

Lower Row Roman Villa

Hemington, Somerset

A Report on the Geophysical Survey
by the Bath and Camerton Archaeological Society



BATH &
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ARCHAEOLOGICAL
SOCIETY

Lower Row Roman Villa Hemington, Somerset.

Somerset Scheduled Monument 478,
Somerset Historic Environment Record, HER 23655

Report on the Geophysical Survey by the
Bath and Camerton Archaeological Society.

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Prepared by John Oswin

Summary

Three fields totalling approximately nine hectares in area in the Lower Row area of Hemington, Somerset have been subject to geophysical survey by the Bath and Camerton Archaeological Society between January and May 2005. These fields contain the Lower Row Roman Villa, scheduled monument 478 so permission was gained from English Heritage as well as the landowner prior to the survey. The survey included use of fluxgate gradiometer, twin probe resistance meter, electronic distancing meter and dumpy level. The results have been plotted on a map of the area, individually and combined, with contours, to display the archaeology. The survey has shown the presence of a wing-corridor villa of some 40 metres frontage with ancillary structures and gardens down to the Wheel Brook and a second building with a circular structure attached to it some 120 metres to the south-west. There also seems to be a culvert of Roman origin draining the villa precincts, which was taken off upstream and flowed back into the stream. The survey has also detected two or more field drainage schemes, one of which seems to be of some antiquity as it goes under a field boundary known to exist in 1840. There are also signs of a farmstead on the east side of the site, which had disappeared well before 1840. The report gives full details of the survey, displays the results, and ventures an interpretation.

Preface

This survey was done by members of the Bath and Camerton Archaeology Society (BACAS) as part of the Society's Blacklands project. This is centred on excavations of a Romano-British site on Blacklands Field, Upper Row, approximately 1 km north-east of the site discussed here. BACAS has mounted a vigorous geophysics campaign in fields in the locality known to contain archaeology. For this reason the Society approached English Heritage to gain a licence to survey this site.

The survey was done by a small team of volunteers, so there had to be sufficient interest and delight in the site to keep them coming out in all weathers and seasons. Using the twin-probe resistance meter is hard work physically, but it is responsive and moderately slow, allowing time for banter. This provides a social aspect which encourages team participation and provides an alternative to financial reward. The magnetometer is lighter physical work but is faster and needs more concentration, so the working atmosphere is more serious; more akin to duty than pleasure. Sites for unpaid volunteers have to be chosen which may have magnetic signature but which are likely to be responsive to resistance survey, and Romano-British sites in this area of stone building are ideally suited to this.

The Society has evolved a 'hedge to hedge' survey policy for resistance measurement, but the magnetometer is more limited by the proximity of iron wire and by less tractability in handling incomplete lines. Contour survey has also become standard as it helps to explain drainage features. This leads to a very complete survey. Overlaying both surveys and contours on a map also adds much value. While outsiders may find this approach extreme, it has been shown to give results, and has found sites which would not be detected by a less thorough approach.

The complete survey of all three fields occupied by this site has certainly been beneficial to gaining an understanding of Lower Row Villa and its precincts.

We thank English Heritage for granting a licence to do this survey. We would also like to thank the landowner, Mr Tony Billett of Corston, near Bath, and local farmers Bill Boyce, Gordon Hendy and John Rossiter for their help and interest. John Prescott who identified the site originally has paid visits and provided help. Maps and plots were prepared by Keith Turner and Jude Harris prepared the cover and the copy for final publication. The survey was led by John Oswin (Geophysics team leader) and Jayne Lawes (Director of Excavations). Thanks are due most, of course, to those volunteers who have turned out regularly to do the work in all weathers: Owen Dicker, Margaret Nuth, Les Hayes and Laurie Scott.

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1 Introduction

1.1 Background

The principal area of study of the Bath and Camerton Archaeological Society (BACAS) has been in Blacklands Field, Hemington, Somerset, part of Upper Row Farm. A preliminary geophysics exercise in 1999 had indicated extensive Roman and pre-Roman activity in the field. Excavations started in 2001. A full geophysical survey of the field, using both fluxgate gradiometer and twin-probe resistance was started, and this continues as an exercise within archaeological training at the site.

Since 2002, BACAS members have extended the survey to include fields close to Blacklands where there is known archaeology in order to gain a wider understanding of the locality in Prehistoric, Roman and later times, so that the Blacklands site can be seen in its local archaeological context. An area over 0.5 km long and up to 0.2 km wide has been swept immediately around Upper Row Farm and a massive villa site about 2 km to the East has also been thoroughly surveyed. A number of known sites in the locality remain to be surveyed and these await suitable conditions of access.

The scheduled site of Lower Row Roman Villa is about 1 km south of Blacklands and so merits inclusion in the study. Its owner is a member of BACAS and was happy to see the work done. The scheduled site covers parts of three modern fields (two of these were until recently sub-divided). It is BACAS policy to survey complete territories, so all three fields have been surveyed in their entirety. Such a survey takes a number of weeks to complete, and over this time, the survey team get to know the locality and its local climate very well.

The survey will contribute to the understanding of the ancient landscapes of this area of East Mendip and this in turn leads to a greater understanding nationally.

1.2. Location

Hemington is a parish of very large area, over 1000 ha, in the Eastern Mendips, some 8 km north-west of Frome. It lies in a vale, with a high ridge ringing it except to the east. Hemington village with its parish church lies at the west end of the parish, just under the ridge. The main settlement is now at Faulkland, which occupies the ridge to the north-east. To the south and east of Faulkland, an open landscape is punctuated with farmsteads. The Row area is about 2 km south-east of Faulkland, at the opposite end of the parish from Hemington. The two principal streams of the parish are separated by a low water shed and flow in different directions, but all waters eventually join the River Frome. The Hardington Brook rises near the parish church at Hemington and flows south-east through a narrow defile at Buckland Dinham to join the Mells Stream, then to the River Frome to the north of Frome. The Wheel Brook rises under Highchurch Farm and flows east to join the River Frome directly near Shawford Bridge in Rode parish. Lower Row Roman Villa is situated in a steep - sided valley on the north bank of the Wheel Brook where the brook marks the parish boundary with Laverton, but about 1 km west of the eastern extremity of Hemington parish. Site location is shown in figure 1.1.

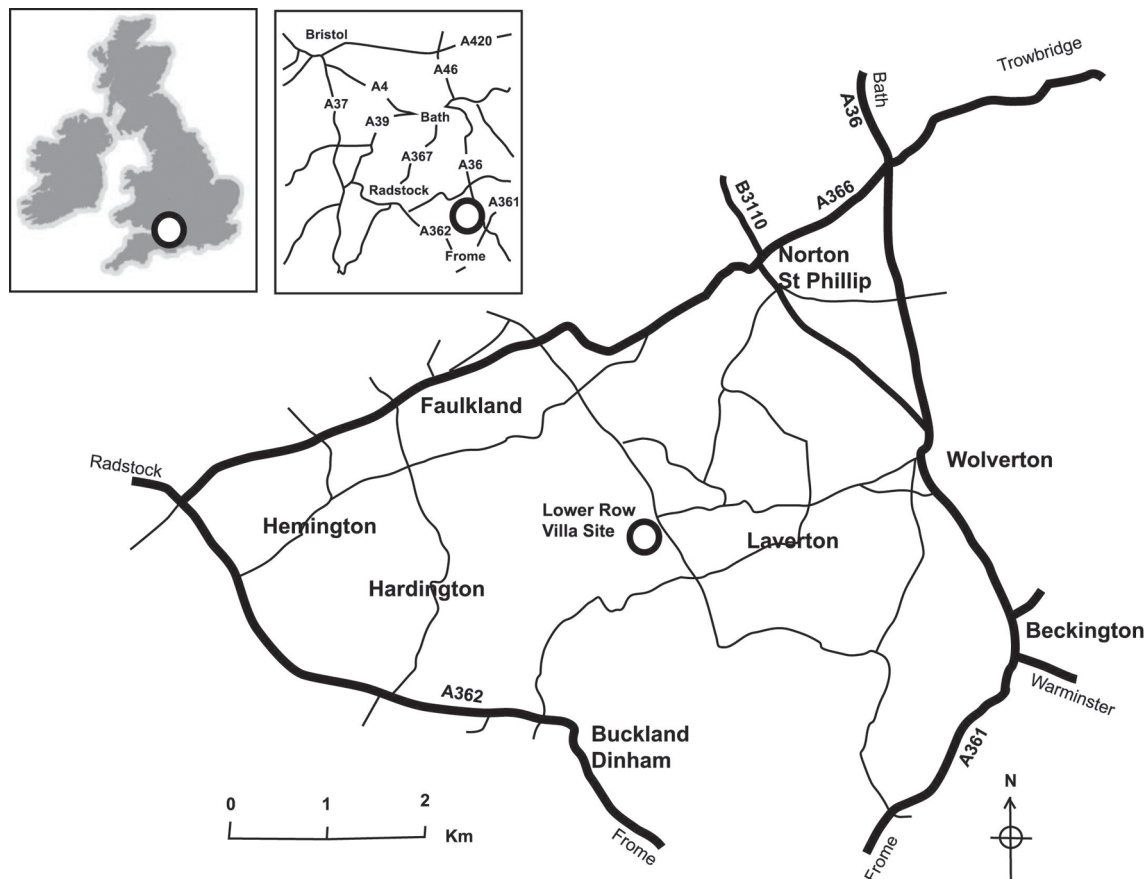


Figure 1.1. Map showing the location of Hemington, and of the Lower Row Roman Villa site within the locality.

The villa site sits in a small re-entrant, on a south facing slope overlooking the Wheel Brook, where the stream enters a narrow defile from a broad valley bottom. The defile runs east-west, with the villa site well sheltered from the prevailing westerly winds, and with a view down the stream towards Bratton Hillfort and Westbury White Horse. The view in other directions is restricted by high ground.

Access to the site is now via a farm track which leaves the lane known as Portway, immediately opposite the western end of Cherry Garden Lane. Of the three fields which the scheduled site occupies, the easternmost, next to Portway, is called Hither Portway, the middle field is called Further Portway, and the westernmost is called Poor Mead. The boundary between Hither and Further Portway has been reset in recent years, and a new ditch runs slightly to the west of an earlier stream course.

The outline of these fields and the scheduled area is shown in figure 1.2. The grid system devised by BACAS to delineate the survey has been superimposed. Note that the grids straddle field boundaries, so one grid square may be represented by two sets of geophysical data, one partially filled grid either side of the hedge. This applies especially to resistance measurement.

Full information for reconstruction of the geophysical plans from the data is given in Appendix A and on the attached CDROM.

