



Geophysics in the Minster Environs, Warminster, Wiltshire, 2014.

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Bath and Camerton Archaeological Society
& Artefact it Ltd

Abstract

As part of the Warminster Heritage Lottery project, a number of geophysical surveys using resistance and magnetometry techniques were conducted on various sites in the northern portion of Warminster town in Wiltshire, the research aim being to search for signs of occupation pre-dating the development of the mediaeval market town. The survey would also look for any possible church buildings away from the present minster church, which is predominantly a Victorian rebuild? The sites were the only open spaces available, but those of any size were in use as school playing fields, which had undergone grading and so rearranged the topsoil. Nonetheless, there were a number of indications of possible earlier settlement, although these appeared to be prehistoric rather than pre-Norman. These could be on dry terrace or right down on the flood plain of the Were Stream. Limited surveying close to the church and observation of architectural features, suggested that any previous Minster church was most likely to be under or very close to the present church.

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A number of the maps and plans were produced using Dorset Explorer and Google Earth as bases. The author acknowledges this gratefully.

1 Introduction

1.1 Location and Topography

The town of Warminster is situated within western Wiltshire (figure 1.1) approximately 7km from the Somerset border, within the upper reaches of the River Wylde and lies beneath the western edge of Salisbury Plain, approximately halfway between Salisbury and Bath.

The central area of the town lies mostly upon a spur of Greensand although there are also large pockets of chalk underlying the urban area (British Geological Survey 1965). The town is surrounded to the north, south and east by steep valley slopes cutting through the Chalk and Greensand, whilst to the west, rise the undulating clay and limestone landscape of Cley Hill and Longleat.

The Greensand is subsoil which can prove frustratingly difficult for geophysical survey techniques and often requires considerable filtering and enhancement to produce results. This caveat must be applied when studying the results presented below.

A number of discrete sites were subject to geophysical survey in the vicinity of the Minster church at Warminster, Wiltshire, grid reference ST879455.

Figure 1.1 shows the general location and figure 1.2 shows discrete survey areas within this vicinity.

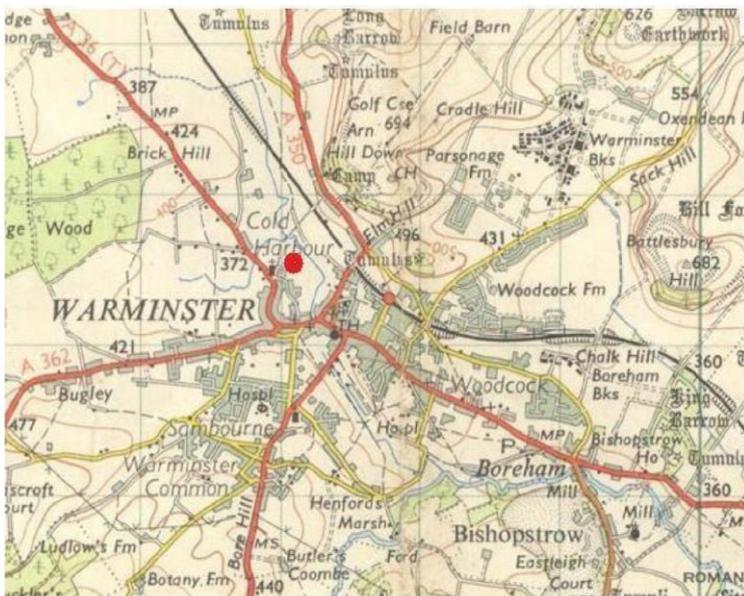


Figure 1.1. Location of Warminster and. St Denys Warminster, Wiltshire. Ordnance Survey data © Crown Copyright database 2013

