

WEST KENT

ARCHAEOLOGICAL SOCIETY

Geophysical Report

Castle House (Otford Palace)

Otford, Kent

August 2016

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Summary

The survey was to determine through an earth resistance survey whether archaeological remains of 3 different structures exist in the garden of Castle House, those being any remains of Otford Palace, a Roman Villa discovered in 2012/13 in an adjacent field, and also a structure discovered during a small evaluation excavation on the property.

The results produced anomalies likely to be associated with the Roman Villa and with the Palace, no anomalies are likely to represent earlier phases of Castle House.

Contributors

Andrew Putman, Kevin Fromings and Geoff Burr

Acknowledgements

The author gives thanks to Geoff and Lesley Burr, Kevin Fromings, Francis Sanwell, Charles Shee, Gary Bennett, Michael Curtis, John English, Caroline Farquhar, John Townsend and other members of West Kent Archaeological Survey who assisted with the survey and to the landowners, Mr and Mrs Roy, who kindly allowed access to their garden.

Fieldwork and Report

The fieldwork was carried out on the 3rd, 7th, 20th and 21st August and the report was completed September 2016.

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Contents

Introduction	3
Method	4
Results.....	4
Conclusion.....	6
Discussion.....	6
References	8
Figure 1. Location Map	9
Figure 2. Schedule Boundary	10
Figure 3. Survey area limits.....	11
Figure 4. Survey Results	12
Figure 5. Results Interpretation	13
Figure 6. Conduit Routes from Lake	14
Figure 7. Otford Palace Moat.....	15
Figure 8. Stream and conduit routes across the area.....	16
Figure 9. Castle House survey alongside Church Field survey	17
Appendix A: Black and White Survey view	18
Appendix B: Relief Survey View	19
Appendix C: Survey Google Earth Overlay.....	20
Summary of Key Data.....	21

Introduction

The site is situated in a private garden adjacent to Otford Palace, Otford, Kent. (NGR TQ 52946 59171)(Figure 1). The garden is included as part of the scheduled area of Otford Palace under List Entry 1005197. (Figure 2)

Castle House is a grade 2 listed building with private gardens containing two scheduled monuments, Otford Palace (Monument Number 1005197) and 'Becket's Well'(Monument Number 1005152). A nearby spring feeds Becket's Well and flows through 3 ponds which are believed to have fed fresh water for the Palace, a separate spring feeds another stream within the garden that also connects to the ponds.

A Roman Villa was discovered through geophysical survey by West Kent Archaeological Society in a non-scheduled area of the garden in 2012/13. The scheduled area of the garden holds potential for further Roman structures.

During an evaluation excavation preceding an extension at Castle House a fire place was discovered and is believed to be from an earlier phase of Castle House .

The geophysical survey aims to determine whether any evidence of further structures relating to the Palace, Roman Villa or Castle House are present in this area of the garden.

Method

The earth resistance survey was conducted over the land indicated in Figure 3, the red line indicating the area surveyed.

A Geoscan RM85 resistivity meter was used with a twin probe array spaced at .5 metre.

Readings were taken at 1metre x 1 metre intervals.

20 x 20 metre grids were laid out by tape using canes as grid markers.

The survey consisted of 35 grids covering approximately 1.4 hectare.

Dummy logs were performed around obstacles.

Survey data was processed using Snuffler freeware software.

Processing consisted of 'Modify Selection' of 2.0 ohms subtracted from grids C1 and C2, edge correction, despiking tool, clip data, horizontal and vertical Interpolation.

Results

Figure 4 shows the results in 'Linear Rainbow' with red being the highest resistance and purple the lowest.

To aid understanding of the interpretation, Figure 5 is labelled with areas of interest.

A – A large area of high resistance, with no clear wall lines it could be seen as rubble spread from a building. Previous experience of this survey method and test pitting on adjacent land has shown that this high resistance response can be caused by the chalk geology being very close to the surface.

B – A high resistance linear feature, most probably the conduit that feeds the stream at Otford Palace with water from Colet's Well to the north of the site. This feature appears as a parch mark in the Google Earth 2003 aerial photo. The appearance of this feature in the survey suggests the conduit is less than 0.5 metres in depth as that is the maximum depth this probe array can achieve.

C – Large area of high resistance, this is a solid area of high resistance with a clear change of high to low resistance at the edges, this differs from area A which had patches of high resistance with gradual change to lower resistance.

The high resistance could be caused by a number of very large mature trees close by absorbing moisture from the ground.

This area would require further investigation to determine the cause of the high resistance as the possibility of a building should not be excluded as this area is the closest point to Otford Palace and on the alignment of the towers and gatehouse.

D – Medium to High resistance linear feature. This area of the site is for vehicular access from the main drive to the adjacent field, the feature in the results is likely caused by vehicle compaction of the ground, hardcore in the ground to harden the surface and by the very large *Leylandii* trees.

E – A low resistance linear feature most likely explained by a scaffold tube beneath the grass that starts at the stream and heads toward the garage, most probably used as a cable run for power to the garage.

F – A small edge of high resistance alongside the garage, if the survey was viewed in isolation it could be concluded the results are caused by the foundations and building waste of the garage.

When viewed in conjunction with a previous survey in the next field, it is most probable the high resistance of the end of the northern range of the villa building from the adjacent field.

G – A small area of high resistance most likely the remains of a patio and buildings that were demolished in the 1990's

H – Faint curving line of medium resistance, possible early garden feature or structure, shows as right angular feature in relief.

I – Line of high resistance, a water conduit from the lake that fed the southern range of the Palace

J – Line of medium resistance, another water conduit from the lake feeding another area of the southern range of the Palace

K – Line of medium to low resistance, possibly another water conduit from the lake.