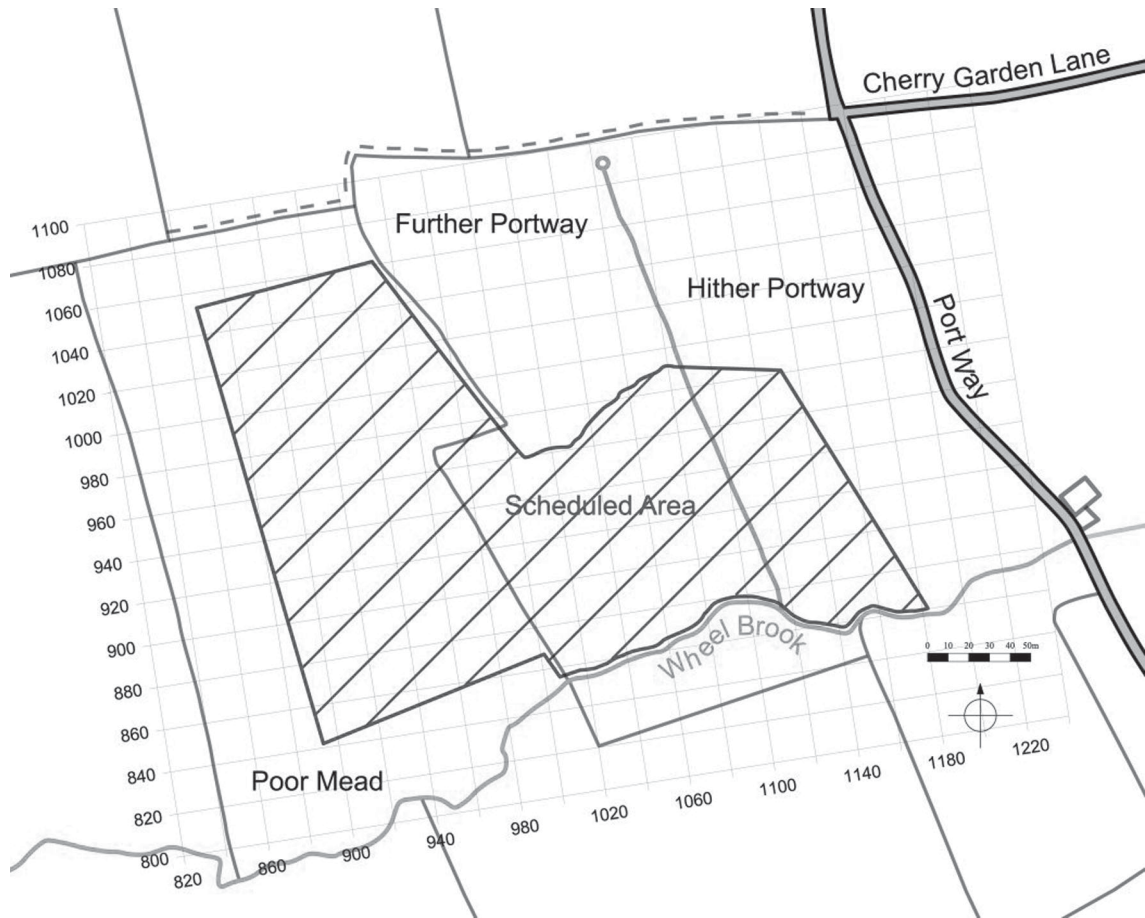


Figure 1.2. Layout of the three fields of the survey, also showing the scheduled area and the BACAS survey grid.

The centre of the grid, point 1000, 1000 is at grid reference ST76255320. The four corners are at points ST76405002 (NE), ST76055324 (NW), ST76135298 (SW) and ST76515010 (SE). The area surveyed amounted to approximately 9 Ha.

1.3. Geology, Soil and Vegetation

Geological data are taken from British Geological Survey, sheet 281, Frome (scale 1:50000). The site lies on Frome Clay deposits sloping down to a small alluvial plane along the Wheel Brook. The Forest Marble deposits end just above the site, and this stone is present on the surface of the field. It is a golden brown colour and very shelly. It lies just below the surface around the locality and can be easily got from the ground. It comes in thin sheets, typically 50 mm thick, and is sufficiently strong for domestic building. Most standing buildings in the neighbourhood are built in this stone and it has been an economical building material used in the locality since at least Roman times. The brown colour suggests a material rich in iron, so magnetometer surveys should be successful here. The use of stone suggests that resistance survey will also be successful.

The Hardington Fault runs across the steep slope some 500 m to the north of the site.

The topsoil of the fields is a brown clay. Conditions were generally dry during the survey so the surface was usually firm, but it could rapidly degenerate to wet and slippery in rain, even on steep slopes. The lowest levels of the fields near the Wheel Brook are alluvial. Springs at the top of the fields form streams, such as that separating Hither and Further Portway, down to the brook. The soils of this vale are generally considered to be low grade for arable, although the alluvial parts of the field were said to produce a good crop. The area is best suited to pastoral farming.

Hither Portway and Further Portway were last harvested in 2004. Residual wheat in the field had germinated, and by the end of the survey was growing vigorously, causing problems in reading measurement points. Poor Mead has not been cultivated for a few years, perhaps five. It lives up to its name; the surface cover is rough grass, with other rough vegetation gaining a foothold, and the principal use of the field is now for exercising horses.

The stream level was very low, except after rain, with little likelihood of flooding of the lower parts of the fields. However, some of these parts retained water more than other sections only a few metres away. Water extraction for urban use has lowered the level of water in the brook over the last 50 years, according to local report.

1.4. Scope

This report details a geophysical survey only. Early maps and aerial photographs may have been observed in conjunction with the work, but not as part of a larger systematic landscape study.

The site was originally located from surface finds, but as the fields were not subject to recent ploughing, there were very few surface finds. These added little diagnostic information to the study.

2 Method

The survey was conducted using a Geoscan FM36 gradiometer and a TR/CIA twin-probe resistance meter. Spot heights were recorded relative to a temporary benchmark at the poles marking the corners of the grids using a dumpy level and staff. The temporary benchmark was tied to a measured spot height at Upper Row Farm. Late in the survey, an electronic distancing meter (EDM) became available, and this was used to provide some extra points close to the villa and to establish height of the temporary bench mark relative to an Ordnance Survey bench-mark at ST76055410 and this was used to provide absolute heights. A bench-mark very close by had unfortunately been destroyed. The spot heights were used to generate a contour plan of the site. Contours were placed at 1m height intervals. With a relatively large separation of points (20 m), the plot could not show fine detail but was good for showing directions of drainage. The survey close to the villa used 0.5 m contours.

Grids were 20 metres square. Strings were laid (grid) north-south along east-west lines at one metre intervals. The strings were marked at half-metre intervals, and these were used for triggering the measurements. It is the convention of BACAS to lay the first string one metre east of the western edge of a grid, and start the first point of each line one mark (half metre) north of the baseline. Grids were measured in a zigzag pattern from west eastwards.

A central point was chosen and given an arbitrary grid reference of 1000, 1000. It was taken from a post in the northern hedge of Further Portway and carried to the maximum extent of a 100m tape in the direction of the corner of the hedgeline dividing Further Portway and Poor Mead, where it has kinked eastwards and then turned north again. The post in the north hedge was labelled 1000, 1100. This gave a line of grid north at bearing 355° to magnetic north. A right angle was constructed to form an east-west line. All subsequent grids were derived from these lines.

The survey began in Further Portway adjacent to 1000, 1000 (just outside the scheduled area) and moved north to the top of the field. It then returned to south of the 1000 N line and continued south to the brook. The grid was then moved to Poor Mead, where the survey began in the line just south of 1000N and continued to the top of the field before returning to the line and continuing thence south to the brook. The survey then moved to Hither Portway. Gridding out began from the 1000 N line but the whole field was gridded in one go and the survey began from the brook and moved northward to the top hedge.

The survey data were downloaded to a laptop computer and fed into INSITE version 3.0. Grid numbers of each field with each instrument are given in Appendix A. Note that a grid bisected by a hedge could appear as a separate grid number in each field. In Further Portway, gradiometer was Method 0, resistance Method 1. In Poor Mead and Hither Portway, resistance was Method 0, gradiometer Method 1. This was set by the order in which the instruments were first downloaded in each field and could not be standardised after the start of each site.

The resistance meter used a standard 0.5 metre separation of probes on its frame. The remote probes were adjusted to give a reading of 13.0 ohms at the start of a grid,

where it was anticipated that no features would be present. A higher value could be used if there were features present. When the remote probes were moved they were set to give the same resistance value at their new site as they had at their previous site. The meter was set to average values over 0.5 second (rural setting).

The resistance meter counted lines from 0 to 19 and points along any line from 0 to 39. Although the measurements were taken in zigzag fashion, they were sorted automatically into parallel data, with 0 at the south end of each line, 39 at the north end. Data were downloaded via TR/CIA software to the computer but then converted using special BACAS software to match the input requirements of INSITE. This comprises a single-line data file of 800 points, each line in turn, points 0 to 39 in order. The BACAS software inserted a letter 'c' before the data file number, but this is lost when INSITE accepts the data. Because all resistance files were stored in a single common file prior to conversion, their numbers for each site do not overlap. In Further Portway, they numbered between 1 and 100, in Poor Mead between 101 and 300 and in Hither Portway between 301 and 400.

The gradiometer was used in its most sensitive mode, 0.1 nT, as most signals detected here were less than 10 nT, and some patterns appeared from swings of only 1 nT. No averaging was applied to data collection. It was calibrated at the start of each session and as often as necessary during sessions. It did not maintain calibration reliably and this could lead to 'striping' effects and value drift across a grid. The software could remove these effects providing they were uniform but if effects varied within a grid, this would appear visually. In exceptionally bad cases, grids were repeated after recalibration. In a number of grids, some residual striping and drift was evident in the final display. As the north-south fluxgate was most prone to calibration failure, the magnetometer was always carried across the north-south line, data head to the west.

The gradiometer counted lines from 1 to 20 and points on each line from 1 to 40. Each line started at point 1 whether heading north or south. Grids were surveyed in zigzag fashion and the data were also recorded in zigzag fashion. The files downloaded from the gradiometer each comprised a single line of data, six lines of grid information followed by 800 points, each line with points 1 to 40 whether northbound or southbound. The two data sets are therefore not interchangeable in format and each must be processed according to its recording method.

The gradiometer and resistance raw data files are provided on an attached disc. If they are used to reconstruct the evidence, it is important to take careful note of the details provided above.