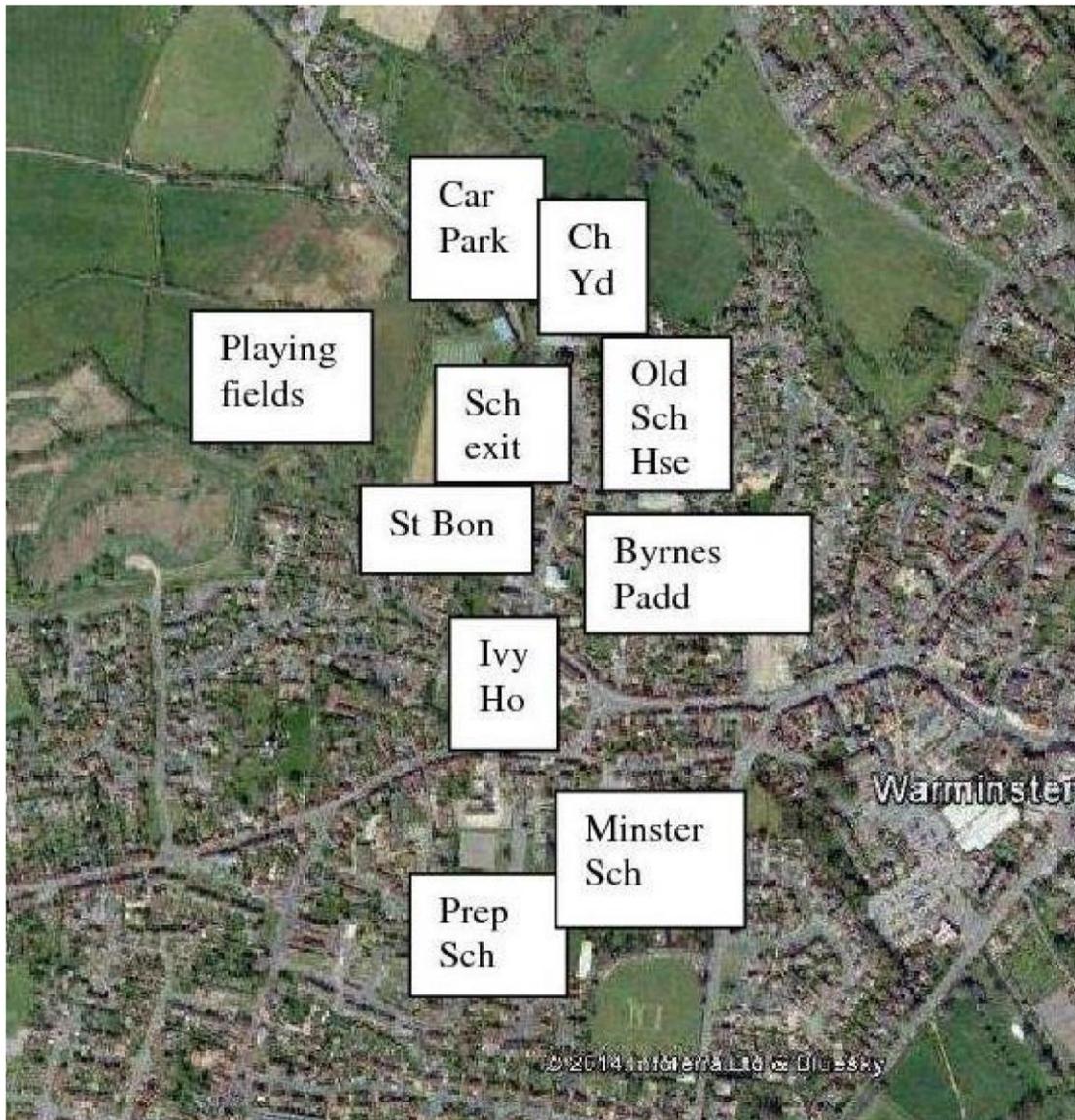


Figure 1.2. Location of individual survey sites within the study area. Site names abbreviated.

1.2 Dates

The survey was conducted between the 29th April and 14th May 2014, on Tuesdays and Wednesdays of each week, giving six days effort in all. A supplementary day was worked to survey the playing field of Warminster School on July 15th 2014. A small survey was also added in the church car park on that day.

1.3 Resources

The project was managed by Mat Charlton BA, PifA and Owen Dicker with technical leadership provided by John Oswin MA PhD CSci of the Bath and Camerton Archaeological Society. The survey was conducted by members of the Bath and Camerton Archaeological Society (abbreviated to ‘Bacas’), using equipment owned by the society. Mark Corney has contributed comments on the archaeological background and on the editing of the text.

1.4 Purpose

The purpose of the survey was to locate and identify evidence for the early development of Warminster; evidence as to the nature, type and density of the occupation within the area of Silver Street and Emwell Street and signs of Minster activity pre-dating the present church structure. The 'minster' name suggests an early, pre-Norman foundation for the church and the present town centre, based on a mediaeval foundation of a market, is some 500 m further to the east.

1.5 Scope

This report covers only the geophysical surveys undertaken on areas of land accessible for surveying in the study area, including the Minster Church. It may discuss, but does not report on, other archaeological activities associated with studies of Warminster.

1.6 Archaeological Background

Prehistoric

The town of Warminster is surrounded by three prominent hill forts; Cley Hill, Battlesbury and Scratchbury Camp, as well as burial mounds and other monuments of Neolithic and Bronze Age date in the immediate vicinity (McOmish et al 2002).

The evidence for prehistoric occupation in and around Warminster consists of Mesolithic finds found in Boreham Road, Neolithic worked flints recovered from a number of sites including The Close, Boreham Road, Princecroft Allotments and Folly Lane, as well as Bronze Age flakes located during an evaluation to the rear of George Street, and more recently worked flint found at Victoria Road and Neolithic/Bronze Age flints found at Bradley Road Allotments.

A geophysical survey and subsequent evaluation trenches undertaken in 2013 by AC Archaeology north of the Minster provided evidence of archaeological deposits of generally medieval or post-medieval date. One trench produced prehistoric lithics. In total 30 pieces (227g) of worked flint was recovered with much of the material being residual with the exception of the flint recovered from a trench located 60 metres west of the present day Minster boundary and 10-15metres north of the present day church car park, approximately 10 metres east of the Were. This assemblage contained a group of flints including debitage and waste flakes. Most of the flint recovered from the area is chalk derived, being dark grey/black and very glossy and waxy in texture and often with surviving cortex. Few tools were present, although a possible awl was noted and a broken blade and cores were present. The assemblage is tentatively dated as late Neolithic/Early Bronze Age.

Further evidence of prehistoric activity within the immediate vicinity of the Minster comes from a Durotrigian bronze or base silver stater, (Weaver 2013: 14) and a single sherd of late Iron Age/ early Roman pottery located during an evaluation at Byrne

Paddock, Warminster School (Heaton 2002: 6). A single sherd of prehistoric flint tempered pottery has also been recovered at Cold Harbour, some 500 metres west of Warminster School along with Romano-British and Medieval pottery (Collyer 2014).

