

WILTSHIRE ARCHAEOLOGY FIELD GROUP

Cadenham Manor, Foxham, Wiltshire
ST 98200 77100



Geophysical Surveys
September 2020

Report Number: 2020.01
Site Code: CM20

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Geophysical Surveys at Cadenham Manor, Foxham, Wiltshire

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Geology Map Source: British Geological Survey, Crown Copyright

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Summary

Martin Nye, the Chair of the Wiltshire Archaeological and Natural History Society (WANHS), is leading a community project to look at the history of the parish of Bremhill in Wiltshire. They have some HLF funding to work with a historian to produce a parish history and a chapter of the next VCH volume.

As part of this community project and to support National Archaeology Week the Wiltshire Archaeological Field Group had considered undertaking a test pitting exercise in the village of Foxham. As a kick-off for this project Martin Nye offered to allow a test pit to be dug on one of his lawns at his home, Cadenham Manor. Martin believed that the lawn might be the location of a previous manor house which was demolished before the current building was completed.

To try and locate the optimum position of the test pit it was first proposed that geophysical surveys should be carried out to identify if any features relating to the demolished building could be identified. A magnetometer and a resistivity survey were carried out on the 10th September and two resistivity profiles were carried out on the 28th September.

The magnetometer survey shows a sub-rectangular line of high and low readings, with a short extension to the west at the northern end. It is suggested that this represents a possible fence line. The resistivity survey shows a sub-rectangular area of low resistance which appears to fit inside this possible fence line. The resistance profile indicates sub-surface hollows within this sub-rectangular area which may be filled with burnt material which was shown in cores taken in the surface. No evidence for the earlier manor house was detected.

Date of the Surveys

Magnetometer and resistivity geophysical surveys were undertaken on the lawn over one day on the 10th September 2020. Two resistivity profiles were carried out on the 28th September 2020. The work was carried out by members of the Wiltshire Archaeological Field Group, a not-for-profit unit part of the Wiltshire Archaeological and Natural History Society (WANHS).

Site Owners

Cadenham Manor is the home of Victoria and Martin Nye. They were very happy to give permission for the geophysical surveys to be carried out.

Authorship

This report was written and compiled by Mike McQueen BA MA. The surveys were carried by Mike McQueen, John Samways and Colin Stares.

Copyright

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Disclaimer

This report has been compiled with all reasonable skill, care and attention to detail within the terms of the project design, and within the general operating procedures of the Wiltshire Archaeology Field Group and WANHS. No responsibility is accepted whatsoever to third parties to whom this report or any part thereof is made known. Any such party relies upon this report at their own risk.

Acknowledgements

The Wiltshire Archaeology Field Group would like to express our thanks, gratitude and appreciation to Victoria and Martin Nye for their permission and enthusiasm to carry out the geophysical surveys. Thanks also to John Samways and Colin Stares for agreeing to assist with the geophysical survey.

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The Location of the Survey

The surveys were carried out at Cadenham Manor in Foxham, Wiltshire, which is part of the Parish of Bremhill. Foxham is located to the north-east of Chippenham; Figure 1.

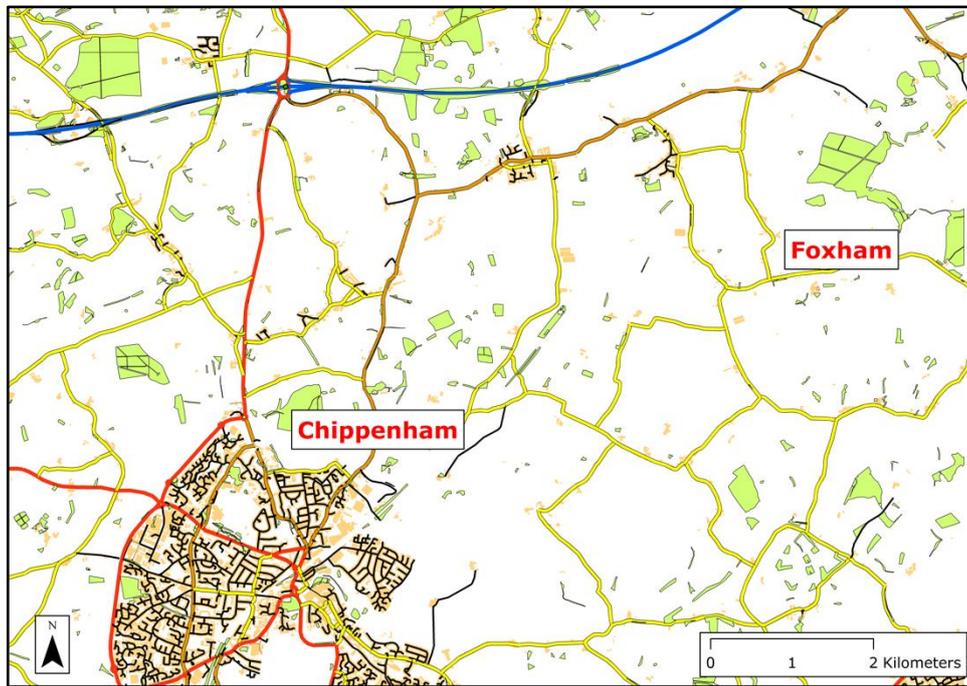


Figure 1: Location of Foxham (Base Mapping: Ordnance Survey Crown Copyright)

The magnetometry and resistance surveys were carried out on a lawn at Cadenham Manor, Foxham; Figure 2. The lawn lies to the south of the manor house between farm buildings to the west and the remains of a moat to the east.