Conclusion

From the results no clear buildings can be determined, although potentially buildings or structures that may relate to either the Palace or the Roman Villa could exist at the far West and East of the surveyed area. No conclusive evidence has been found to suggest previous buildings associated with Castle House.

The low resistance areas of purple and blue often associated with wet, ditch, pit features could suggest that the area may have been influenced by the close proximity of springs and streams. As such it could have been a marshy area prone to flooding and therefore not suitable for building on. The location of Castle House in the middle of survey area and the influence of its associated landscaping and buildings interrupts the low resistance area which may have continued down to the lake.

Therefore it may be that neither the Palace nor Roman villa extended into this area due to environmental conditions.

Discussion

To produce a conclusion purely on looking at the results alone would not give a full understanding of the survey, the results should be viewed as additional evidence to known information.

At the southern end of the site two culverts can be seen exiting the lake, the northern conduit can clearly be seen in the survey results while the southern conduit is faint in the results.

Both these conduits head west towards the southern tower of Otford Palace, where an excavation in 1974 uncovered the south eastern range containing garderobes, sewers and moat. Figure 6 shows the excavation plan by Philp (1974, p160) overlaid onto Google Earth with the survey results. The conduits from the lake would feed Aqueduct A and B on the plan. A second plan published in *Archaeologia Cantiana* (Stoyel, p262) shows a larger moat (Figure 7), this larger moat plan may be based on Philp's description of a later moat found during the excavations that extended over 8m to beyond the limit of the land they were working on. With earlier medieval buildings under the Tudor buildings and assuming that both were fed from the lake conduits, did the conduits continue up to Becketts Well before the lake was built or was a form of water management in place before being replaced by a more formal lake?

It is likely that the site required some form of water management even in the Roman period. The site is situated at the base of steep hills to the east and right on the edge of the change

from chalk to clay which explains the numerous springs around the area. The spring at Colet's Well feeds the north-south stream at Castle House and the spring at Becket's Well feeds the east-west stream, both of these feed the lake which in turn feeds the Palace site.

The site could have suffered from flooding from surface water draining off the hills and from increase flows of the springs and streams, there are modern conduits at the streams at Castle House that may have been added to aid water control and prevent flooding. Figure 8 shows the known streams and conduits around the site with flow arrows, the black dots indicate that the start or end location has not been determined. These conduits may have been added by the landowner in the 1930's who owned the Palace site as well as Castle House and land on Bubblestone road to the south, it is at this time, approximately 1934 that the stream was built in front of Palace and the conduit can be seen in the survey results in the north west corner.

The Roman Villa in the adjacent field discovered in 2012/13 uncovered a northern range and eastern wing, it was suggested that a western wing was likely to exist in the garden at Castle House to form a 3 sided villa. The results of the current survey produced a high resistance area around the garage. When the survey is viewed alongside the villa survey it seems probable that the garage is on the end of the northern range (Figure 9). The survey results also suggest that there is no western range, the high resistance area by the tennis court could be the end of the range but the middle has been landscaped away. The survey does confirm that the villa doesn't extend any further into the gardens of Castle House.

Based on the evidence of the survey and other information available, it is suggested that further work on this site should consider the topographic and environmental conditions during the Roman and medieval periods to determine if the proximity to the springs caused potential flooding affected the site.

References

Philp, Brian. (1984)