The survey was conducted through late winter and spring, from mid January to May, 2005. This was a year of well-below average rainfall for that period, so the ground rarely became saturated and satisfactory resistance results with sufficient contrast were obtained. However, the relatively low signal range with both instruments required that high levels of contrast were applied to the plots. High contrast could amplify noise as well as signal, but possible archaeological features were identified by their coherent, identifiable patterns. The author takes responsibility in interpretation of the data: what should be considered as indicative of archaeological features and what should be rejected as noise.

3 Results

3.1. General

The complete results required a screen for each field for each method, giving six in total. These are shown in appendix A. As the field boundaries were a later imposition, a display of six sets would not provide a good picture of the work. BACAS uses the convention of taking the pictorial data and assembling that from each instrument onto a single map and this map is overlaid with a map of Ordnance Survey style and with contours added. It is not sensible to look at the data obtained in steeply sloping fields without reference to the relief. Overlays can also be prepared with both instruments' output on the same map. This is the most revealing, but requires the use of colour to differentiate between methods. BACAS adopts the convention of using red for resistance, green for gradiometer. A further overlay can then be prepared showing the features interpreted from the survey, without the 'noise'. Extra plots can also be prepared of areas of especial interest, such as the villa building itself.

Note that the data are obtained in a thoroughly objective fashion, but its interpretation is subjective, depending on the adjustments applied to the data for best visual effects and also on the experience and prejudices of the interpreter.

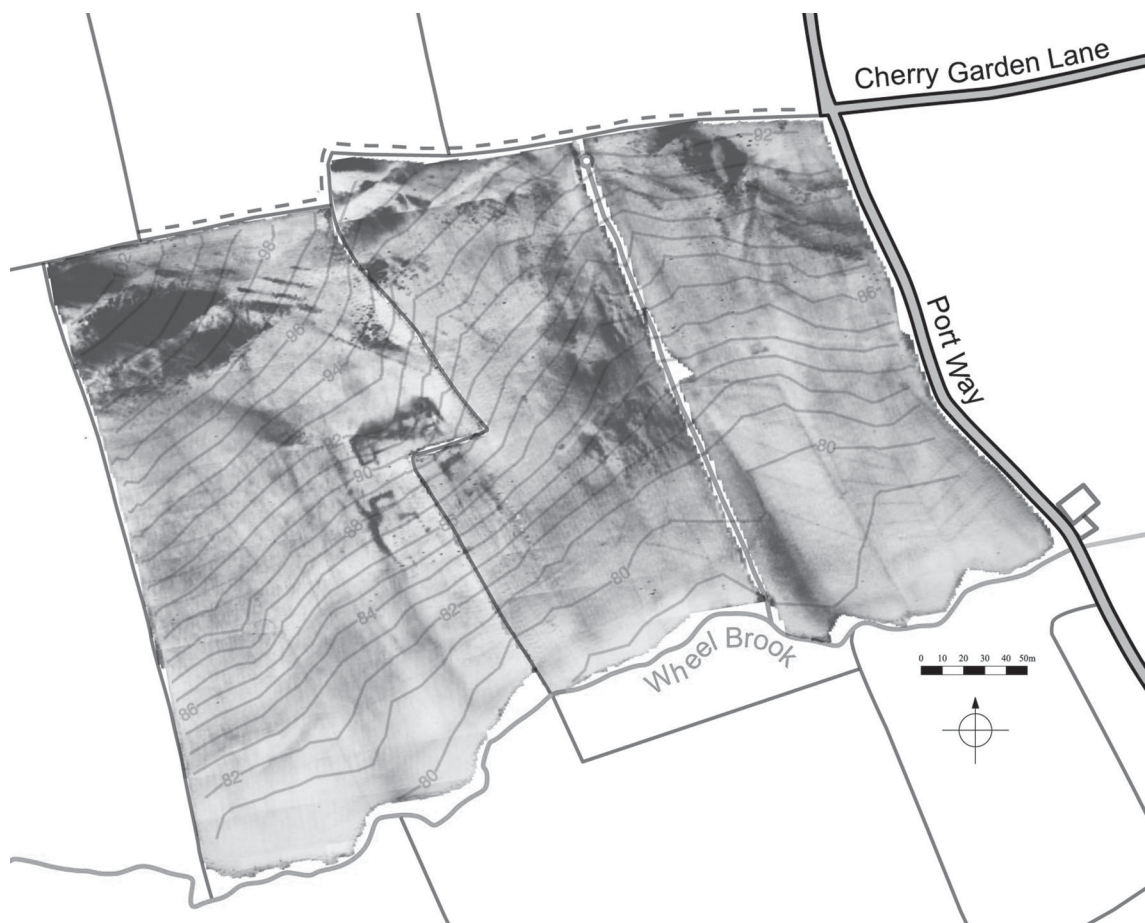


Figure 3.1. Resistance plot covering all three fields, overlaid with contour data.

Shown above is the resistance meter data, complete with contours and field outlines. Next shown is the greyscale plot of the gradiometer data with contour data overlain.



Figure 3.2. Gradiometer plot of all three fields, with contour data overlain.

It can be seen that the gradiometer provides most information in the vicinity of the villa precincts (as shown clearly in figure 3.2) but the information provided is distinctly different and complementary to that provided by resistance. Note that the outline of the resistance plot provides the overall shape of the survey and indicates by gaps between fields where the present boundaries are. Field boundaries have changed, in some cases in very recent years, and maps are no longer accurate in this respect.

3.2. Detail of Resistance Survey

Starting, 'top left' in Poor Mead, there were a number of areas of high resistance, but these gave the impression of response to geological features. For 20 to 30 metres into the field from the western boundary were a series of lines reaching a terminal line representing a field drain system. This was of some interest as it appears to go under the western boundary of the field, a boundary shown on the 1840 tithe map.

About 20 metres south of the field drains, around grid point 880, 900 was an apparent building shown by a circular feature (on its eastern end) and a number of small rectangular rooms. The traces are thin and faint, even compared to local geological features, but they formed a regular pattern suggesting a man-made structure. It was assumed from their

faintness that they are buried deeply, towards the limit of detection. The contours indicate a slight mound at this point. This building will be referred to in this text as the 'Rotunda'. A single line, assumed to be a drain, led from the circular feature and ran down to the Wheel Brook. Detail of the Rotunda is shown in figure 3.3 below.



Figure 3.3 Detail of the Rotunda, from resistance plot.

Just downstream from the point where the drain from the 'Rotunda' entered the Wheel Brook, a broader line left the brook, turning sharply to the north-east after 10 metres and ran across the field. This appeared to be a culvert. There were slight signs also of line running down to join the brook at this point. Perhaps the start point of the culvert was chosen as an earlier stream line.

The principal feature seen in the field was the villa building, taking the form of a wing-corridor structure, apparently with large rooms, terminating a corridor along the south aspect. Behind the corridor, a series of rooms can be seen. A linear feature which runs east-west across the east wing, the corridor and the north-west rooms may represent a later structure. Detail of the villa range taken from the resistance plot is shown below in figure 3.4.



Figure 3.4 Detail of the villa range, from the resistance plot.

20 metres south of the west wing, a rectangular feature can be seen (possibly a building now incomplete, or possibly a pond or tank) as a curved line, apparently a water course, 10 metres west of the villa deviated to touch the rectangular structure before continuing down the hill. The water course terminated at the line of the culvert mentioned above. Note that this rectangular structure was some 3 metres lower down the slope from the villa wing.

Apart from geological signals and the line of an old field boundary, resistance measurement in Further Portway showed only a few details. There was a rectangular structure below the east wing of the villa, rather larger than its western neighbour and a line, probably a drain, continued down to the line of the culvert. This is most likely a building,. The drain line has been disturbed and spread by ploughing. Stone spreads were also visible below the rectangular structure.

Where Further Portway protrudes to the north of Poor Mead, a line of high resistance runs diagonally across the corner of the field, possibly indicating an earlier (pre 1840) field boundary.

Note that both Poor Mead and Further Portway showed faint signs of modern field drainage in their southern portions. These drains ignored the culvert and continued to the modern stream.

Hither Portway showed strong signs of modern drainage across its southern, flat portion. An old field boundary ran from the stream northwards one third of the distance across the field from the west. It then turned west to run into a small copse half way up the field boundary. The copse was on the line of a stream descending from the northern hedgeline to the brook. The lower portion of this stream was seen in resistance as a broad feature

going to the stream and on the ground as a low bank. The modern boundary between the two fields below the copse was a new-cut ditch some 10 metres west of the old stream line.

The eastern field boundary of Hither Portway now followed the lane called Portway. Where the modern hedgeline deviated north from its lower north-eastern course, a strong line continued north-east a short distance before turning abruptly through a right angle to the south-west and then stopping after 10 metres. Within the angle of the boundary lay a number of features, curved and rectangular, which seem to represent a farmstead. At the right angle, a line continued faintly to the north-east to meet the present field boundary. Study of the tithe map showed that the field boundary followed to the right angle and back to the north-east, so there is a small portion of modern field here. The Tithe map showed no sign of the farmstead, so it was assumed to be earlier, possibly mediaeval. Just to the north of the right angle, signs of a former field boundary can be seen. This field boundary remained until recently and is visible as a strong lynchet.

In the northern portion of Hither Portway were three discrete, isolated rectangular patterns, which may represent buildings, but these were not sufficiently distinguishable from geological signal to be treated with certainty.

Both Hither Portway and Poor Mead showed a number of lines of high resistance in parallel pairs. However, these lines were discontinuous so they are unlikely to represent roadways.

3.3. Detail of gradiometer survey

The gradiometer survey was slightly less extensive than the resistance survey as any iron structures in the fences and hedges would obliterate signals, and the instrument is less robust in its operation than the resistance meter. The same number of complete grids was measured, but partial grids were only measured if it was believed there were likely to be significant features. Some lines on the plot represent irregularities in the calibration of the instrument, which was prone to instability.

Starting again in Poor Mead, a large triangular feature around 980, 980 appeared to be an enclosure with features underlying the main villa building. Some of the marks in this enclosure related to the villa building, but others were clearly unrelated to that building and must predate it. A small triangular area is cut off at the northern end, and there appear to be entrances to east and west just south of the northern enclosure. The northern enclosure contained a rectangular structure, possibly a building.

A pair of parallel lines headed south-west from the villa precinct towards the 'Rotunda'. These may represent side ditches of a pathway between the two structures.

The watercourse seen by resistance could be seen again passing just west of the villa, and to the east of this watercourse were a number of features disappearing into the hedgeline which seemed to represent courtyards and garden terraces. These terminated in the south at the line of the culvert rather than at the Wheel Brook.