Information on the history of Cadenham Manor is shown in Appendix 1.

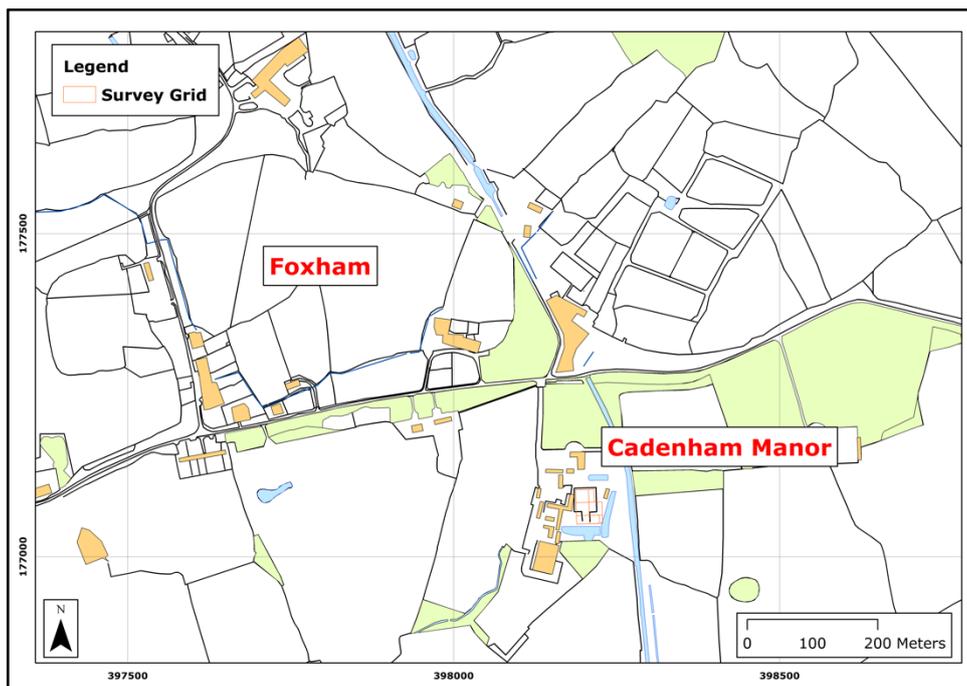


Figure 2: Location of the Survey Area (Base Mapping: Ordnance Survey Crown Copyright)

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The site is located in an area of Oxford Clay Formation - Mudstone (British Geological Survey), Figure 3.

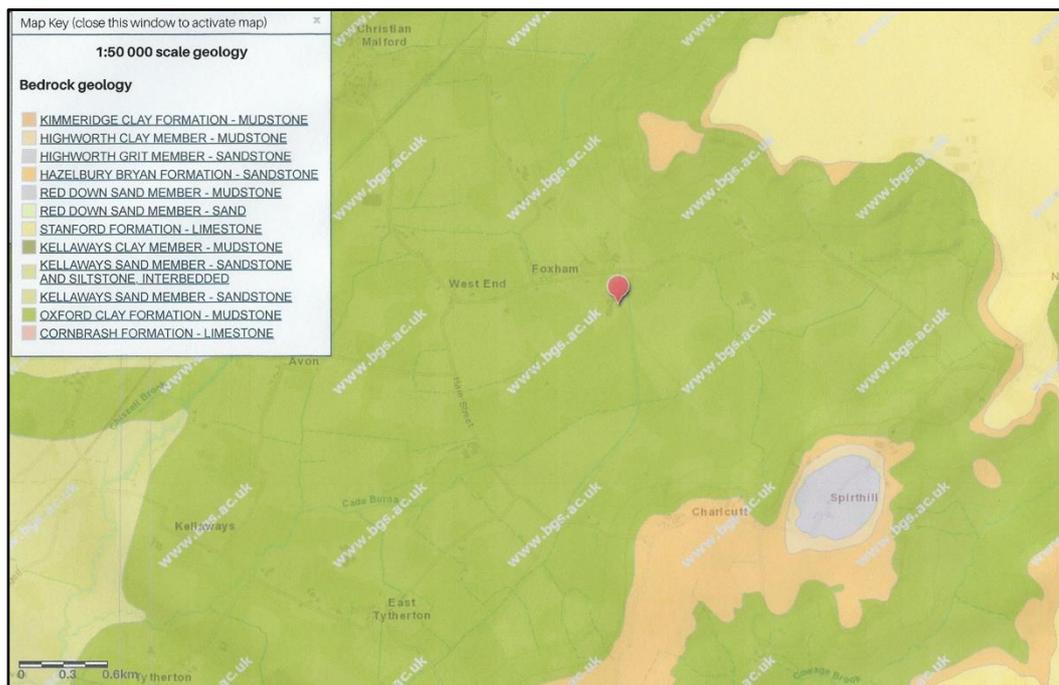


Figure 3: Underlying Geology (British Geological Survey, Crown Copyright)

The Reason for the Survey

Martin Nye, the Chair of the Wiltshire Archaeological and Natural History Society (WANHS), is leading a community project to look at the history of the parish of Bremhill in Wiltshire. They have some HLF funding to work with a historian to produce a parish history and a chapter of the next VCH volume.