Excavations in the Darent Valley, Kent

Kent Archaeological Rescue Unit

Alan Sutton Publishing

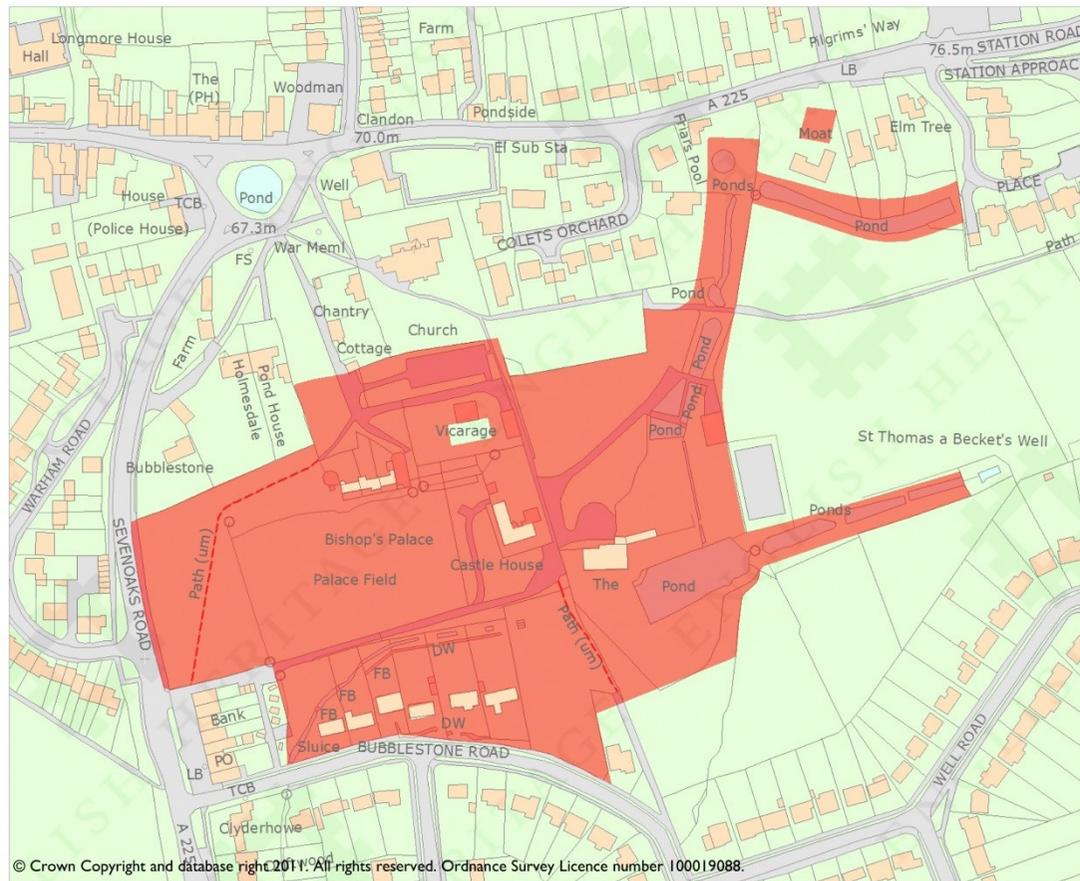
Stoyel, A. 1984

Archaeologia Cantiana

The Lost Buildings of Otford Palace, Volume 100 (1984) p259-280



Figure 1. Location Map © Ordnance Survey



Name: Otford Palace

Heritage Category:	Scheduling
List Entry No :	1005197
County:	Kent
District:	Sevenoaks
Parish:	Otford

Each official record of a scheduled monument contains a map. New entries on the schedule from 1988 onwards include a digitally created map which forms part of the official record. For entries created in the years up to and including 1987 a hand-drawn map forms part of the official record. The map here has been translated from the official map and that process may have introduced inaccuracies. Copies of maps that form part of the official record can be obtained from English Heritage.

This map was delivered electronically and when printed may not be to scale and may be subject to distortions. All maps and grid references are for identification purposes only and must be read in conjunction with other information in the record.

List Entry NGR:	TQ 53051 59376
Map Scale:	1:2500
Print Date:	17 March 2012


 ENGLISH HERITAGE
 1 Waterhouse Square, 138 -142 Holborn, EC1N 2ST
 Tel: 020 7973 3000 www.english-heritage.org.uk