Gradiometer results in Further Portway showed a continuation of the garden features beyond the hedge. These were terminated to the east by the line of the drain seen in the resistance plot, although two lines continued 30 metres east to a strong ditch line descending across the whole height of the field, as far as the culvert. A further line from the north-west joined this ditch line mid field and headed to the hedge, but it was not detected in Poor Mead. There were no features further east.

Hither Portway showed very little gradiometer activity, other than a few disjointed lines which might be boundaries, the line of the old stream, very faintly visible, and a possible rectangular building in the vicinity of the farmstead.

4 Interpretation

The author takes full responsibility for the interpretation provided here.

In order to see the results sufficiently well to interpret the results, they must not only be displayed for all three fields simultaneously, but it is also important to have the resistance and gradiometer results overlaid so that relative positions of all features can be observed. This also means that contours should be overlaid so that relief and drainage can be understood. This requires the use of coloured illustrations.

BACAS adopts a convention of using red for resistance plots, green for gradiometer plots. This is shown below in figure 4.1.

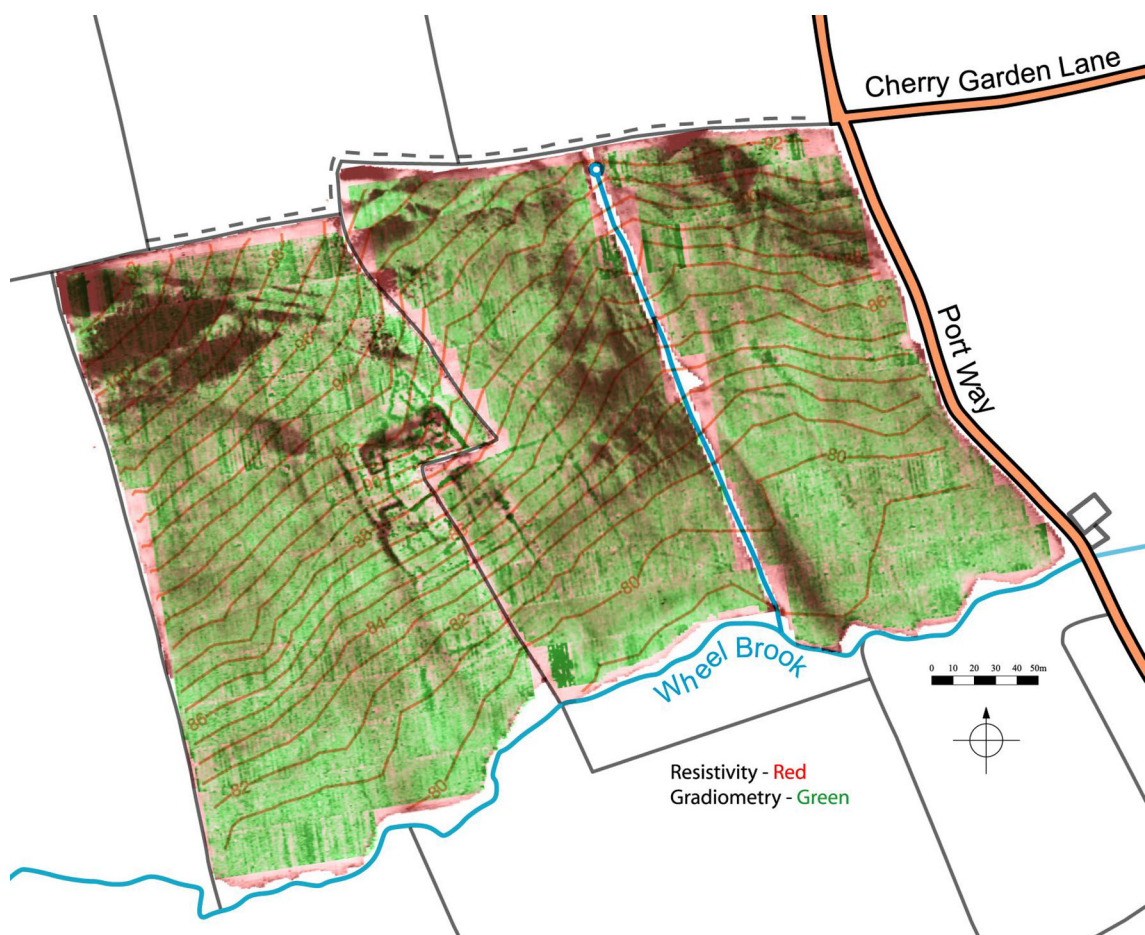


Figure 4.1. Composite map of gradiometer and resistance surveys, overlaid with contour data.

A map was then produced which showed the features believed to be of archaeological interest and removing those due to geology or false calibration. This is shown below in figure 4.2. Again, it was found best to use colour to differentiate between the features found with each instrument. Note that this map is in itself an interpretation, in that the author has selected those features considered to be of archaeological interest, and this selection was based on previous experience.

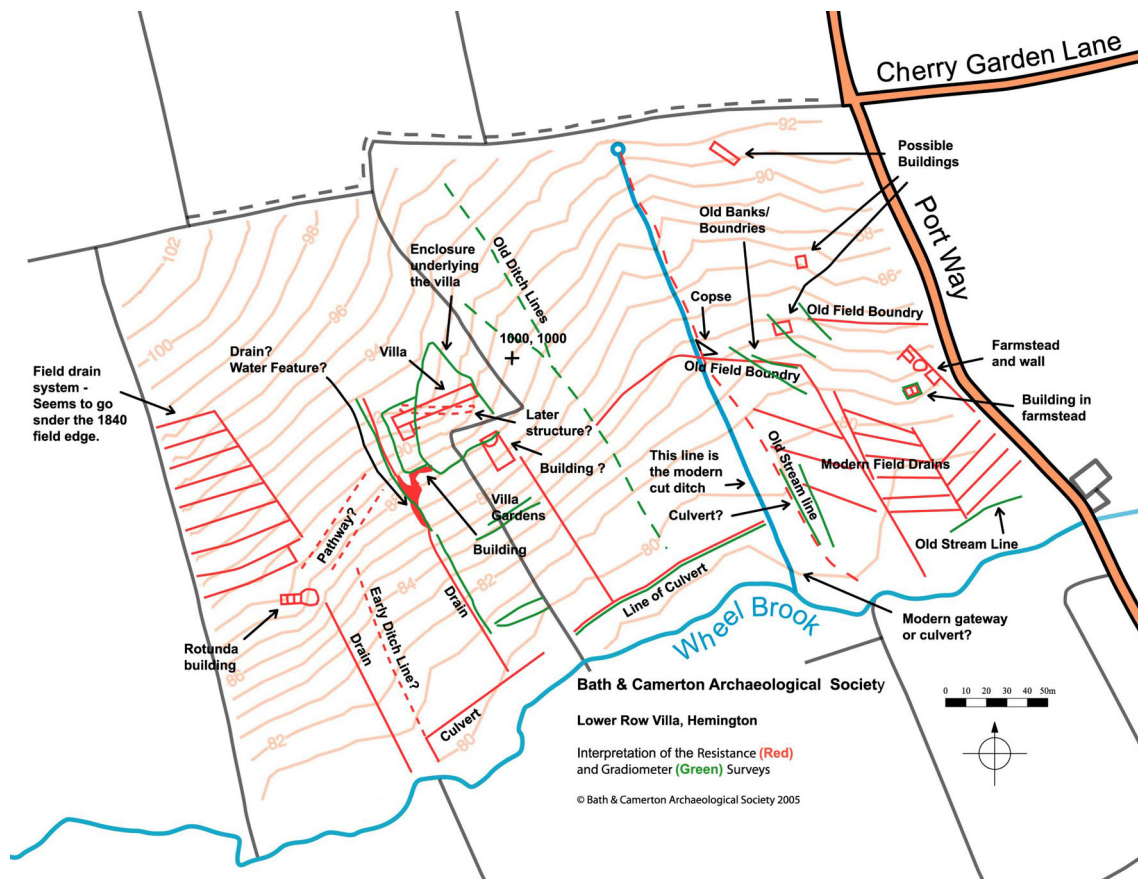


Figure 4.2. Map of features interpreted from the output of each instrument, overlain, and with contours.

The principal feature of the site was the villa building. It can be seen clearly, and individual rooms can be distinguished. It takes the form of a wing-corridor villa with a frontage facing just east of south, looking down directly towards the Wheel Brook. The eastern wing was not a symmetrical reflection of the western wing room, which is clearly visible, but this may be due to later disturbance. The corridor ran along the south front between the wings, and a number of rooms were visible (see figure 3.4 for greater clarity) to the north of the corridor. There was a protrusion at the east end of the north wall, but its purpose was not obvious.

There appeared to be a curved double band of masonry running east-west through the villa structure. It was not obvious whether this represented a later phase of building, after the villa had been demolished, or whether it was just demolition rubble.

The villa overlay an earlier feature, detected only by the gradiometer. This appeared to be a ditched enclosure, curved on the west, rising to a point at its north tip. There were signs of structure, possibly beam slots at the northern tip of the enclosure. However, this may represent an earlier and smaller triangular enclosure, to which the larger was later appended. The larger enclosure had entrances either side just next to the division of the smaller enclosure. Other gradiometer signals may relate to the villa structure itself. The villa appeared to have been built directly over the enclosure ditch, indicating that the

enclosure had ceased being used before the villa was constructed, but that may have been only just before it was built.

To the south of each wing but separate from the villa building were rectangular features, but these have apparently suffered some plough damage. The western feature has an apparent water course which passed close to the villa but diverted to touch the rectangular feature. The eastern structure was amongst ditches and appears to have a drain running down from it, but this may be plough pull. Note that the gradient is steep here, so these features may have been below the sight line of the villa. They appeared to represent some form of water storage or control. The western structure looked too simple to be any form of bath structure, but the eastern one seemed to have a niche at its northern end and may be a small bath house. They seemed to be linked with lines detected mainly by the gradiometer, and these are taken to be villa gardens and terraces, possibly having just a decorative function.

The terraces did not continue to the Wheel Brook, but terminated at a line just where the level valley bottom is reached. This line was seen to leave the Wheel Brook upstream and then turn through a sharp angle before running east to terminate the villa grounds. It was taken to be a culvert or deliberately cut channel intended to drain the villa precincts. The culvert seems to have left the Wheel Brook along the line of an earlier watercourse and then turned east after a few metres.