In 2013 investigations by AC Archaeology recovered a single sherd of possible Iron Age/Saxon pottery from a trench approximately 40 metres north of the present day Minster boundary wall and 50 metres south of the Were. The fabric of the sherd though small, was distinctive with possible organic temper and has tentatively been dated as Saxon although this fabric type is similar to Iron Age fabrics. (AC 2013: 210.)

Roman

The strongest evidence of Romano-British activity comes from the villa(s) at Pitmead, found in the late 18th century. Antiquarian excavation located the sites of two Roman villas located about 300 yards apart. One was of winged corridor type. The western building had a probable bath suite. A portion of tessellated pavement featuring an animal, possibly a hare, was taken to Longleat House but now lost. Other finds include roofing tiles, painted wall plaster, brick flues, pottery, a coin, and two inhumations. The proximity of the two buildings suggests they form part of a single, large villa complex and is a site of considerable importance and potential (Corney pers comm.).

Further finds in the area include coins and pottery as well as Romano-British remains at Arn Hill and Mancombe Down (Crittall 1965: 91). Excavations at Emwell Street by Smith located a small collection of Romano-British pottery in a residual context and the pollen spectrum from the lowest excavated layers indicated that within 50 metres land was being farmed during the Roman to early Saxon period (Smith 1997: 48). Pottery and building material has also been located at Cold Harbour and coarse wares located north-east of Middle Hill (Collyer pers comm). Extensive nucleated Romano-British settlements are also known at Knook Down on the western side of Salisbury Plain only 7km east of Warminster (McOmish et al 2002).

Saxon- Medieval

By the 9th century, Warminster had become a royal manor and remained in royal ownership in 1086 (Draper 2006: 62). The original manorial complex may lay beneath the present day Manor gardens and the later medieval and Post-Medieval manor buildings, although there is some uncertainty over this location (McMahon 2004:8.) By the 10th century Warminster had achieved at least nominal urban status which is signified by the presence of moneyers in the town during the reign of Aethelred II. Under Saxon law, mints could only operate within a 'port' or town.

Archaeological evidence for Saxon activity comes from the excavation undertaken by Bob Smith during 1979 in Emwell Street which located a series of drainage ditches, datable to no later than the mid-11th century. These had later become choked with domestic refuse later in that century and represented activity typically associated with the rear of properties and are likely to relate to a building which would have fronted onto the present Silver Street.

Other evidence of Saxon activity within the area include three Saxon axes found at Battlesbury Camp, Saxon pottery at Boreham, three Saxon burials excavated from a

long barrow in 1800, a Saxon gold coin and a gold and crystal aestel (manuscript pointer) from near Cley Hill. In addition a possible Saxon chapel west of the present day Minster church at Cold Harbour is suggested in an 18th century manuscript reporting the discovery of coffins, bones and parch marks in the grass (Daniell 1879). The site is within a meadow immediately north of present day Warminster School's hard surface sports courts.

The Domesday Survey of 1086, records a large rural manor with extensive arable holdings and seven mills. The population at that time had been estimated at c.500 (Smith 1997: 4), with some thirty burgesses involved in a variety of crafts and trades, although these would have lived on the royal demesne, and may only have served the needs of the estate. The parish church of St. Denys founded, in the later 11th century, lies at the north end of Church Street and may have replaced an earlier, Saxon foundation.

Church Street is first mentioned in the 13th century, when it was known as Byne Street. The Medieval manor of Warminster was sited some distance to the east of the parish church, possibly upon a Saxon site. There are records of the renovation and extension of the manor house in the later 14th century and a chapel is known to have been attached to the building in the 13th century. The present house is of 18th century date.

Excavations at Emwell Street

In the period immediately following the Conquest, the nucleus of settlement at Warminster remained within the area occupied during Saxon times. Excavations at Emwell Street revealed layers and features, spanning the later 11th to 14th centuries and overlying the late Saxon deposits.

The finds included evidence of 12th century watercourse modifications and successive episodes of refuse dumping and ditch digging. In the 14th century, the whole site was levelled with a thick layer of re-deposited greensand, probably to construct a building platform. Artefact and environmental evidence from the site indicates that activities included iron smelting and forging, butchery, leatherworking and perhaps potting. An important assemblage of medieval pottery was recovered, including local wares from the Crockerton kilns.

2 Method – Geophysical survey

Definition

The Standard

An archaeological geophysical survey will determine, as far as is reasonably possible, the nature of the detectable archaeological resource within a specified area using appropriate methods and practices.

These will satisfy the stated aims of the project, and comply with the Code of conduct, Code of approved practice for the regulation of contractual arrangements in field archaeology, and other relevant by-laws of the IfA.

Definition of geophysical survey

Archaeological geophysical survey uses non-intrusive and non-destructive techniques to determine the presence or absence of anomalies likely to be caused by archaeological features, structures or deposits, as far as reasonably possible, within a specified area or site on land, in the inter-tidal zone or underwater. Geophysical survey determines the presence of anomalies of archaeological potential through measurement of one or more physical properties of the subsurface.