As part of this community project and to support National Archaeology Week the Wiltshire Archaeological Field Group had considered undertaking a test pitting exercise in the village of Foxham. As a kick off for this project Martin Nye offered to allow a test pit to be dug on one of his lawns of his home, Cadenham Manor. Martin believed that the lawn might be the location of a previous manor house which was demolished before the current building was completed.

To try and locate the optimum position of the test pit it was first proposed that geophysical surveys should be carried out to identify if any features relating to the demolished building could be identified

The Wiltshire HER shows no record of significant monuments in the immediate vicinity of the lawn.

Carrying out the Survey

The magnetometer and resistivity surveys were carried out on the 10th September 2020 by Mike McQueen, supported by John Samways and Colin Stares. Two resistivity profiles were carried out by John Samways and Mike McQueen on the 28th September 2020.

The lawn was under grass and was flat. There were a number of mature trees in the survey area. There was an open circular well, roughly 1.5m in diameter, on the west side of the lawn covered by a metal grid.

The weather on both days was dry, overcast and warm.

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Survey Grids

Full and partial 20m x 20m survey grids were laid out as shown in Figure 4 below using a MobileMapper 300 and Pocket GIS Software. The MobileMapper 300 was fully RTK corrected to give an accuracy to 0.002m – 0.010m.



Figure 4: Survey Grid (Base Mapping: Ordnance Survey, Crown Copyright)

The position of the profile lines was also marked out using the MobileMapper 300.

The Magnetometry Survey.

The magnetometry survey was carried out using a Bartington Grad601-2 Dual Sensor Gradiometer set up as follows:

Units:	nT
Collection Method:	Zigzag
Sensors:	2 @ 1.0m spacing.
Readings / Sampling	1 per 1m / 4 per 1m
Dummy Value	32000
Direction of 1st traverse	East
Palette	Greyscale

The starting point of the survey was the north-west corner of the grid and the direction of the first traverse was to the east.

The survey results were processed using TerraSurveyor software. The results were processed in the following:

- De-strip: Median Traverse All Grids
- De-Stager: 50cm All Grids
- Clip: 3.0 Standard Deviations

The unmodified and modified results are shown below in Figure 5.