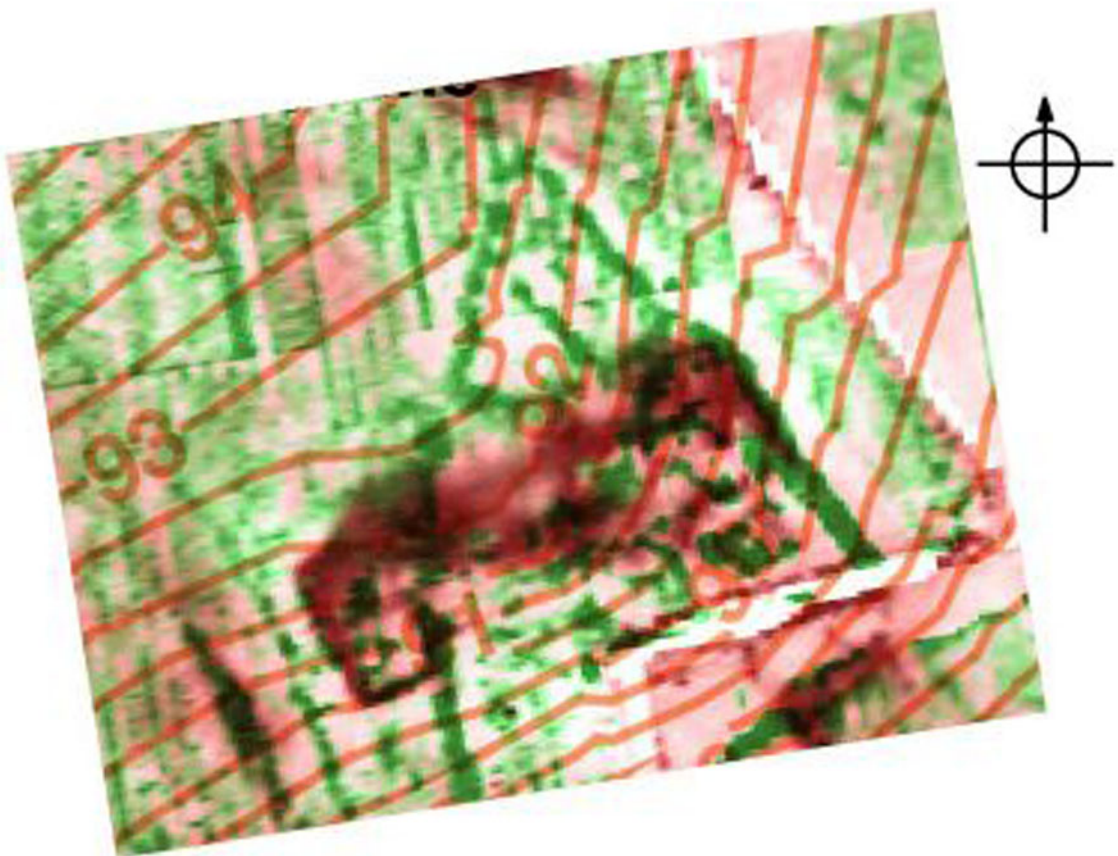


Figure 4.3, Villa building and enclosure situated on the mound, shown with detailed contour data. The apparent mound was actually more of a plateau.

A more recent hedgeline bisected the villa gardens. Its curvature suggested mediaeval date. It appeared to have been started at the Wheel Brook as it runs up directly to the villa and then diverts 20 metres east before turning through a second sharp angle to resume its previous direction north up the hill. The hedge-and-ditch team obviously encountered solid masonry and had to divert around it, but it was not clear whether the hedgers were aiming at any visible remains. The villa site sat on a very evident mound (see figure 4.3) and this mound may have been their aiming point without any awareness of what the mound contained.

From figure 4.3, it is evident that the mound is centred on both villa and enclosure. The north-west ditch of the enclosure turns above the north-west entrance (which is on a small plateau) to run along the contours to its apex, and then the north-east ditch runs steeply downhill. The way that the villa straddles the enclosure can also be seen clearly. The mound seems to be most closely associated with the layout of the enclosure, so it is likely that it existed before the villa building, and is not purely a pile of demolition rubble.

Two ditches running south from the top of Further Portway amalgamated and then ran just east of the villa, linking into the garden ditch system. It also terminated at the culvert, so was assumed to be part of the villa precinct boundary.

The villa building was expected. The second building, referred to as the 'Rotunda' was not. It was only faintly visible on the resistance plot (see figures 3.1 and 3.3) but its pattern was distinct. The faintness of the signals suggest that it is buried deeply.

The signals indicated a circular structure about 8 metres diameter, with a number of small rectangular areas, covering a total of about 6 by 4 metres to the west. A line led off the circular structure and heads downhill to join the Wheel Brook. This was taken to be a drain. The gradiometer showed a signal just to the north of the rotunda but with no structure to identify it.

The rotunda gave no clue in itself of its date. Its regularity suggests Roman origin, but this was masked by the faintness of the image. However, the gradiometer showed a pair of parallel lines, assumed to be ditches heading straight to the villa. This was taken to be a routeway and, as it links the sites, the rotunda is assumed to be contemporary with the villa.

There was no clue as to the purpose of the building from its shape. It could be residential, ceremonial or agricultural. As its drain emptied into the Wheel Brook just above the point where the culvert described above leaves it, an agricultural use is less likely, as this would introduce foul water to the villa precincts.

Its most likely functions are either baths or a temple. It would require trial excavation even to confirm its real existence. Substantial excavation would be needed to identify its use.

The author therefore considered this villa complex to be entirely residential, with any associated farming activities centred elsewhere.

There are signs of other buildings elsewhere, but they are small and ill-defined. They occur in the northern part of Hither Portway, outside the scheduled area. These structures could be of any date, including mediaeval or post-mediaeval, but they were not shown on the tithe map and so must have vanished by 1840.

The eastern hedge of Hither Portway changed direction from north-west to north part way up its length. The resistance survey indicated masonry below the hedgeline lower down, and this continued north-west for a short distance after the hedge changed direction. The tithe map showed this, and also showed a line striking north-east, back to the lane, leaving a wide triangle beside the lane. The resistance survey indicated, faintly, the same line. The portion of field inside the present hedge was thus a relatively recent edition.

However, the resistance survey showed a sharp corner with the line continuing some 10 metres further south-west beyond the junction with the line heading north-west. Within the area formed by this corner are a number of features, including a sub-circular enclosure backing on to the line, with a rectangular feature, possibly a house to the south of it. These were faint signals. There was a clear resistance signal of a small structure, about 3 metres square and sub-divided by a north-south line. A structure nearby 3m by 2m, subdivided by an east-west line, was evident on the gradiometer output. This complex of features was taken to be a farmstead, although its lack of orderliness suggests mediaeval, rather than Roman, date. It had disappeared by the time of the tithe map.

The resistance plot also shows complexes of field drains. These were all assumed to be modern but not necessarily recent, and deserved some attention. The broad dark line heading to the stream from the small, unsurveyed triangle between Hither and Further Portway (a copse) is taken to be a stream which had become disused and had been filled in. It was visible on the ground as a low bank. Water may have been channelled around the other two sides of the enclosed field to reach the Wheel Brook downstream and this modified water route demarcated the boundary of the scheduled area.

Drainage lines ran into this boundary ditch. To the east of this boundary, a fine herringbone drainage system can be seen; this was modern. There were faint signs of drainage systems in the lower reaches of Further Portway and these ignored the culvert, going straight to the Wheel Brook, and so were taken to be modern.

The field drain system in the north-west of Poor Mead was of some interest. There were no signs of western termination of the ditch lines. Given the BACAS technique of resistance survey right up to the hedgeline, this suggested that the drain lines started further west in Beggars Bush (the field next west). The hill slope continued up into Beggars Bush but eased. The southern terminus of this drain system is about 20 metres north of the Rotunda. The field drained seems no longer to exist in any demarcated fashion. Given that the present boundary between Poor Mead and Beggars Bush was shown on the tithe map, the field and its drains must have been long forgotten by 1840. This would then be a very early example of field improvement. A similar example was found at Upper Row in December 2004.

5 Comment

The principal find of the survey was a Roman villa complex, comprising a house of the wing-corridor type, some 40 metres by 20 metres, outbuildings and courtyards sloping down to the stream and another building with a circular feature, linked to the villa, some 120 metres to the south west. The location and ground plans of these buildings have been identified. The site had water supply and drainage engineered to its requirements. The siting of the villa was chosen to give it shelter from the prevailing weather. There were no signs of an approach road.

The villa was built in an isolated place. There was no sign of any associated farm buildings. A possible farmstead was located well to the east and there were other isolated buildings nearby, but these cannot be linked to the villa and are more likely to be of mediaeval origin. They had disappeared by 1840. All of these farm features were outside the scheduled area.

This survey adds to the database of sites covered in the vicinity of Upper Row Farm as part of its Blacklands project. From this work we now have the ground plan of another Roman building and can compare it with others known nearby to help to understand the landscape history of this region of Hemington Parish. This means that the Blacklands project can be much more than just the excavation of a small villa. It can put that villa into its contemporary local context and also aids BACAS' understanding of the local Roman and mediaeval landscape. Details of other local sites surveyed are given in Appendix C.

English Heritage may consider that there is benefit in evaluation excavations on the Lower Row site. These could give a dating sequence for the villa site, through early enclosure, then extended enclosure to main building and to a possible later phase. Careful placement of such trial excavations would be needed to maximise the information, but this can be achieved with good geophysics. There would also be benefit in evaluation excavations at the site of the rotunda to establish its date and function firmly.

The resistance survey also gave evidence of more recent agricultural drainage, including a drain system of apparently some antiquity. It might be beneficial to check that the drainage system did indeed go west into Beggar's Bush, but that field is so far from the road and only accessible by off – road vehicle that logistics problems outweigh the benefits of such an exercise. Any exercise to find features in Beggar's Bush related to the villa would also be difficult logistically.

The land is clay and the gradients steep apart from in the valley bottom. It is best suited to pastoral farming and in all probability it was at the time the villa was occupied.

Two of the fields have not been tended for a year and in May 2005 were showing vigorous growth of a residual grain crop and of weeds. The third field, Poor Mead, has not been tended for about five years, it is believed, and is covered by very poor vegetation, more akin to moorland. BACAS will discuss with the landowner the best ways of maintaining this land in a manner which is not detrimental to the buried archaeology, but which maintains the land for future agricultural use.

English Heritage may wish to review the bounds of the scheduled area in light of the survey results. Hither Portway could be removed from the schedule, as could the eastern half of Further Portway. Some land in Poor Mead, in the north and the west, could be removed from schedule, although English Heritage may wish to preserve all the archaeology in this field. Figure 5.1 shows the current scheduled area but also indicates the areas of greatest archaeological interest.