Figure 2. Schedule Boundary © Historic England



Figure 3. Survey area limits

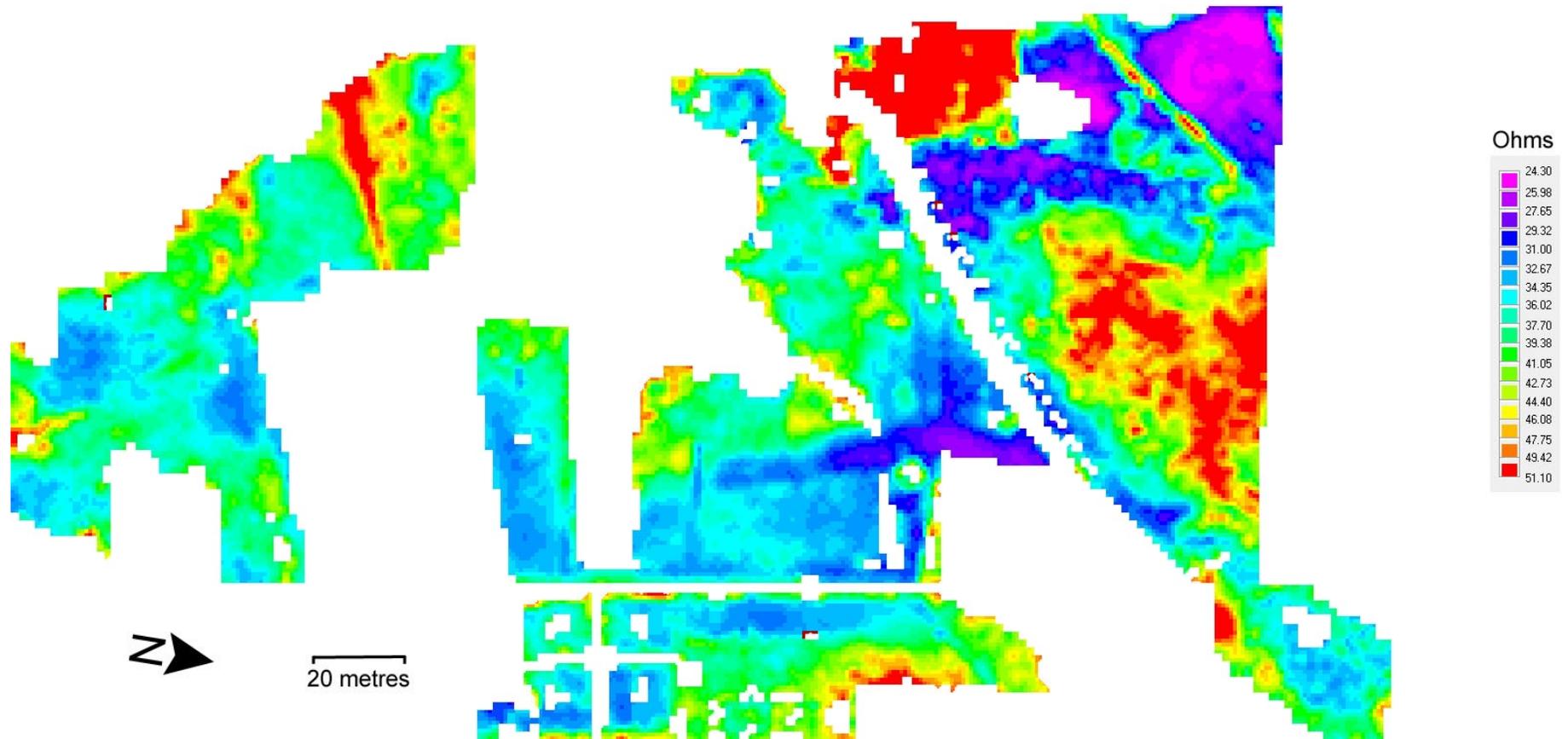


Figure 4. Survey Results - Linear Rainbow

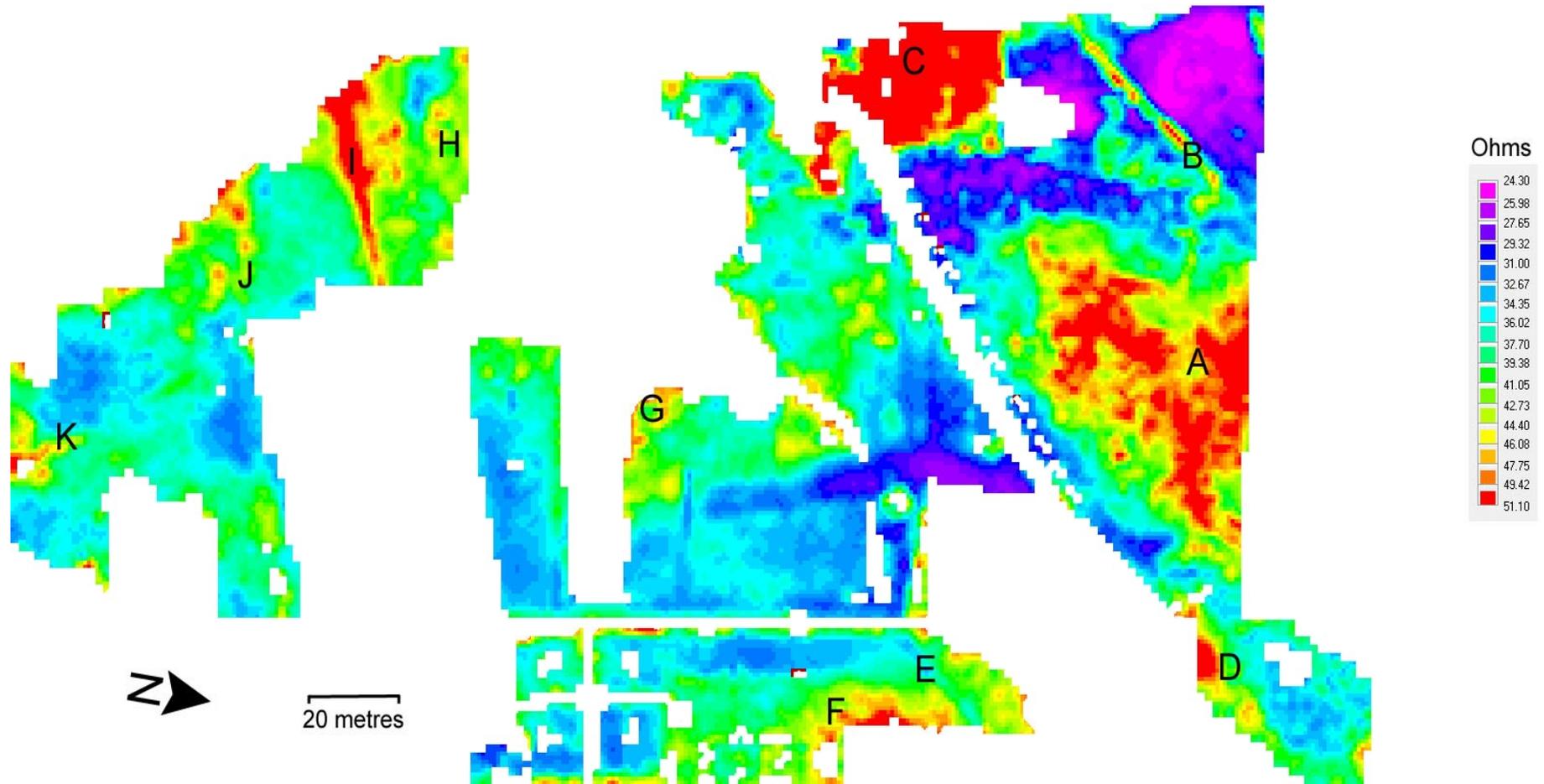


Figure 5. Results Interpretation