Purpose of geophysical survey

A survey undertaken to the Standard will as far as possible inform on the presence or absence, character, extent and in some cases, apparent relative phasing of buried archaeology, in order to make an assessment of its merit in the appropriate context, which may lead to one or more of the following:

- a. The formulation of a strategy to ensure further recording, preservation or management of the resource
- b. The formulation of a strategy to mitigate a threat to the archaeological resource
- c. The formulation of a proposal for further archaeological investigation within a programme of research

Occurrence

A geophysical survey may arise:

- a. In response to a proposed development which threatens a known or potential archaeological resource
- b. As part of the planning process (within the framework of appropriate national planning policy guidance notes and/or development plan policy)

- c. As part of an Environmental Impact Assessment (EIA) (see 3.1.7 below)
- d. Outside the planning process (e.g. ecclesiastical development, coastal erosion, agriculture, forestry and countryside management, works by public utilities and statutory undertakers)
- e. Within a programme of research not generated by a specific threat to the archaeological resource such as the Warminster Civic Trust Saxon project.
- f. In connection with the preparation of management plans by private, local or national and international bodies

An archaeological geophysical survey may therefore be instigated or commissioned by a number of different individuals or organizations, including local planning authorities, national advisory bodies, government agencies, private landowners, developers or their agents, archaeological researchers, community groups, etc.

Procedures

Project identification

Within the planning framework in the United Kingdom, Channel Islands and Isle of Man the desirability of preservation of archaeological deposits is a material consideration, and consequently ‘developers and local authorities should take into account archaeological considerations and deal with them from the beginning of the development control process’ (PPS5, WO circular 60/96 para 10, NPPG 5 para 14, PPS 6 para 3.4).

In a research context, the area for potential investigation or study for geophysical survey will have been identified and selected by an archaeologist based on specific aspects or themes relating to their own defined research interests.

This could include work undertaken through universities, central government agencies, local authorities, museums, independent trusts, private companies, community groups or individuals. However it arises, an archaeologist should only undertake a geophysical survey which is governed by a written specification or project design agreed by all relevant parties as this is the tool against which performance, fitness for purpose, and hence achievement of standards, can be measured. The survey project manager should be aware of and ensure compliance with all necessary legal requirements (English Heritage 2008).

Fieldwork

The specification or project design must be agreed by all relevant parties before work commences. All work must conform to the agreed specification or project design. Any variations must be agreed in writing by all relevant parties.

All staff, including subcontractors, must be suitably qualified, skilled and competent for their project roles, and employed in line with relevant legislation and IfA by-laws (see Appendix 6). The survey leader or project manager should preferably be a corporate member of the IfA or an equivalent professional body. All staff, including subcontractors, must be fully briefed and aware of the work required under the specification, and must understand the aims and methodologies of the project.

All equipment must be suitable for its designated purpose and in sound condition, complying with Health and Safety Executive regulations and recommendations.

Full and proper records (written, graphic, electronic, and photographic as appropriate) should be made for all work using pro forma record forms and sheets as applicable. Digital records created as part of the project should comply with specified data guidelines (see Annex 3). An archaeologist must ensure that digital information, paper and photographic records are stored in a secure and appropriate environment, and are regularly copied or backed up, with copies stored in a separate location

Health and Safety regulations and requirements cannot be ignored no matter how imperative the need to record archaeological information; hence Health and Safety will take priority over archaeological matters. All archaeologists undertaking fieldwork must do so under a defined Health and Safety Policy and comply with all relevant Health and Safety accreditation. Archaeologists undertaking fieldwork must observe safe working practices; the Health and Safety arrangements must be agreed and understood by all relevant parties before work commences. Risk assessments must be carried out and documented for every field project, in accordance with the Management of Health and Safety at Work Regulations 1992.

The archaeologist undertaking a geophysical survey must ensure that he or she has adequate insurance policies, public and employer's liability, and some relevant form of civil liability indemnity or professional liability.

Post-fieldwork analyses and reports

All assessment and analytical work must be carried out by suitably qualified, skilled and competent staff that must be appraised of the project design before commencing work. The level of recording and analysis of the data should be appropriate to the aims and purpose of the project.

All data generated from the survey should be included in the project archive. All reports must address the aims and purposes of the project design and/or specification. All reports should be written in a clear, concise and logical style and technical terms should be explained. Consideration should be given during the preparation of the report to the requirements of public inquiries or courts of law if appropriate.

As a minimum, an interim survey report (see English Heritage 2008 and Appendix 1) should be submitted to the appropriate Sites and Monuments Record/Historic Environment Record, the National Monuments Record and, where appropriate, the central government conservation organization within six months of completion of the fieldwork, or, as may be specified by contractual or grant conditions. In Scotland, a

summary interim report must be published in an annual, regional or national digest of fieldwork (Historic Scotland 1996f, 2).

2.1 Gridding – Warminster project

Areas for surveying were laid out in 20 m squares. Where feasible, a long east-west baseline would be set up at the southern end of the field to allow for north-south traverses of the instruments. Grid corners would generally be arranged about 5 m from the southern boundary of a site and 5 m from the western boundary, so that iron features just outside the fields, for instance in neighboring gardens, would cause less interference with the magnetometer.

Each of the sites had to be gridded out separately, with no sightlines between them, so the composite picture could only be seen by mapping individual plots onto a larger area plan.

2.2 Magnetometer

The survey was carried out using a Bartington 601-2 dual fluxgate gradiometer, as illustrated in figure 2.1. The instrument was set to take 4 readings per metre along lines 1 m apart, giving 1600 readings per complete 20 m square. The first traverse (lines 1 and 2) was heading north, starting 1 m east of the west grid edge and 0.25 m north of the southern baseline, in accordance with Oswin, 2009, p 115, fig 5.8 (c).



Figure 2.1. Magnetometer. Bartington 601-2.