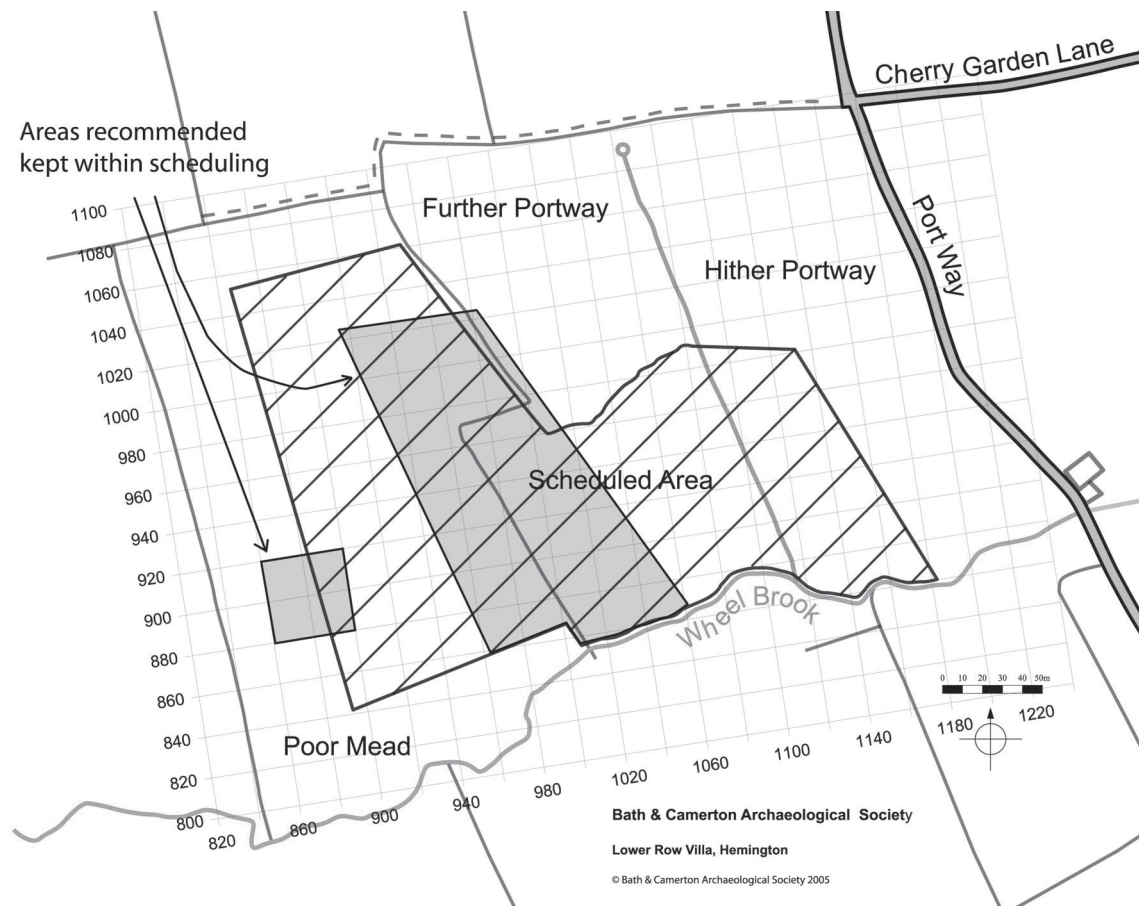


Figure 5.1. Comparison of current scheduled area and areas found to be of high archaeological importance.

The survey was very thorough, from hedge to hedge, using both gradiometer and resistance (twin probe) meter. Much information, particularly on drainage, would have been lost if the survey had stopped short of the edges, at the nearest convenient grid edge. The resistance meter provided most detail, about 70%, but the gradiometer data were entirely complementary. Providing a contour plan provided significant extra information, as it could explain drainage patterns.

BACAS commends this thorough survey technique to English Heritage.

Appendix A Data Reconstruction

A CDROM has been assembled with the data generated from this survey, for the benefit of English Heritage. It contains the individual data files with sufficient information to reconstruct the survey, with the help of the information given in Chapter 2, Method.

INSITE software has been used to display the data, and copies of the INSITE folder are included on the disc. This is available either zipped (lrfm.zip) or in the folder labelled 'INSITE'. Within the file are five sites, S0 to S4. These are, in order, Further Portway, Poor Mead, Villa, Rotunda, and Hither Portway. Note that Villa and Rotunda are just subsets of Poor Mead, and contain no extra information.

The data sets from each site, each method, contain the raw instrument data and the figures A1.1 to A1.6 below give the placement of each grid and show the output. The raw data, particularly the gradiometer, may need processing (such as de – striping) before it can display any useful information.

All of these files are .dat. Files and take the form of a single string of numbers. In the case of the gradiometer, the first 6 are grid information, the remaining 800 are readings. The resistance data have been converted to be compatible with the gradiometer data. This comprises just the 800 data points. The first six grid information points have to be provided by other means, but that will be evident below. The necessary data are grid dimensions, 20 by 20, line separation, 1, point separation 0.5, parallel sorted data and resist-twin method.

In the case of the gradiometer, grids are numbered 1 – 100 for all sites. The dat files for resistance are all preceded by 'c'. They number in the range 1 – 100 for Further Portway (S0), 101 – 300 for Poor Mead (S1) and 301 – 400 for Hither Portway (S4).

For all files the first 40 points are the first line, the next 40 the second line, and so on. In the case of the gradiometer, the data are sorted 'zig-zag', the first line heading north, the second south. In the case of the resistance meter, the data are sorted 'parallel', all lines heading north, although measurements were made 'zig-zag'.

It is current practice of BACAS to start all grids heading north, 1 metre from the western edge of a grid, 0.5 metre north of the southern base line. Lines are moved eastwards during the survey of the grid until the survey is completed on the eastern limit of the grid. This ensures that there is no overlap and no gap.

The following figures show the layouts of grid numbers for each site for each method. Note that 'villa' and 'rotunda' use the following grids from the Poor Mead set:

Villa, res	115, 116, 117, 118	mag	15, 16, 17, xx		
	106, 107, 108, 109		6, 7, 8, 9	rotunda	180, 181
	141, 142, 143, 144,		44, 45, 46, 47	(res)	189, 190

The spreadsheet LoRoCont is also included as this contains the data necessary to reconstruct the contour maps, both the general site contours and the detailed contours around the villa site.

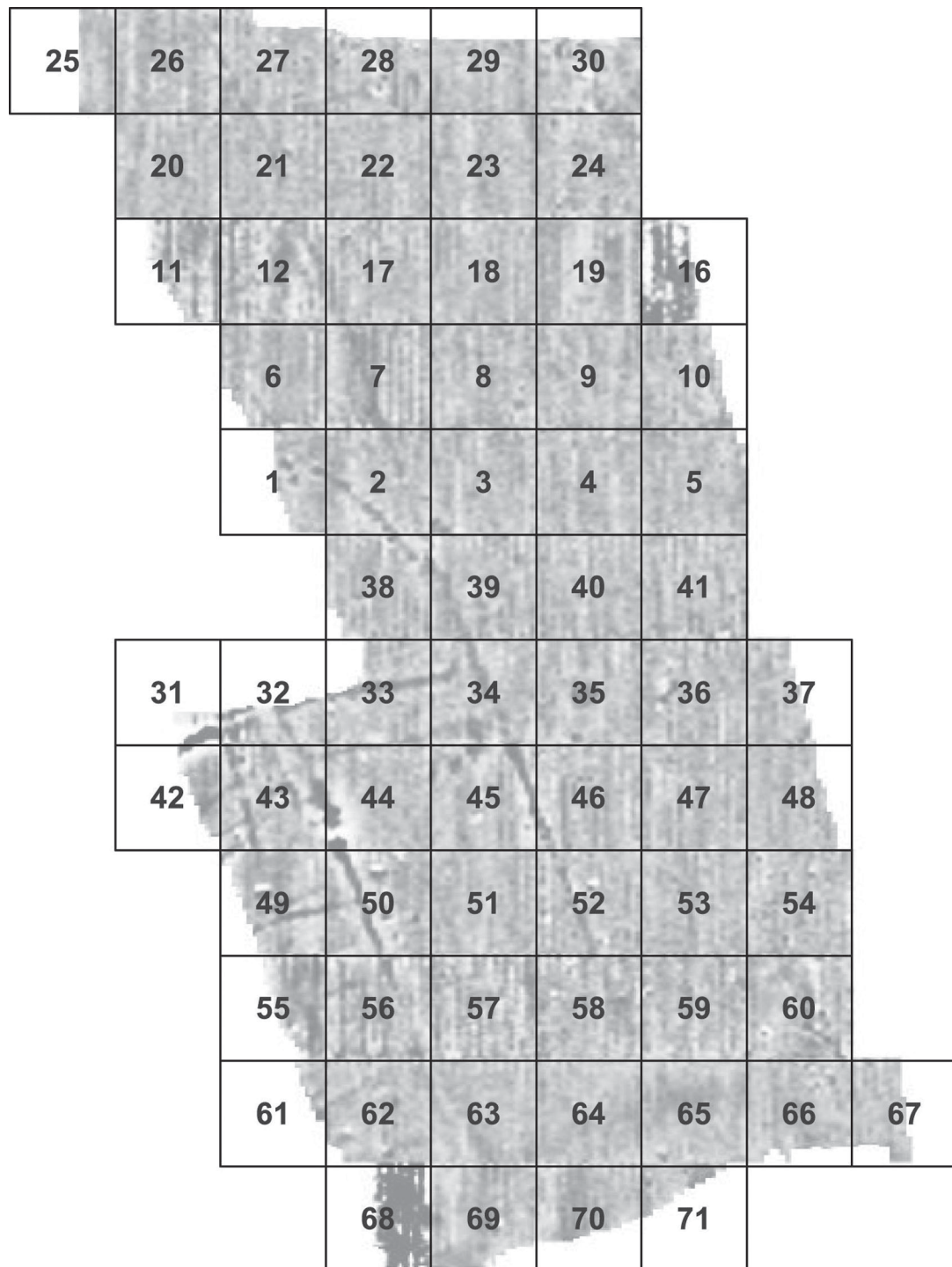


Figure A1.1 Further Portway (S0), gradiometer (M0) output and grid layout.