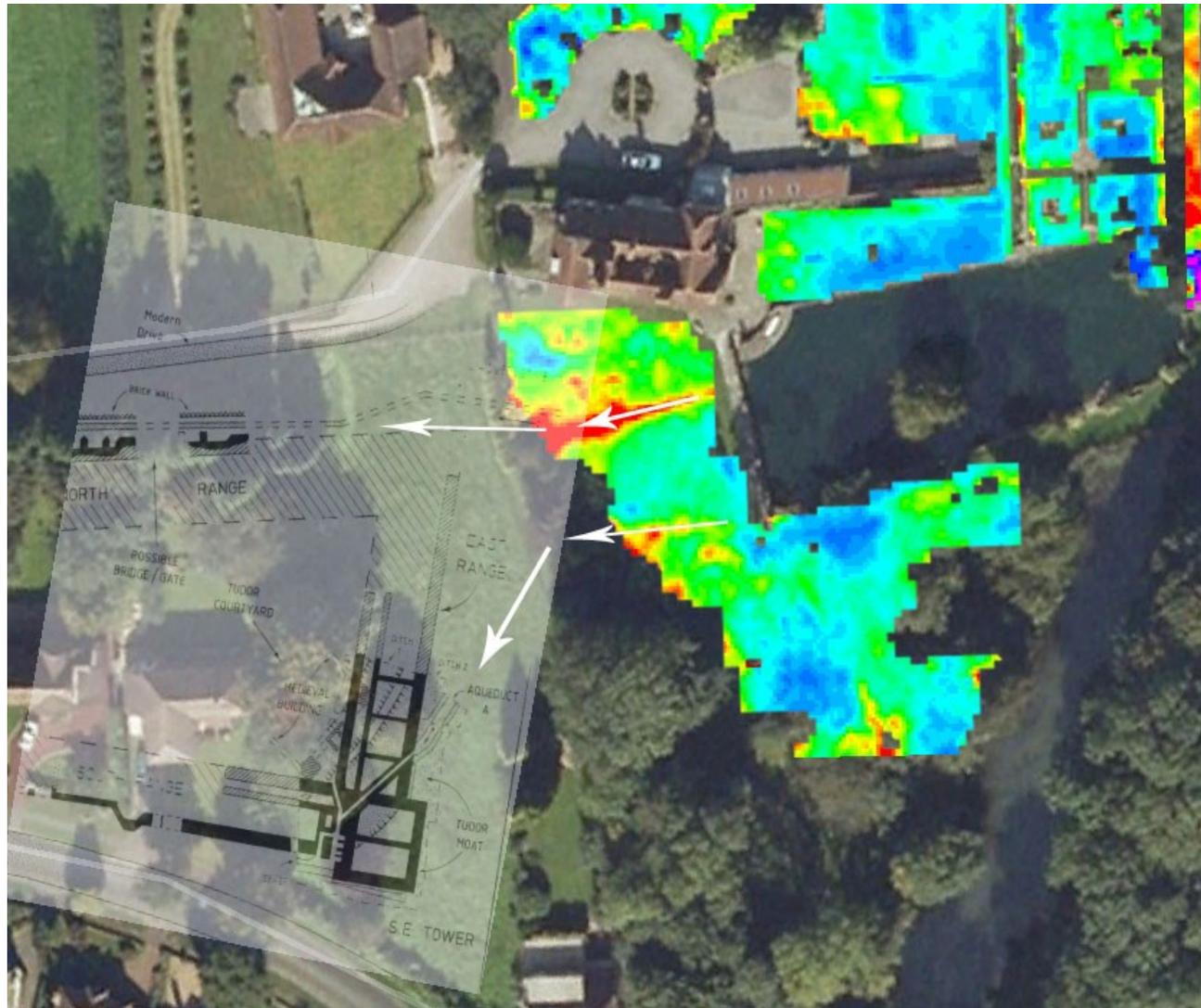


Figure 6. Conduit Routes from Lake :WKAS Survey over Google Earth.

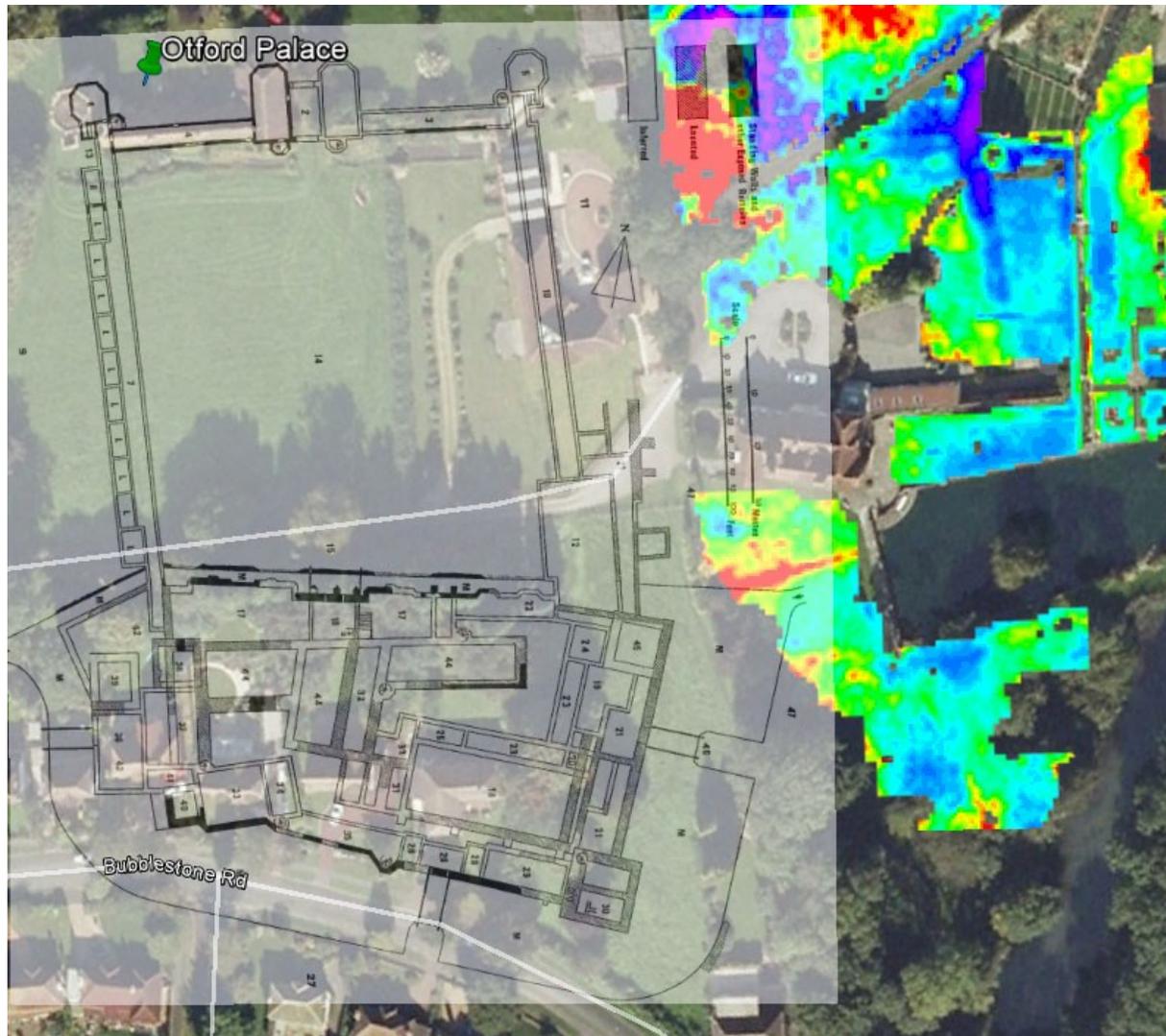


Figure 7. Otford Palace Moat :WKAS Survey over Google Earth.