2.3 Twin-probe resistance

Two resistance devices were used, a TR/CIA, illustrated in figure 2.2 and a Geoscan RM15D, and illustrated in figure 2.3. The instruments were generally used on different sites, but when working on the same site, were kept separated by a minimum of 60 m to avoid cross talk between them. The two instruments are of similar appearance and operation, but they have major differences in data counting and download. This was acceptable for the software used provided the data set from each instrument was downloaded, installed and mapped separately. Readings were taken at 2 per metre on lines 1 m apart, giving 800 readings per complete 20 m square. The initial traverse was

in a northerly direction, starting 1 m east of the west edge of a grid, and 0.5 m north of the baseline.



Figure 2.2. Resistance measurement. TR/CIA meter.



Figure 2.3.

Resistance measurement. Geoscan RM15D meter.

2.4 Ground-penetrating radar



Figure 2.4. Ground-penetrating radar. MALA X3M, 250 MHz head.

Radar survey through the gravel of the car park was done using a MALA X3M, fitted with a 250 MHz antenna, as illustrated in figure 2.4. It was set to take 10 readings per metre to a nominal depth of 3 m, distances being measured by an odometer wheel. Traverses were done at 1 m intervals along a 28 m length in a zig-zag fashion. A small area of grass just to the east of the car park was surveyed separately. Wave speed was not measured directly, but was assumed to be 0.06 m/ns.

2.5 Software

The magnetometer was downloaded to computer via Bartington Proprietary software (which automatically sorted the data to parallel) and the raw grids were then fed through a Bacas proprietary zero-median de-striper. In this process, the raw data files were given a prefix 'm' and the de-stripped files were given the prefix 'd'. The 'd' files were subsequently used in analysis.

The TR/CIA and RM15D resistance devices were downloaded to computer via Bacas proprietary software. Those from the TR were parallel data files, and those from the RM15 were zig-zag files. Both were given prefix 'r' but were not further distinguished, so it was important to know which files originated from which machine.

The data downloaded to computer were then imported into INSITE v3 for analysis. This is often regarded as obsolete, but its' visual and versatile mapping of grids make it the preferred option for Bacas. Other software would not be able to cope with grids mixed between the TR/CIA and the RM15D. The results shown here are the outputs from INSITE.

Some data can also be processed using XL routines, which provide a linear scale rather than logarithmic, and contour levels can be coloured for extra clarity.

The radar was downloaded to computer and processed using REFLEXW. It will generally be displayed as depth slices using 'rainbow1' spectrum to colour code levels of return, unless otherwise stated.

2.6 Limitations

Grid square set-up was generally accurate to within 20 cm.

Many of the areas surveyed were close to residences or school fixtures, so that ferrous interference with magnetometer could be quite intense. Where feasible, this could be filtered out or minimized, but all such actions also degrade the raw data, and visual information may be lost as a result. The playing field areas of the schools may also have been subject to grading to provide a level surface. This could mean removal of soil (and any archaeological features) at one end and deposition of over burden at the other, increasing the depth of any features.

The best view of the data plot is usually obtained on the computer screen during processing, where slight adjustments to angle or to level can make faint features more evident. This cannot necessarily be displayed clearly in the report, especially in low-resolution screen versions.

Depths of radar slices are given in 'nominal' depths, assuming a wave speed of 0.06 m/ns, and so should not be treated as precise. The wave speed was not measured directly, and could have been higher, making real depths greater than the nominal figures quoted.

3 Results

3.1 *St Boniface Field ST8668 4544*

3.1.1 Magnetometer

St Boniface' Field (see figure 1.2) is an area used as playing fields within the main grounds of Warminster School. The area is used as a playing field, but is set out as flat lawn when not used for sports. It is scarped into a gentle slope at its east end, and there is a slight step up to grass lawns immediately behind the school house. The maximum size of step is about 0.5 m, suggesting relatively little loss of top soil. Note that the survey continued up across accessible parts of these lawns.

The south of the field was delimited by bushes, but there was a new housing estate beyond this, with the likelihood of iron fences and furniture. The western end was marked by woodland, but there were also iron fences and sports furniture which could provide interference. The north was marked by a low brick wall, and cars could park along part of this.

A border of up to 5 m was allowed along the southern and northern edges of the field, and no magnetometry was attempted within these areas. Nonetheless, much ferrous interference was encountered, from buried drains, sports fixtures and metal scraps trodden into the grass.

The magnetometer plot is shown in figure 3.1.