Geophysical Surveys at Cadenham Manor, Foxham, Wiltshire

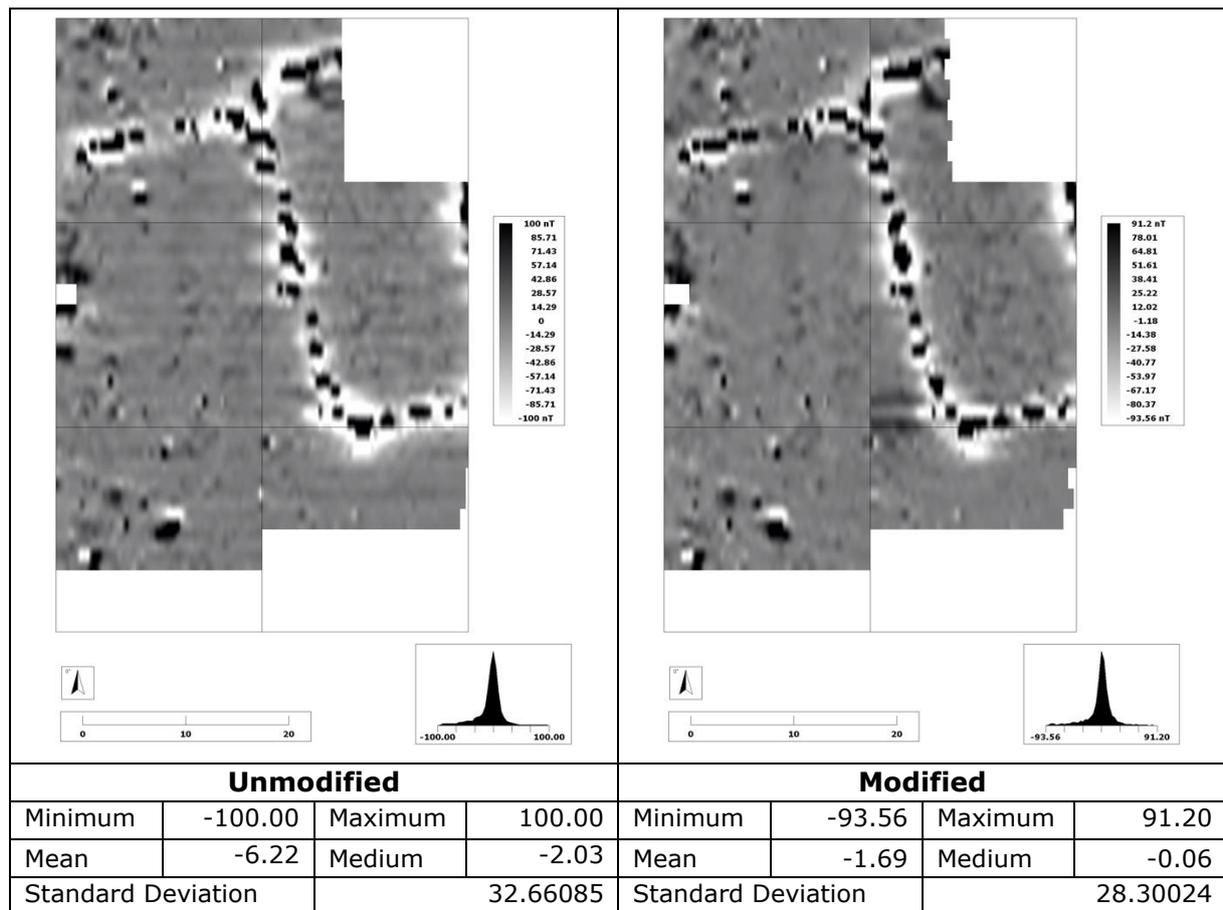


Figure 5: Magnetometer Survey Results

The Resistivity Survey.

The resistivity survey was carried out using a Frobisher TAR-3 meter set up as follows:

Units:	nT
Collection Method:	Zigzag
Readings / Sampling	1 per 1m / 2 per 1m
Dummy Value	32000
Direction of 1st traverse	East
Palette	Greyscale

The starting point of the survey was the north-west corner of the grid and the direction of the first traverse was to the east.

The survey results were processed using TerraSurveyor software. The results were processed in the following way:

- De-strip: Median Traverse All Grids
- De-Stager: 50cm All Grids
- Clip: 2.0 Standard Deviations

The unmodified and modified results are shown below in Figure 6.

Geophysical Surveys at Cadenham Manor, Foxham, Wiltshire

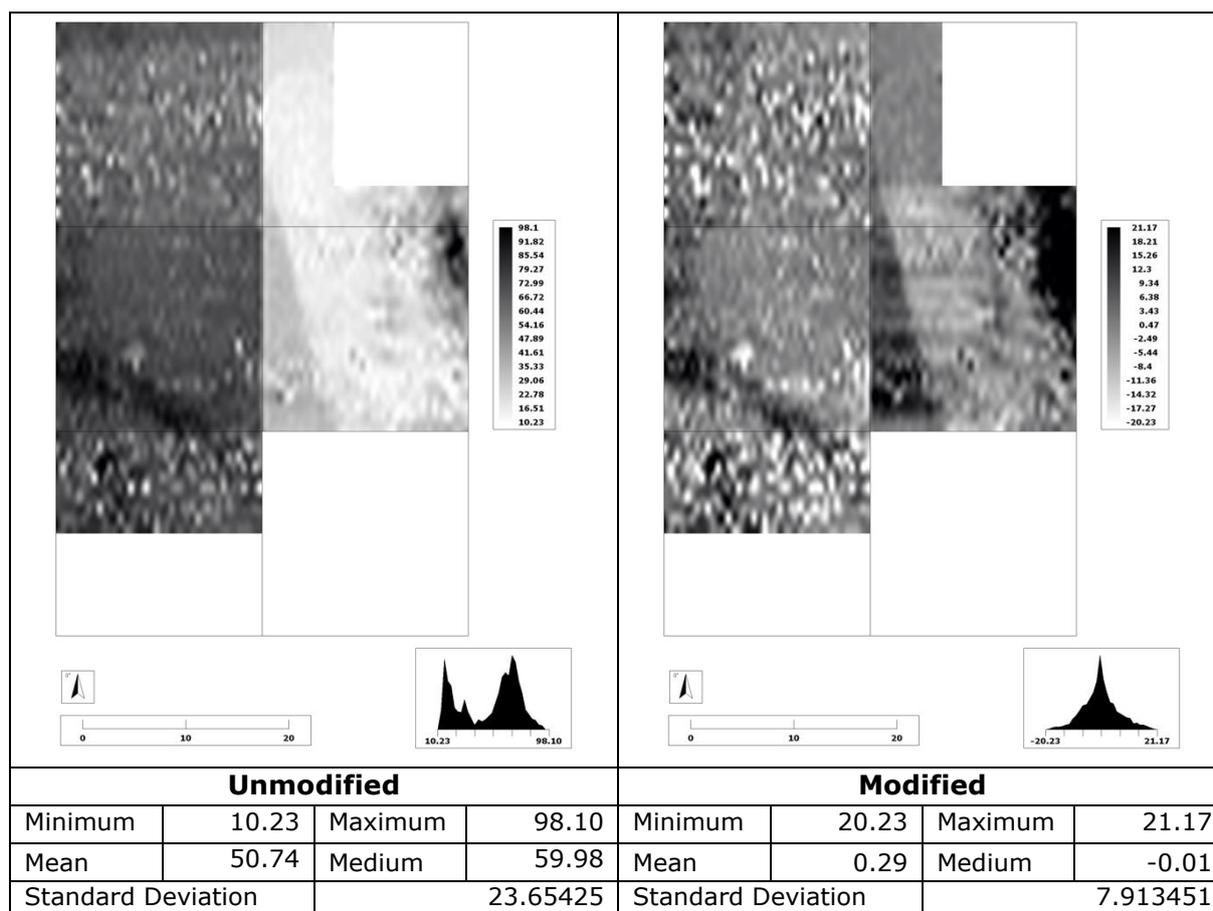


Figure 6: Resistivity Survey Results

The Profiling Survey.