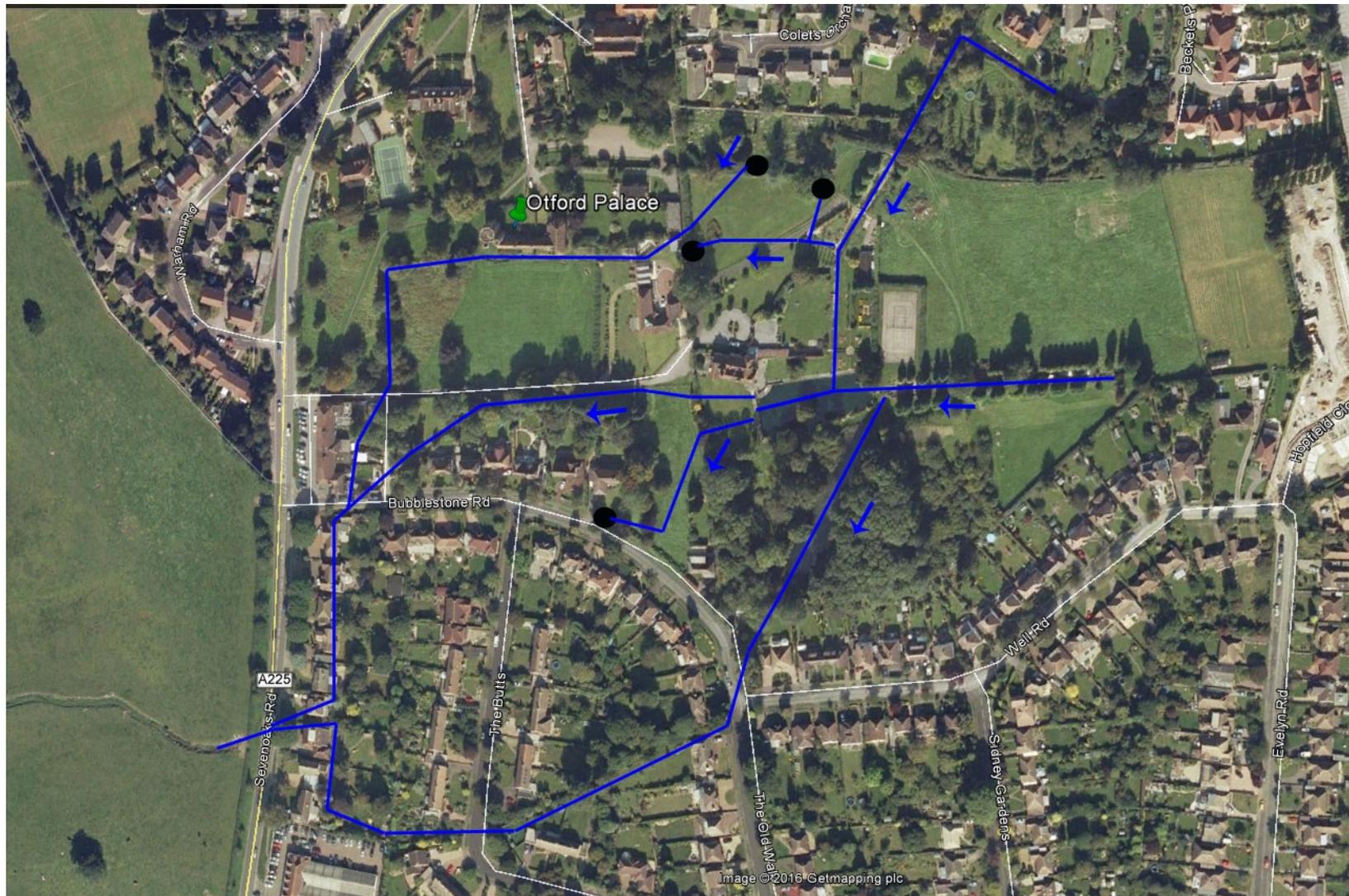


Figure 8. Stream and conduit routes across the area.

