geophysical Survey Summary Questionnaire

Survey Details

Name of Site: A deserted medieval village and post-medieval farm buildings

County: West Sussex

NGR Grid Reference (Centre of survey to nearest 100m): SU 82836 16678 (X/Eastings 482836, Y/Northing 116678)

Start Date: 17th of April 2023 **End Date:** 28th of April 2023

Geology at site (Drift and Solid):

The area lies between two geological formations (British Geological Survey 2023).

- Principally: Seaford Chalk Formation - Chalk. Sedimentary bedrock formed between 89.8 and 83.6 million years ago during the Cretaceous period.
- Along the western edge: Lewes Nodular Chalk Formation - Chalk. Sedimentary bedrock formed between 93.9 and 86.3 million years ago during the Cretaceous period.

Known archaeological Sites/Monuments covered by the survey: National Heritage List Number 1005811

Archaeological Sites/Monument types detected by survey: Linear features associated with boundaries, trackways and field systems. Date - ?

Surveyor: Steven Cleverly with Chichester and District Archaeology Society volunteers

Name of Client, if any: Mr Mark Roberts (West Dean Estate archaeology advisor) and West Dean Estate

Purpose of Survey:

The geophysical survey intended to assist in a better understanding of the site. In particular the results will support West Dean Estate with their management plans for the site.

It was also an opportunity to survey by applying contemporary survey techniques, supplementing the 1970's topographical survey and modern LiDAR.

It was hoped that evidence would be provided to confirm the existence of tofts/homesteads and the overall extent of the deserted medieval village.

The survey also aimed to detect any geophysical evidence to support the ridge and furrow within the List Entry, as suggested by the LiDAR data, and to confirm if there are any other archaeological features of interest that have not been documented.

Location of:

a) Primary archive, i.e. raw data, electronic archive etc: Steven Cleverly

b) Full Report: Chichester and District Council Historic Environment Record and logged with Chichester and District Archaeology Society archive

APPENDIX C

Technical Details

Type of Survey (Use term from attached list or specify other): Resistivity

Area Surveyed, if applicable (In hectares to one decimal place):

Traverse Separation, if regular: One metre **Reading/Sample Interval:** One metre

Type, Make and model of Instrumentation: Geoscan RM15D

For Resistivity Survey:

Probe configuration: Single 0.5m twin array

Probe Spacing: Approximately 0.75 metre spacing

Land use at the time of the survey (Use term/terms from the attached list or specify other): Grassland - Pasture

Additional Remarks (Please mention any other technical aspects of the survey that have not been covered by the above questions such as sampling strategy, nonstandard technique, problems with equipment etc.): N/A

Technical Details

Type of Survey (Use term from attached list or specify other): Magnetometer

Area Surveyed, if applicable (In hectares to one decimal place):

Traverse Separation, if regular: One metre **Reading/Sample Interval:** 0.25m

Type, Make and model of Instrumentation: Bartington Grad 601 and Geoscan RM85

Land use <u>at the time of the survey</u> (Use term/terms from the attached list or specify other): Grassland - Pasture

Additional Remarks (Please mention any other technical aspects of the survey that have not been covered by the above questions such as sampling strategy, non standard technique, problems with equipment etc.): N/A