The resistivity profiles were also carried out using a Frobisher TAR-3 meter set up as follows:

Units:	Ohms m
Collection Method:	Wenner array
Readings	1 per 1m
Dummy Value	100

The Tar-3 meter was connected to a cable set via a custom built probe connection and switching box (J. Samways). Data was processed using Geotomo Software Res2Dinvx64 (version 4.03.31)

The geophysical survey was carried out, as far as possible, in accordance with EAC Guidelines 2. Electrode separations of 1m were used as suggested for imaging archaeological features, together with the most suitable configuration. Practical constraints restricted this survey to the available instrumentation (a TAR-3 meter configured for a Wenner a array, with manual switching along one survey line at a time). Survey lines were set out at 2 places across anomalies revealed in the magnetometry survey- see Figures 8 & 10. The starting point of the first line was at the north west end of the line which was laid out to the south-east. The starting point of the second line was at the northern end of the line which was laid out to the south. The 40 electrode probes were spaced 1m along each line, with readings successively taken with probes spaced from 1 to 6 probes apart.

Geophysical Surveys at Cadenham Manor, Foxham, Wiltshire

The resistance values obtained from the TAR-3 meter were converted to resistivity using the following equation, applicable where the probe insertion length is 20 times less than the shortest probe separation distance:

$$\rho_E = 2 \times \pi \times a \times R_w$$

where:

- ρ_E = apparent soil resistivity (Ωm)
- a = electrode separation (m)
- R_w = measured resistance (Ω)

Resistivity data from each line were inverted to infer a subsurface resistivity model using Res2Dinvx64 software. For error estimation during the inversion the robust inversion method was selected (absolute errors or the L1 norm) as this method is more tolerant of discontinuities between adjacent cells and thus tends to resolve boundaries between layers more sharply than the standard least mean squares inversion. The model space was divided into $\frac{1}{2}$ cells (half the base electrode separation) to provide finer resolution of any near-surface anomalies. No allowance has been made for the slight variations in the ground surface.

The results are shown below in Figure 7.

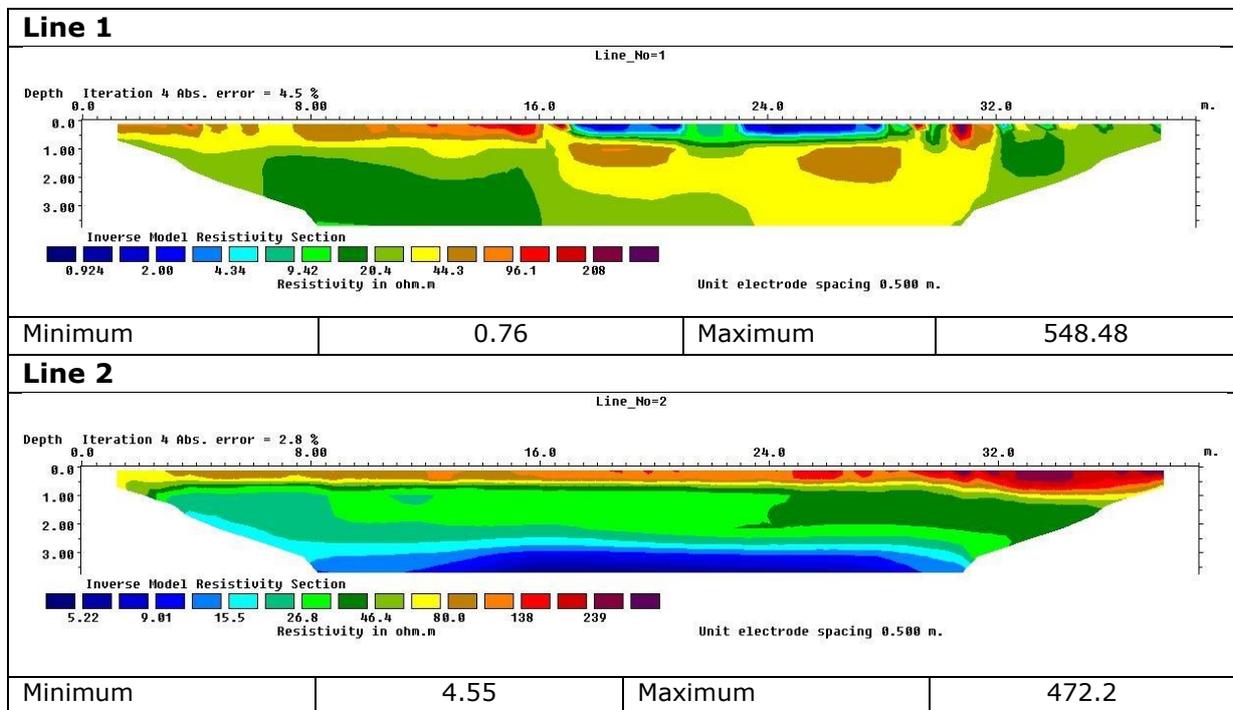


Figure 7: Resistivity Profile Survey Results

After the profiles had been recorded some limited coring was carried out to a depth of 12-15 inches on some of the features.

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Analysis of the results

The survey results have been mapped using ArcGIS; Figures 8, 9 and 10 below.