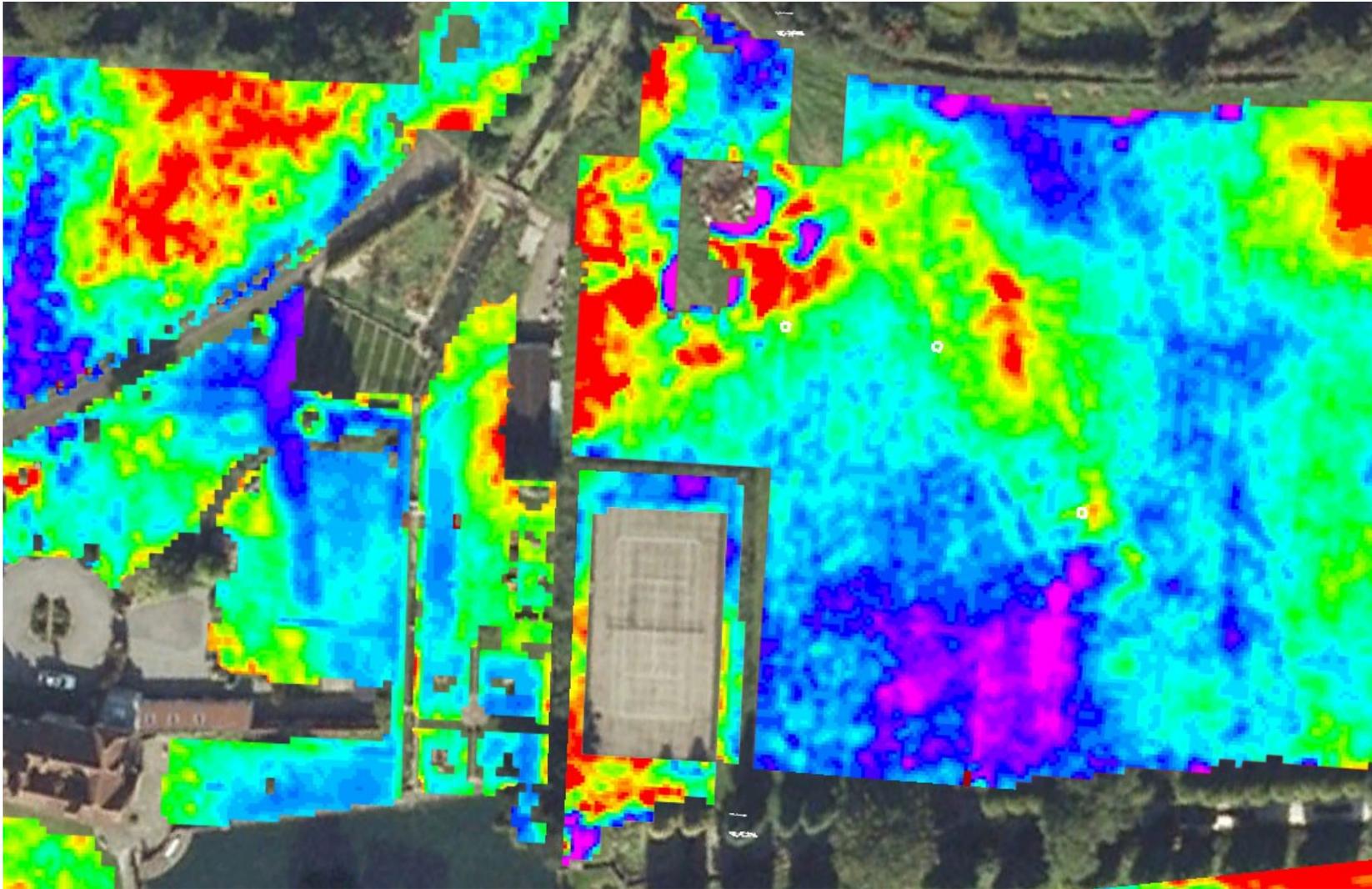
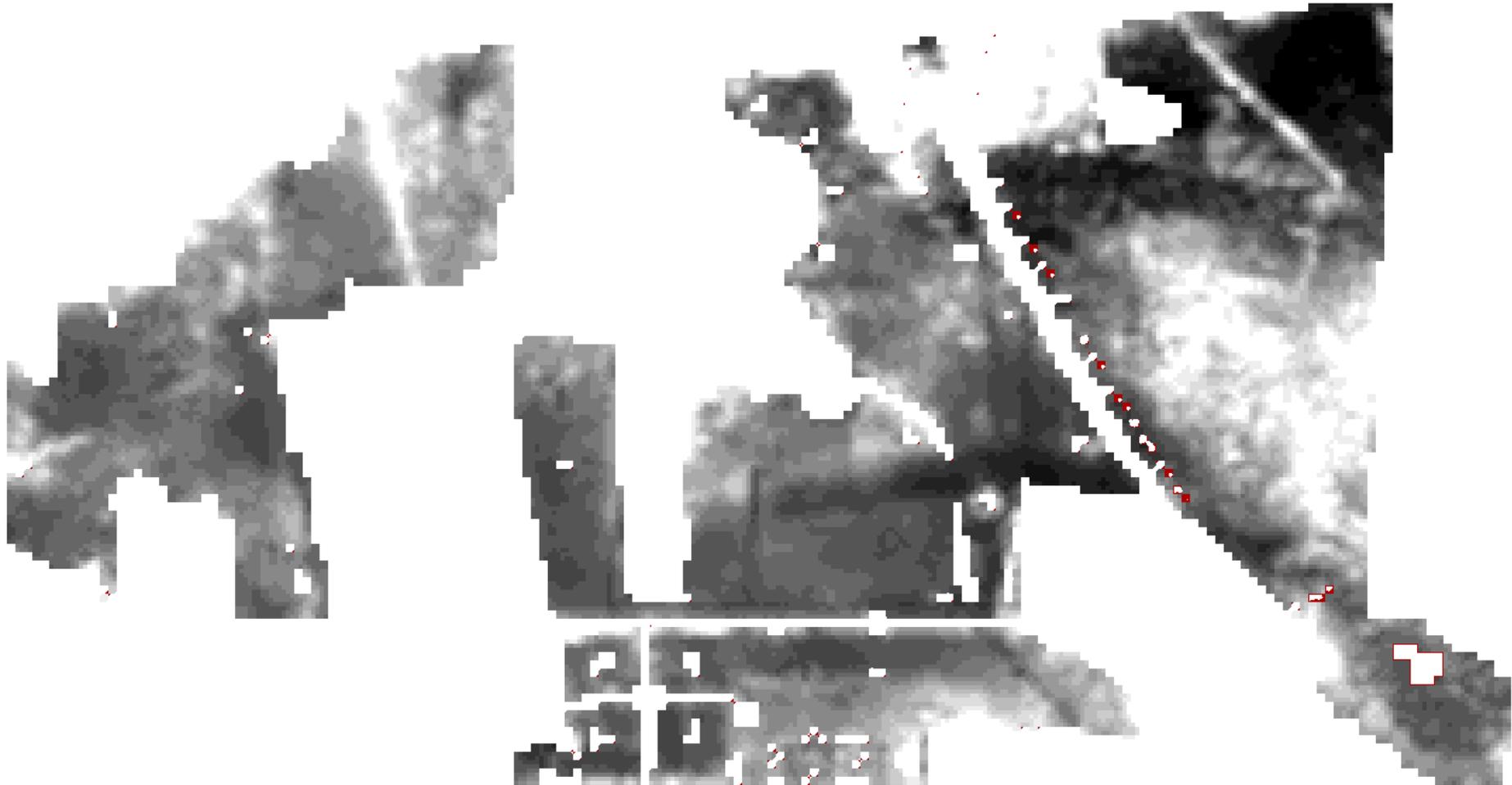