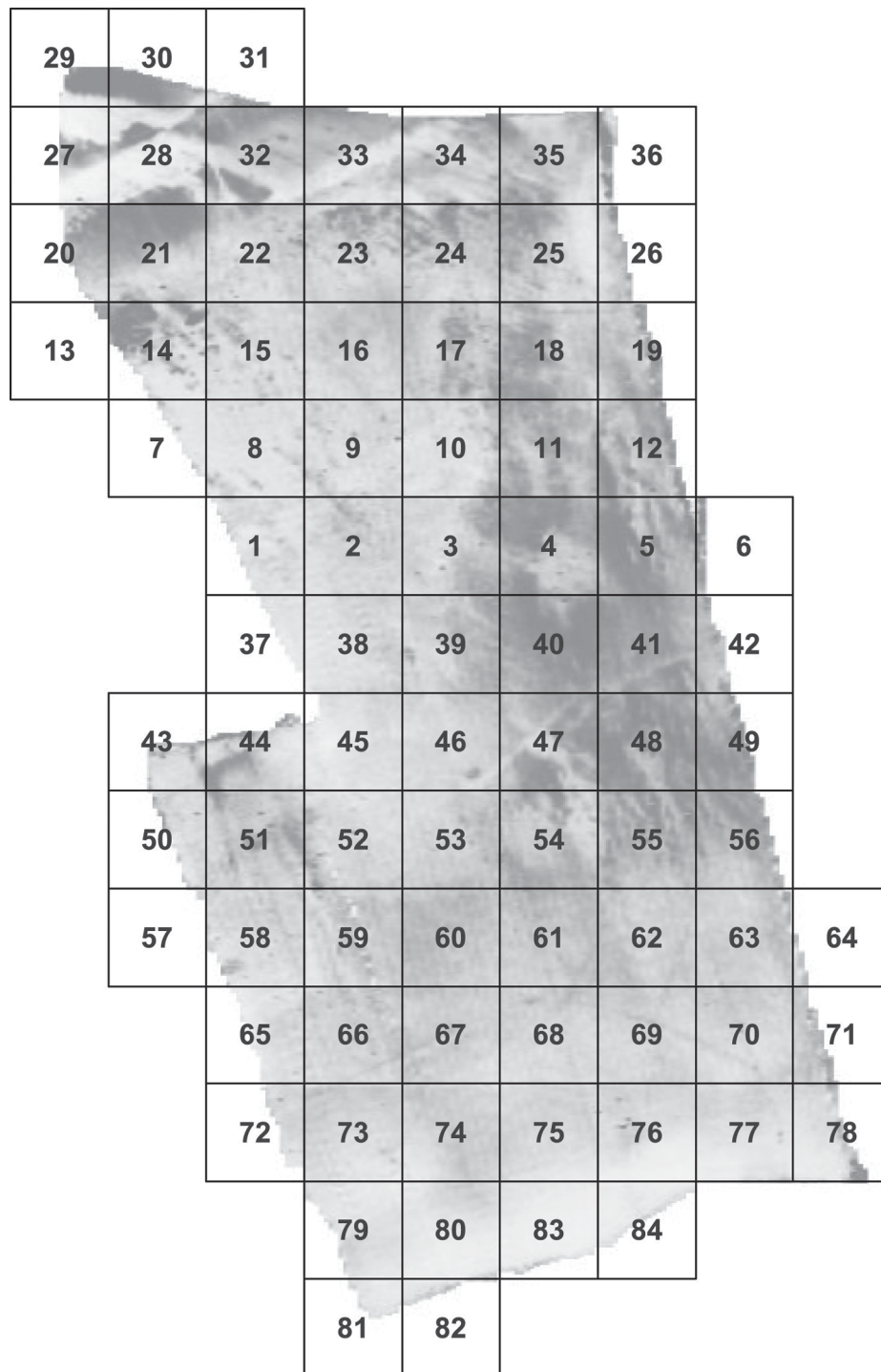


Figure A1.2 Further Portway (S0), resistance (M1) output and grid layout.

153	154	155	156	157	158	159	160			
145	146	147	148	149	150	151	152			
127	128	129	130	131	132	133	134	135		
	119	120	121	122	123	124	125	126		
	110	111	112	113	114	115	116	117	118	
	101	102	103	104	105	106	107	108	109	
	136	137	138	139	140	141	142	143	144	
	161	162	163	164	165	166	167	168		
	169	170	171	172	173	174	175	176	177	
	178	179	180	181	182	183	184	185	186	
	187	188	189	190	191	192	193	194	195	
		198	199	200	201	202	203	204	196	197
		206	207	208	209	210	211	212	205	
		213	214	215	216	217	218	219		
		220	221	226	227	228	229	230		
		222	223	224	225					

Figure A1.3 Poor Mead (S1), resistance (M0) output and grid layout.

33	34	35	36	37	38	39		
26	27	28	29	30	31	32		
18	19	20	21	22	23	24	25	
10	11	12	13	14	15	16	17	
1	2	3	4	5	6	7	8	9
	40	41	42	43	44	45	46	47
	48	49	50	51	52	53	54	
	55	56	57	58	59	60	61	
	62	63	64	65	66	67	68	69
	70	71	72	73	74	75	76	77
	78	79	80	81	82	83	84	85
	86	87	88	89	90	91	92	93
	96	97	98	99	100	94	95	
	101	102	103	104				

Figure A1.4 Poor Mead (S1), gradiometer (M1) output and grid layout.

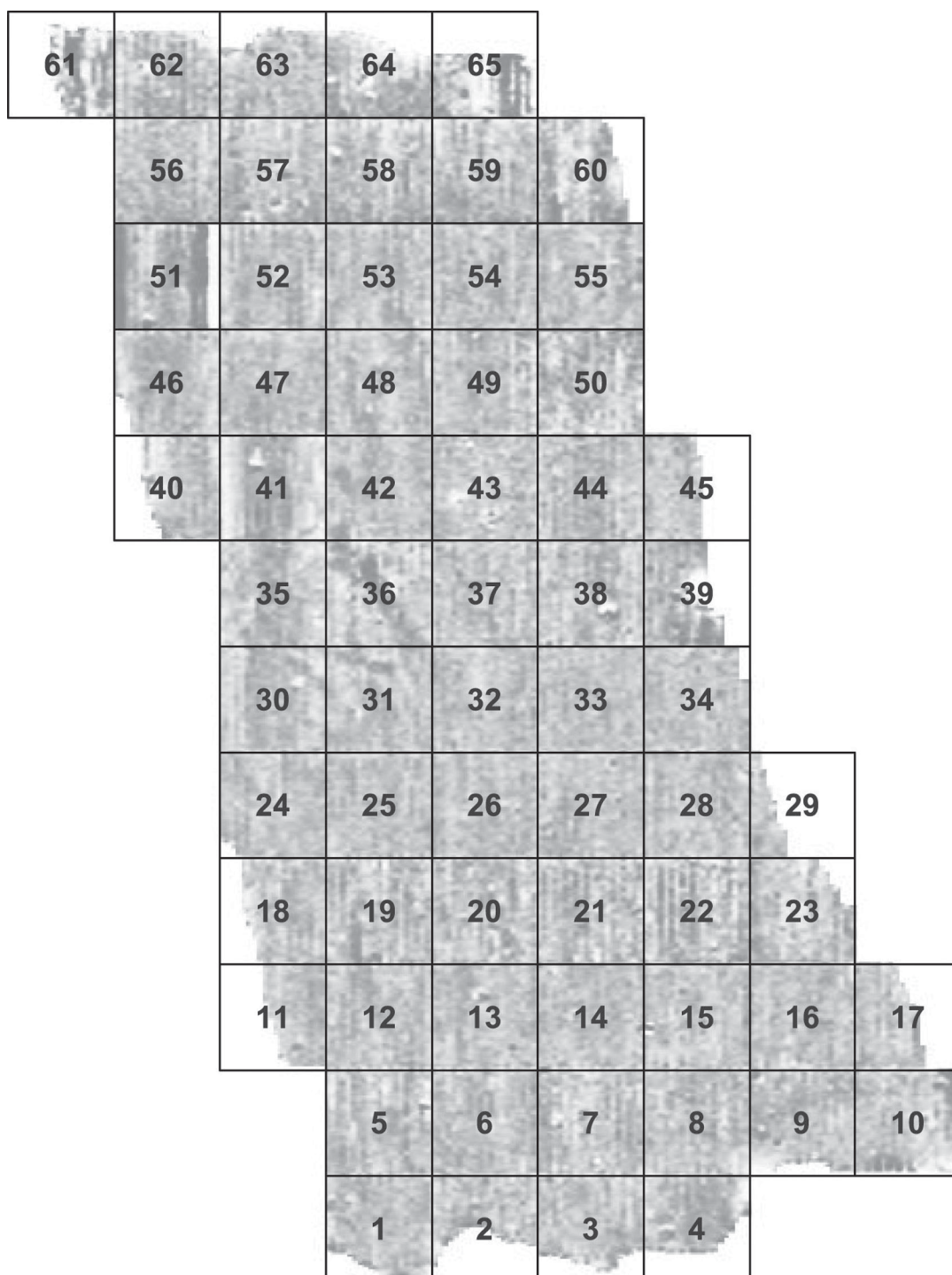


Figure A1.6 Hither Portway (S4), gradiometer (M1) output and grid layout.

Appendix A2 Relocating the grid

If any more work to be done on this site, it would be important to pick up the original grid. The arbitrary centre point, 1000, 1100 can be found from a small post, next to a fence post towards the western end of Further Portway. Extending a tape 100 metres towards a tree in the corner of the hedge at the easternmost point of the kink between Further Portway and Poor Mead arrives at a position 22.8 metres north of that point, which is grid 1000, 1000. This point was also 8.45 metres from the next tree north in the hedgeline. However, this turned out to be of little use in recovering archaeology as the villa was nearby but beyond the hedge.

The villa is best located by points 960, 980 and 980, 980, which can be located from a fence post at the westernmost point of the kink between Further Portway and Poor Mead and from the western of the two gateposts in the gateway in the kink.

Triangulation dimensions are shown below in figure A2.1, which also shows the plan of the villa.