Figure 8: Magnetometer Survey (Base Mapping: Ordnance Survey, Crown Copyright)

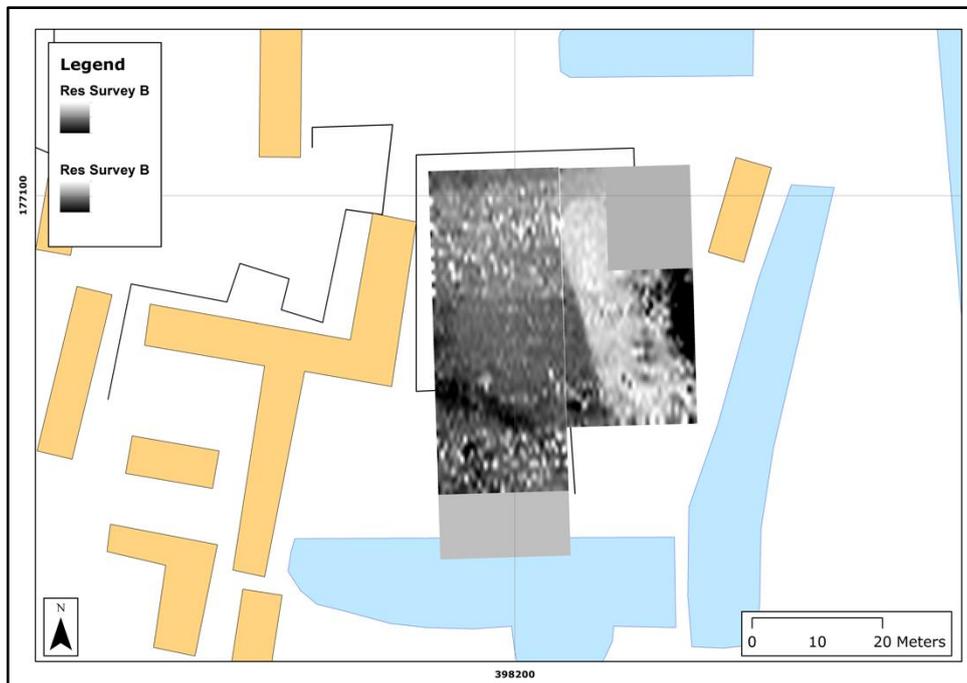


Figure 9: Resistivity Survey (Base Mapping: Ordnance Survey, Crown Copyright)

Geophysical Surveys at Cadenham Manor, Foxham, Wiltshire

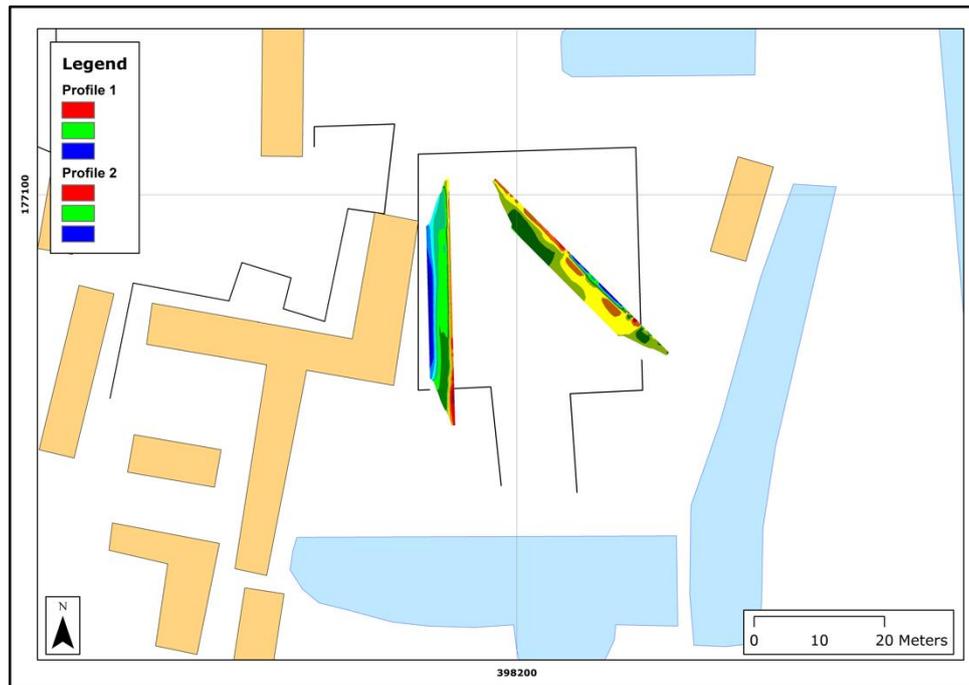


Figure 10: Resistivity Profiles (Base Mapping: Ordnance Survey, Crown Copyright)

Each profile shows potential subsoil features down to a depth of 3m which is possibly below the water table level if the depth of the water in the well is anything to go by.

The following Figure 11 shows the profile line results overlaid onto the magnetometer results.