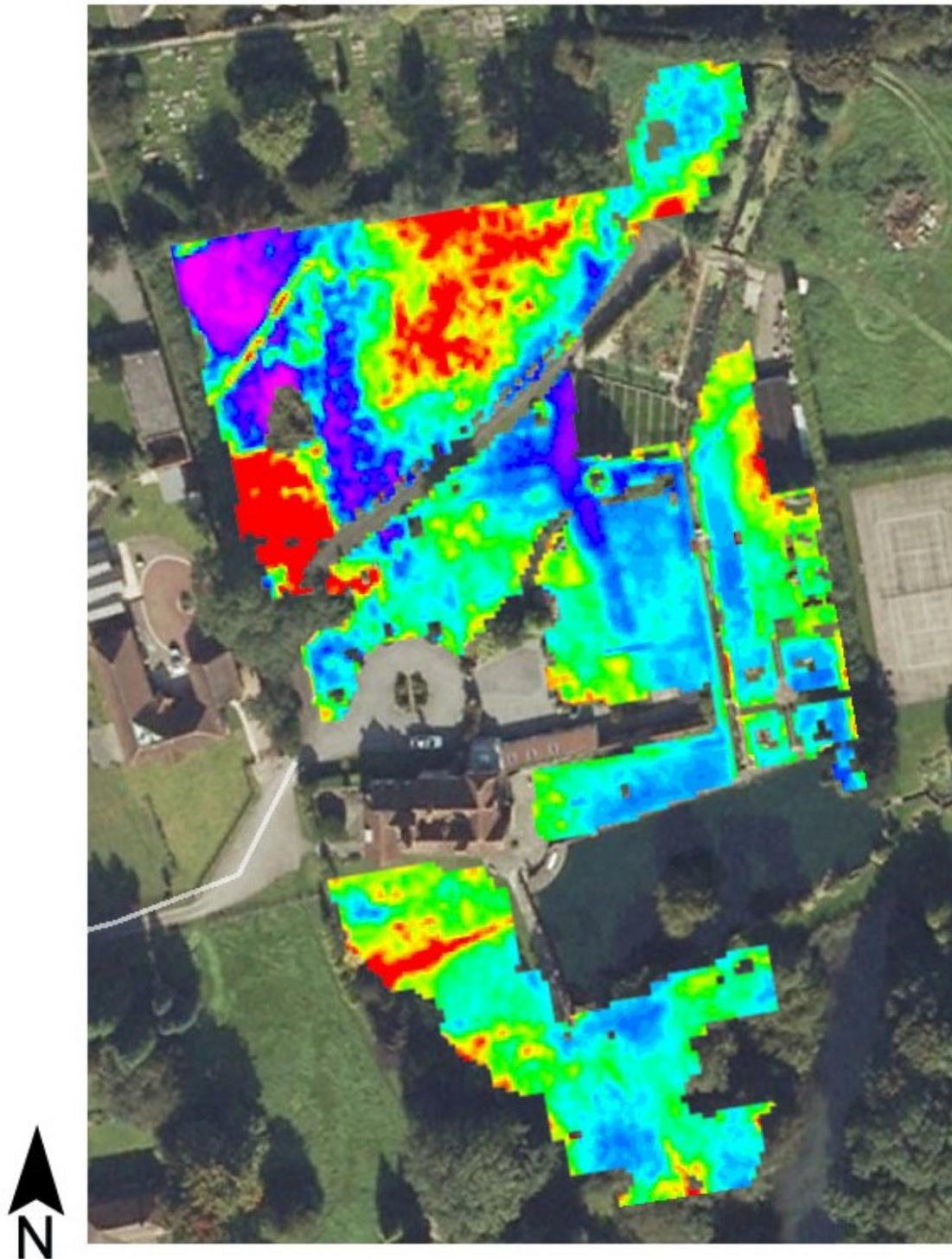
Figure 9. Castle House survey alongside Church Field survey.



Appendix A: Black and White Survey view



Appendix B: Relief Survey View



Appendix C: Survey Google Earth Overlay

Summary of Key Data

Project Documentation	
Name of Site	Castle House
Spatial Coverage	TQ5299159281, TQ5293459089
Administrative Area	Sevenoaks District Council
County	Kent
Geology	Gault Formation - Mudstone. Sedimentary Bedrock No Superficial Geology
Duration	03/08/2016 – 21/08/2016
Weather	Overcast, occasional light showers
Soil Condition	Soft,Damp, some hard dry areas
Land Use	Garden/Paddock
Monument Type	Building
Monument period	Roman Medieval
Scheduled Ancient Monument Number	Scheduled Monument 1005197
Surveyor	West Kent Archaeological Society
Client	
Related Archives	
Copyright	West Kent Archaeological Society

Geophysical Survey	
Survey Type	Earth Resistance
Instrumentation	Geoscan RM85
Area Surveyed	35 grids (1.4 Hectares)
Method of Coverage	Regular Grid
Traverse Separation	1 metre
Reading Interval	1 metre
Sampling Position	.5 metre in both directions
Grid Size	20 metre x 20 metre
Accuracy – Spatial	Grid layout may contains positioning error of 0.5 metre due to vegetation obstructing tapes during grid positioning
Accuracy - Readings	Automatic trigger, positioning by taped guide lines