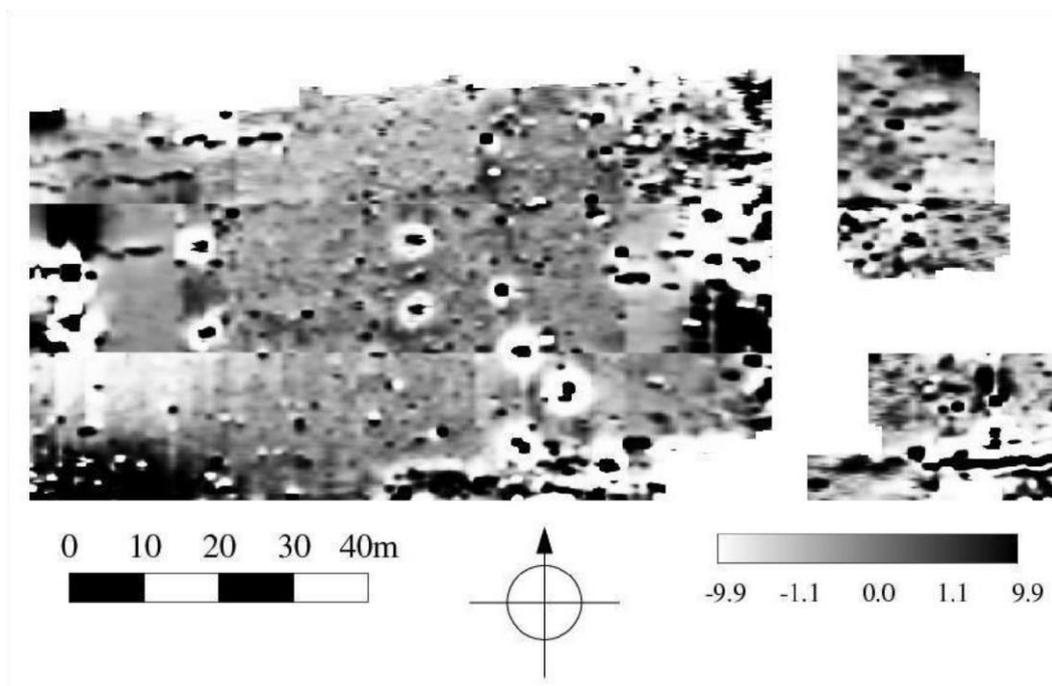


Figure 3.1. Magnetometer plot for St Boniface' Field, Warminster School.

The signals of possible archaeological interest are shown in figure 3.2. There are some striations in the north-west area, marked in blue, which may be related to finds from a previous geophysics survey (Sabin and Donaldson, 2012) just beyond the field, and may also relate to features found on the playing fields. In the centre of the field, some form of boundary forms a faint line heading north-west before curving round and heading back south-east, enclosing an area some 20 m wide. This is marked in green. A rectangular enclosure may be denoted by post holes close to the curving portion of the boundary, but this is only a faint feature. There is also a possible sub-circular structure within the curving section. These are also both marked in green. A narrow track way enters from the east at the far south of the plot and heads west. It fades out midway along the field, possibly where it has been graded away to provide a level surface. The track is marked by two ditches no more than 4 m apart. The track is marked by a single brown line. Some of the individual signals may represent post holes but may also be due to modern interference, but they form no distinct patterns.

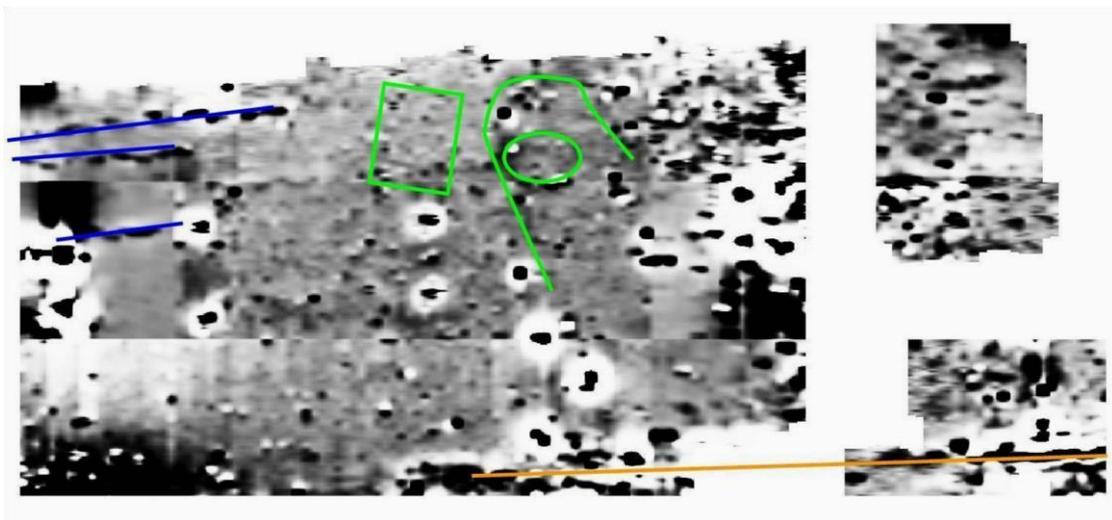


Figure 3.2. St Boniface' Field, interpretation of magnetometer results.

3.1.2 Resistance

The resistance plot is shown in figure 3.3. The plot was continued further to the west than that of the magnetometer, and one partial grid to the north was also surveyed. The gardens were also included in this survey. The features which look the most intriguing can be ignored: they are not archaeology, but residual extra electrical conductance through white lines painted on the grass. The curving line around the south and east may mark the edge of sports activities. A circular feature of low resistance in the south portion of the gardens may be of archaeological interest or may represent a flower bed or other garden feature. There is too much interference on the magnetometer plot here to make comparisons.

There are, however, two potential features of interest. In the far west are three short stub walls. There is also an area of lower resistance coming into the field from the east and extending to mid way. This may represent some earlier drainage feature.