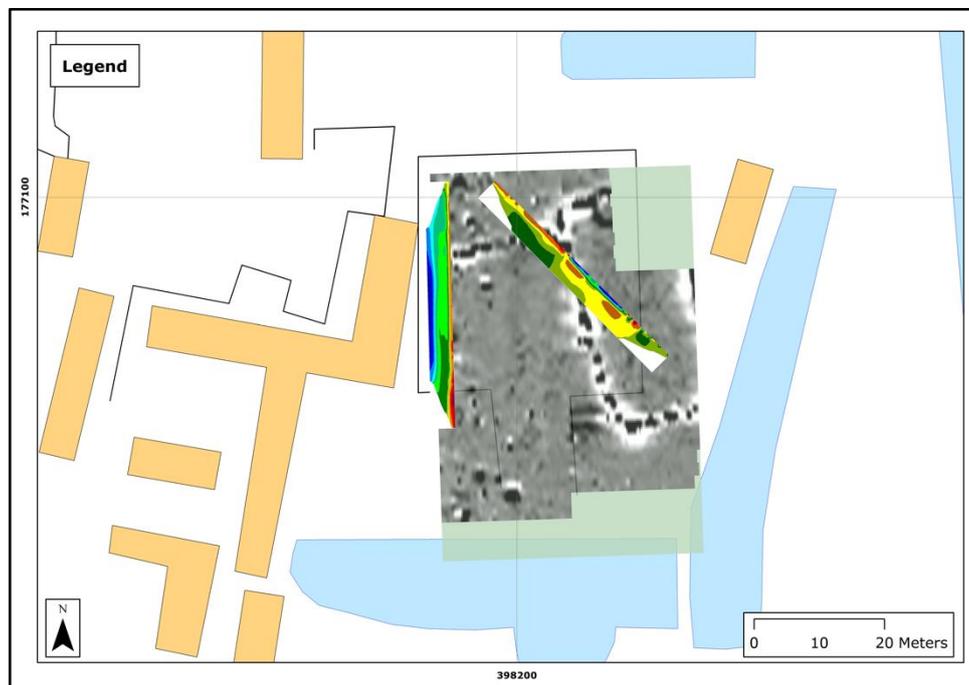


Figure 11: Resistivity Profiles overlying the Magnetometer Survey (Base Mapping: Ordnance Survey, Crown Copyright)

A number of possible features appear to show up on the results and these have been mapped in Figure 12.

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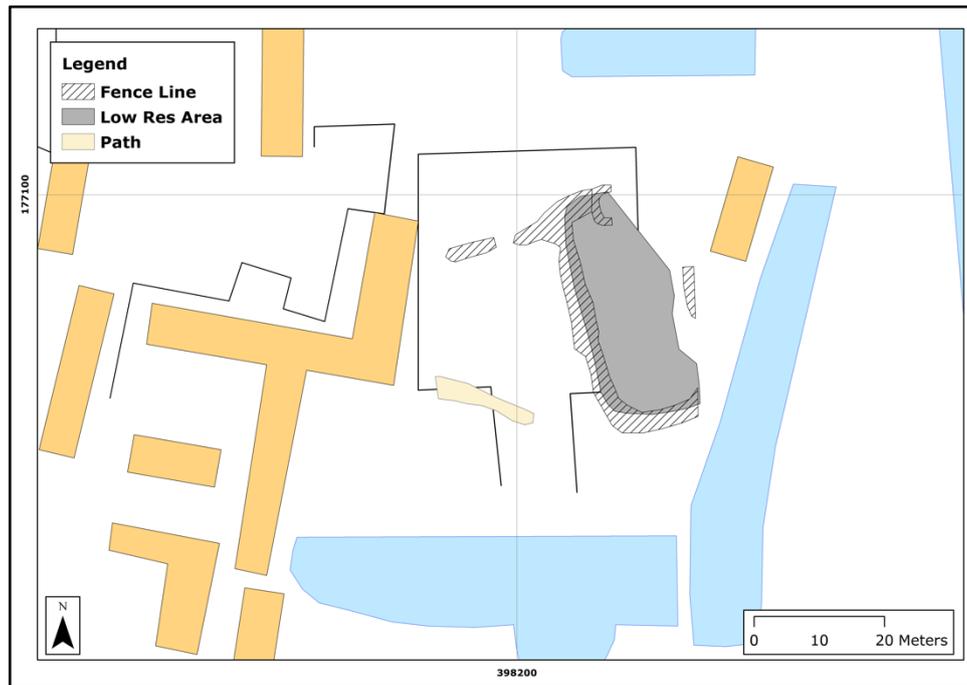


Figure 12: Survey features (Base Mapping: Ordnance Survey, Crown Copyright)

The most prominent feature shows up clearly on the magnetometer survey and is a sub-rectangular line of high and low readings, with a short extension to the west at the northern end.

Normally a feature like this on a magnetometer survey would suggest that there is a metal pipeline below the surface. However, the extreme readings are not quite continuous and it would also be an odd shape for a pipeline. The magnetometer results were therefore shown to David Sabin of Archaeological Surveys. His comment was:

“Looks like what I would expect from a former wrought iron fence or similar. The more rounded or square high magnitude anomalies look like the remains of vertical uprights either cut off or rusted off, the longer responses could be bits of the horizontal bars. Could the Victorians have fenced something off?”

Profile Line 1 was run across this feature. The yellow/brown areas on the results show hollows, possibly ditches or trenches, up to 2m deep. Coring over these hollows produced a burnt material of fine cinders to a depth a 9". These deeper hollows may be filled with this material.

The resistivity survey shows a sub-rectangular area of low resistance which appears to fit inside the possible fence line. Coring over this area produced sandy soil, very different from elsewhere on the lawn. This could mean the area was being used for a specific purpose which might have needed to be fenced off.