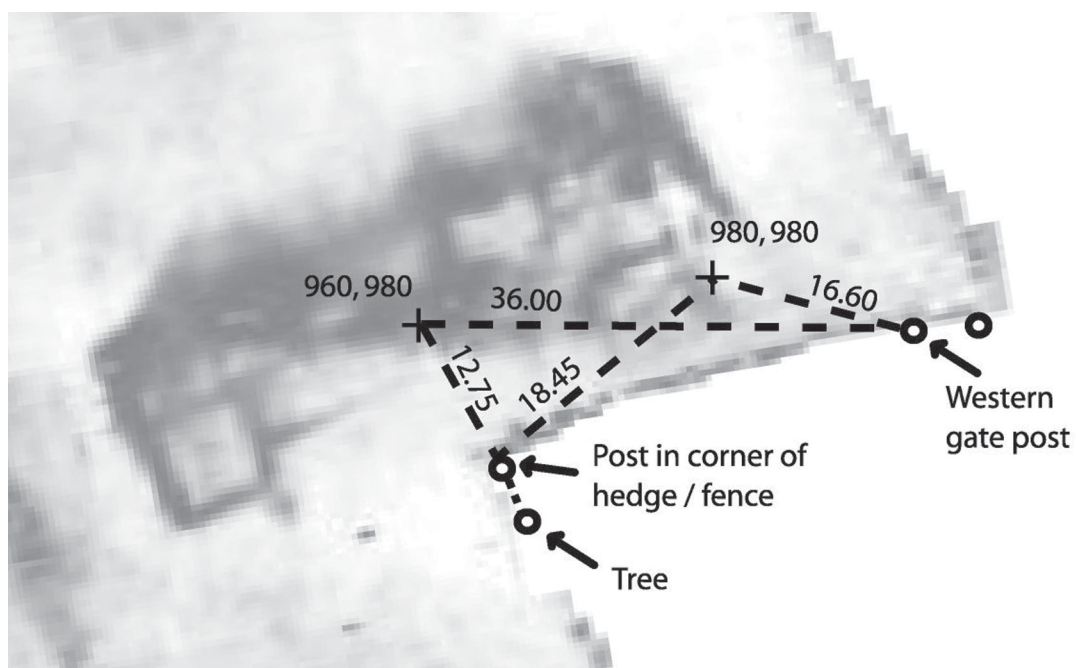


Figure A2.1 Relocating grid points close to the villa.

The Rotunda is some 120 metres away from here, so is best located by a separate triangulation exercise. Just over half way down the western bank of Poor Mead are two substantial trees about 20 metres apart. Each has a small cavity in its base.

Triangulation measurements from the cavities in these trees to points 840, 900; 860, 880 and 900, 900 are shown in figure A2.2, which also shows the layout of the rotunda building.

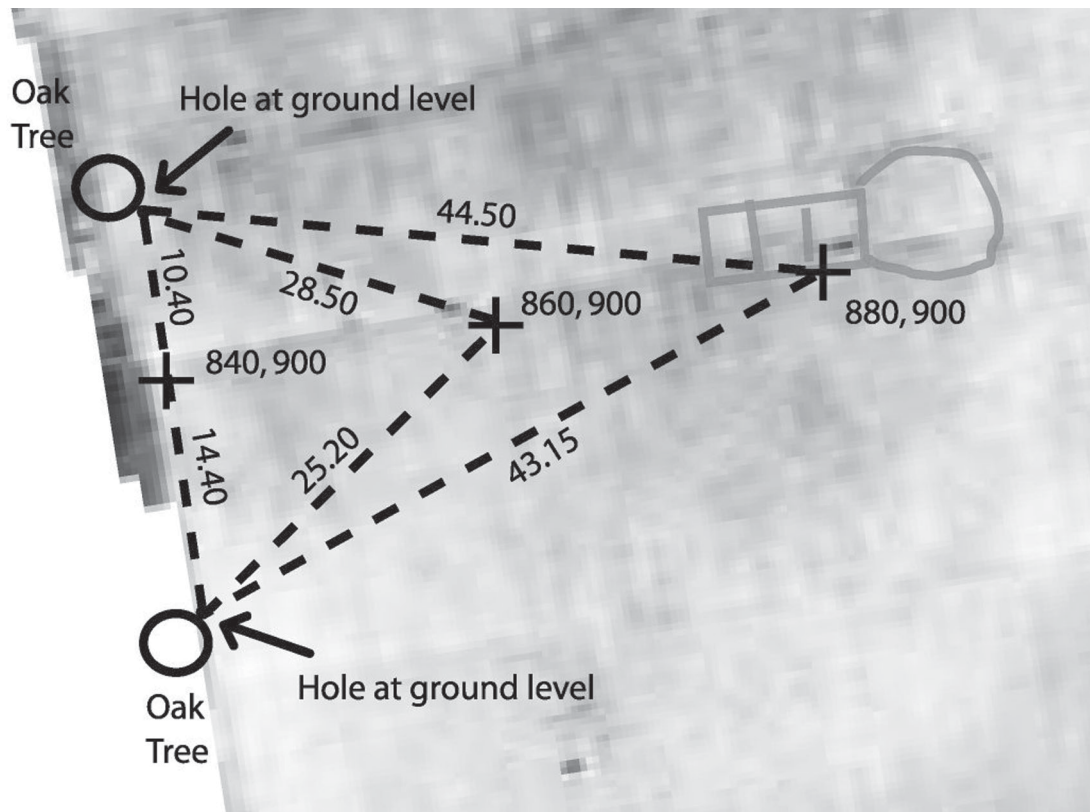


Figure A2.2 Relocating grid points close to the rotunda

Two grid points were triangulated in Hither Portway in case the grid need be reconstructed. Between Hither and Portway at about mid height is a small copse, which appears on geophysics print-outs as a small triangular blank. Its eastern extremity contained a fence post which acted as on fixed point. North of where the eastern hedge of Hither Portway alters direction northwards, there is a small triangular kink in the hedge, and within that kink an iron gate. The north-east point of this gate acted as a second fixed location. Triangulation to grid points 1140, 960 and 1140, 1000 is shown in figure A2.3

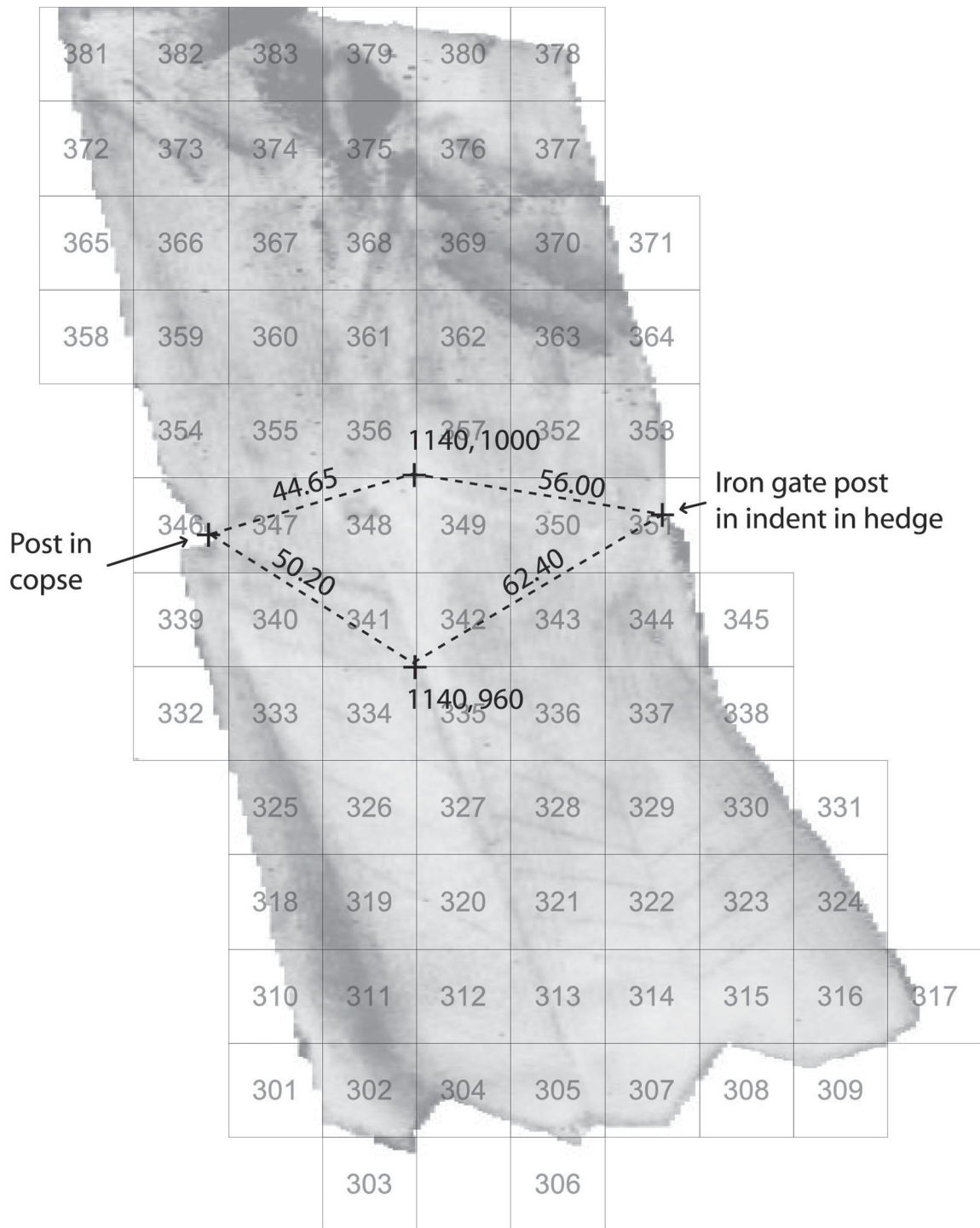


Figure A2.3 Relocating grid points in Hither Portway

Appendix A3 BACAS geophysics surveys in the locality.

This survey at Lower Row is part of a continuing campaign of geophysical survey in the locality of Hemington to identify archaeological sites and relate them to the excavations at Blacklands and Homefield in Upper Row Farm.

Sites relevant to this study are:-

Blacklands (centre grid reference ST763541, HER 15303). Small Roman villa (subject at present to excavation) in enclosure with gate house. South portion of field rich in pre-Roman archaeology. Possible second villa at east end of field.

Home Field and surrounding fields (centre grid reference ST766536, HER 15304). Small mediaeval building currently under excavation. Stream has been altered. The building lies on old stream course. Two buildings lie on old stream course lower down, in Three House Field. A drainage system in the south-eastern portion of Homefield continues under a hedge (present in 1840) into Three House Field. Three House Field has a small Roman farmstead on its southern ridge. There are signs of pre-Roman settlement in Three House Field. To the west, Hayside yielded little firm archaeology but Badcox, which opens off it, showed a large building with an internal circular structure - this at the low, wet point of the field.

Peart Woods Villa (also referred to as Springfield, centre grid reference ST783548, HER27574). This was a very large villa, of some 80 metre frontage, but just the breadth of a single room plus corridor. There are east and west wings. The west wing had been rebuilt at least once. The east wing was clipped by the modern road. A mediaeval road went straight through the middle of the main wing. A probable bath house was to the south of the west wing. 200 meters further west was another probable building with both Roman and mediaeval surface finds close by. The villa has been subject to trial excavations which confirm the geophysics. Tesserae and painted plaster were found in abundance, but not in situ. The results have been reported to Somerset County.