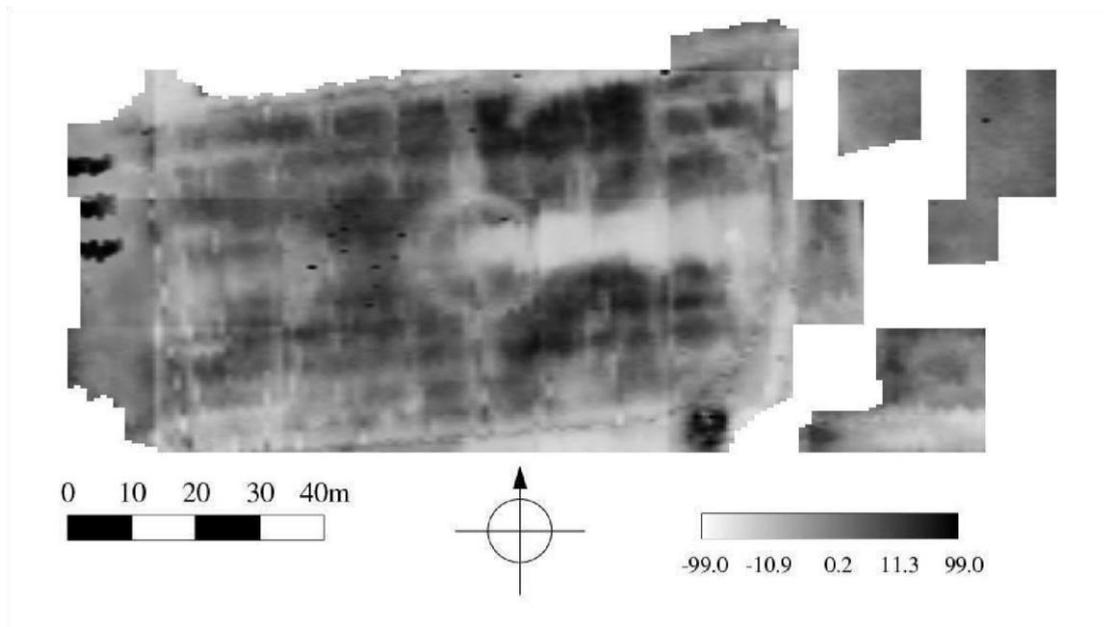


Figure 3.3. Twin probe resistance plot of St Boniface' Field. Note stub walls in the far north-west, and an area of damper soil from east to centre. Other pale lines are due to white-line drawing for sports activities.

3.2 Lawns by school exit gate ST8689 4551

3.2.1 Magnetometer

To the north of new school buildings, there is an area of grass either side of the main exit drive. To the west are sporting areas with a number of wire fences. On the west side of the drive at its north end is a former lodge building. A wall curves round from north to east to mark the edge of school property. Beyond this wall, ground levels are nearly one metre lower, and the road also curves round at this level. It is not obvious whether the road has cut down into the soil, easily feasible on greensand, or whether the school grounds have been build up by dumping soil.

Resistance survey was applied both west and east of the road but magnetometry was limited to the east side of the drive, as there was too much ferrous interference to the west.

Figure 3.4 shows the magnetometry over the lawns to the east of the drive. The southern part was masked by interference from the buildings even 10 m from them, and there was some strong interference near the drive. To the north of the area of interference are some features of possible archaeological interest. To the south of a linear feature indicated by negative magnetic response are a few circular features, possibly with internal structures, and these could represent round houses. As there is some overlap, they would not be contemporary, but established over a period of time. They are marked up in figure 3.5. However, given the possibility of soil disturbance in this survey area, these must be treated with some caution.

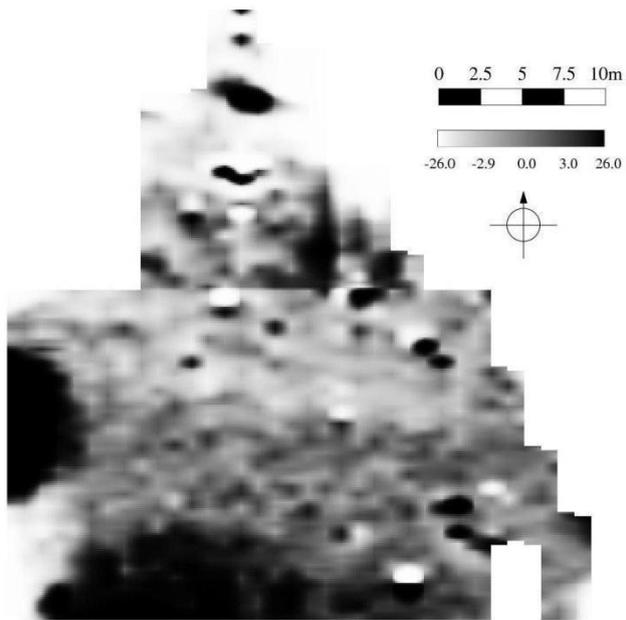


Figure 3.4. Lawns by exit gate. Magnetometer survey.

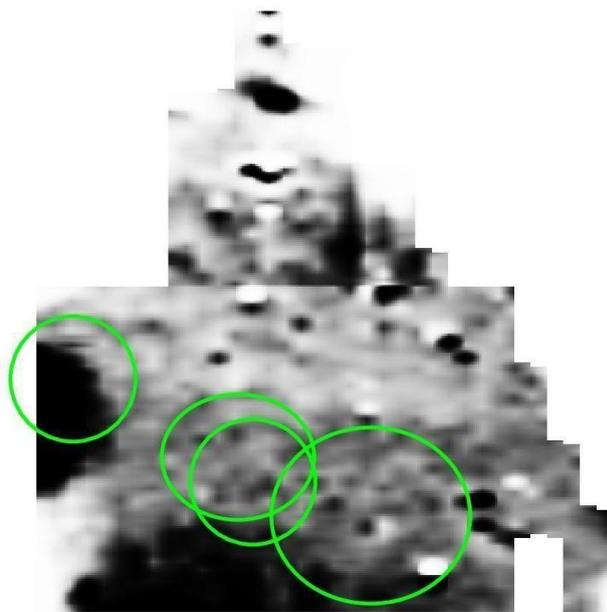


Figure 3.5.
Interpretation of magnetometry by exit gate. Green circles show features which may be round houses.