There is also a high resistance area to the south west and this area was also particularly reddish on the southern end of Profile Line 2. The ground here was very hard when the survey pegs were being placed in this area. This suggests that it could be the remains of a path or trackway.

The reddish areas towards the northern end of the profile lines represent areas where there is potentially rubble lying just below the surface. This ties in with the coring which brought up signs of bricks, stone and mortar just 6-9 inches below the surface.

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The survey results still do not clearly show firm evidence of the site of the old manor house. However, it would be interesting to put a test trench across the line of the feature to try and explain what it might be.

Conclusions

The survey has found evidence of past human activity in the lawn area but it is not clear what has caused the anomalies seen in the magnetometry and resistance results. There is no clear evidence from these results to indicate the location of the former manor house.

Next Steps

Although no clear evidence of the location of the former manor house has been found by the geophysical surveys Martin Nye has confirmed that he would still be prepared to allow a test pit to be dug. The aims would be:

- To try and confirm what the feature or features seen in the magnetometry and resistance results are.
- To find appropriate dating evidence.
- To give local residents an opportunity to become involved in an archaeological project

In the current Covid-19 environment test pitting involving a number of people would not be feasible. However once this becomes possible again and subject to agreeing an Excavation Project Design with the County Archaeologist, an excavation would be undertaken with community involvement under the Bremhill HLF project, supervised by members of the Wiltshire Archaeological Field Group.

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Appendix 1 – History of Cadenham Manor by Martin Nye

There has been a settlement here for over nine hundred years, with the first recorded mention of Cadenham in the Domesday Book of 1086. The estate is described at that time as belonging to Earl Hugh and held by one William from him, consisting of land for two ploughs, meadows and woodland, with two slaves and eight smallholders. It is likely that people were settled here for some time before that, as the name Cadenham is of Anglo-Saxon derivation, meaning Cada's ham or homestead. You can see the same name locally in Catcomb Wood to the east and the small stream Cade Burna that runs from Catcomb into the River Avon in Tytherton Lucas. A good supply of spring-fed water and soils well-suited to pasture were probably what originally made the site attractive.

The current house was built in 1690 by Sir George Hungerford and his wife Frances Seymour. It was constructed a few yards from the previous larger house which had been occupied by the Hungerford family for the previous two hundred years. Little is known about the house or its occupants at that time, although the diarist John Evelyn and his wife, niece of the Hungerfords, visited in 1654 when he wrote "we did nothing but feast and make good cheer".

That original house was described by John Aubrey, the local historian, as "propt for fear of falling" in 1670, and was likely too expensive for the Hungerfords to repair, so they decided to build a smaller house using many of the materials from the old house. It seems they used stone mullion-and-transom window frames, a fireplace, oak panelling and part of the chimney stacks from the old house. There is also a suggestion that some of stone was from Bradenstoke Abbey, after the dissolution of the monasteries in the 16th century. All that remains of the original house is the moat that surrounded it, and a dovecote, both now incorporated into the gardens.

Sir George was part of the junior or cadet branch of the main family who resided at Farleigh Hungerford, inheriting an estate of £1,000 p.a. in 1667 and was an MP for 40 years. He had a long-running law suit with the Vicar of Bremhill, Rev. John Tounson over who should pay the £20 a year cost of a curate for the church in Foxham. He also ended up in litigation over money and inheritances with both his mother (who lived until she was over 90) and his younger son Walter, such that at his death in 1712 his affairs were 'much entangled', due largely to the expenses, estimated at more than £2,700, of the 'groundless and unchristian suit' brought against him by his younger son Walter. His eldest son George, who died in 1697, is commemorated in the splendid Baroque marble monument in the chancel of St Martin's Church in Bremhill. Sir George was keen on demonstrating his grand family and social connections - on the front of the house are the family crests of the Hungerfords and the Seymours, with coronets to show the families were part of the peerage. He also commissioned a very ornate bookplate for his extensive library of books.

Walter Hungerford sold the estate in 1720 to the Devizes MP Benjamin Haskins Stiles who also owned Bowden Park near Chippenham. By 1780 Cadenham was in the possession of Henry Grant, on his death in 1812 it was bought by the Fry family of Christian Malford. They lived here for over 70 years, during which time the Wilts and Berks Canal was built, passing close to the house on the east side. This necessitated creating a new drive to the house, as originally Cadenham was approached from the east, across the field to the left of the house as you look at it from the road. The new drive was built where it is today, and the back of the house became the front. The Pocock family lived here in the late 19th century, selling to the Shipp family in 1900 at which time there was a 36 foot long cheese room.

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The estate was bought in 1945 by Elizabeth Blackwell, the current owner's grandmother after she was widowed in the war. She lived here until her death in 2000, making improvements to the house and farm buildings using local materials and creating a remarkable garden around the moat of the original house. The garden is usually open to the public under the National Gardens Scheme in early June.

Historic England Listings:

CADENHAM MANOR

- **Heritage Category:** Listed Building
- **Grade:** II
- **List Entry Number:** 1022428

DOVECOTE TO SOUTH EAST OF CADENHAM MANOR

- **Heritage Category:** Listed Building
- **Grade:** II
- **List Entry Number:** 1363800