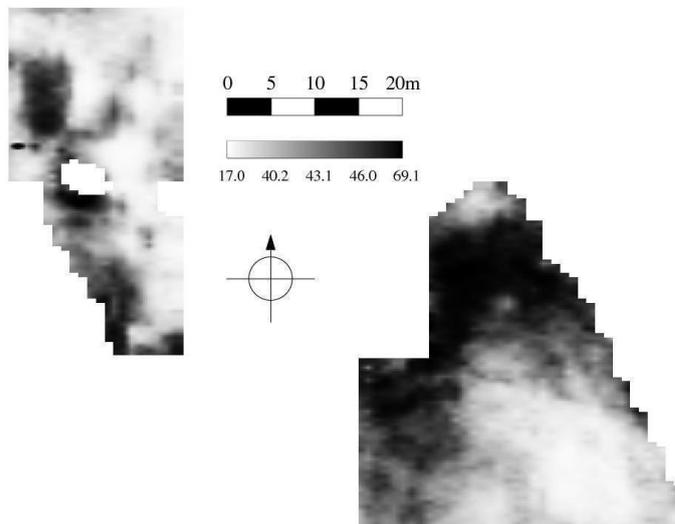


Figure 3.6. *Resistance survey, lawns both sides of exit gate. Note possible building in far north-west, with wall extending from it, and possible small building under bush.*

3.2.2 Resistance

The resistance plot, which extends both sides of the drive, is shown in figure 3.6. To the west side, a low bank and hedge appears to be indicated by higher resistance, and at its northern end, on the side lawn of the lodge is a possible small building some 8 m by 5 m with a wall line to its east. There is also a second possible building, but it is masked under shrubs. A feature starts at the extreme north, but this is approaching an area of soil disturbance by the baths and continuing the survey further north was considered unwise.

On the east side of the drive, an area of low resistance extends from the south-east, and there is a faint line corresponding to the linear feature noted in the magnetometer. To the south of this, there is an area of higher resistance corresponding roughly with the

westernmost of the possible round houses observed in magnetometry. The northern portion of this area is marked by high resistance, either wall tumble or dumped hardcore.

3.3 *Byne Paddock ST8689 4529*

3.3.1 Magnetometry

This site is to the east of the main school but still within the grounds. It is on slightly higher ground than St Boniface Field, which is in the floor of the valley. To the south of the site, buildings were at some distance, but there had been some grading of the ground. To the west was a sports building with metal features close by, To the north was a modern teaching block with a car park, to the east was housing, but in what was considered to be the older portion of town, before the mediaeval market area was appended, some 500 m east of the minster church. Magnetically, the site was very noisy. The output is shown in figure 3.7. This plot has been processed heavily to remove as much clutter, but the north-west portion proved irredeemable.

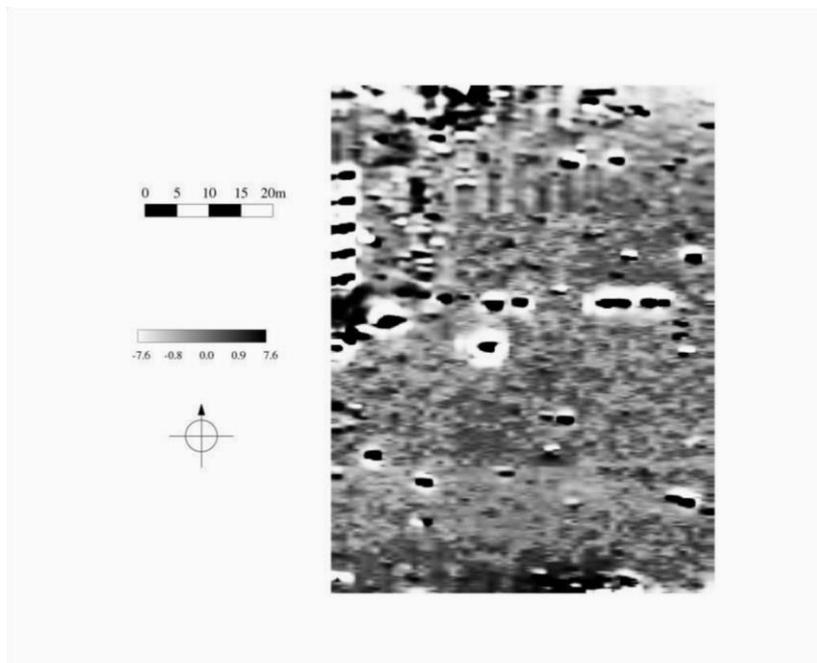


Figure 3.7. Magnetometry results from Byne Paddock, Warminster School.

There is a possible cluster of post holes just north of centre, centrally at the south end, and just to the north-east of these. These are shown in figure 3.8 encircled by purple lines. There are possible circular features going off plot in the north-east area, indicated within the brown cordon. This could represent a cluster of round houses.

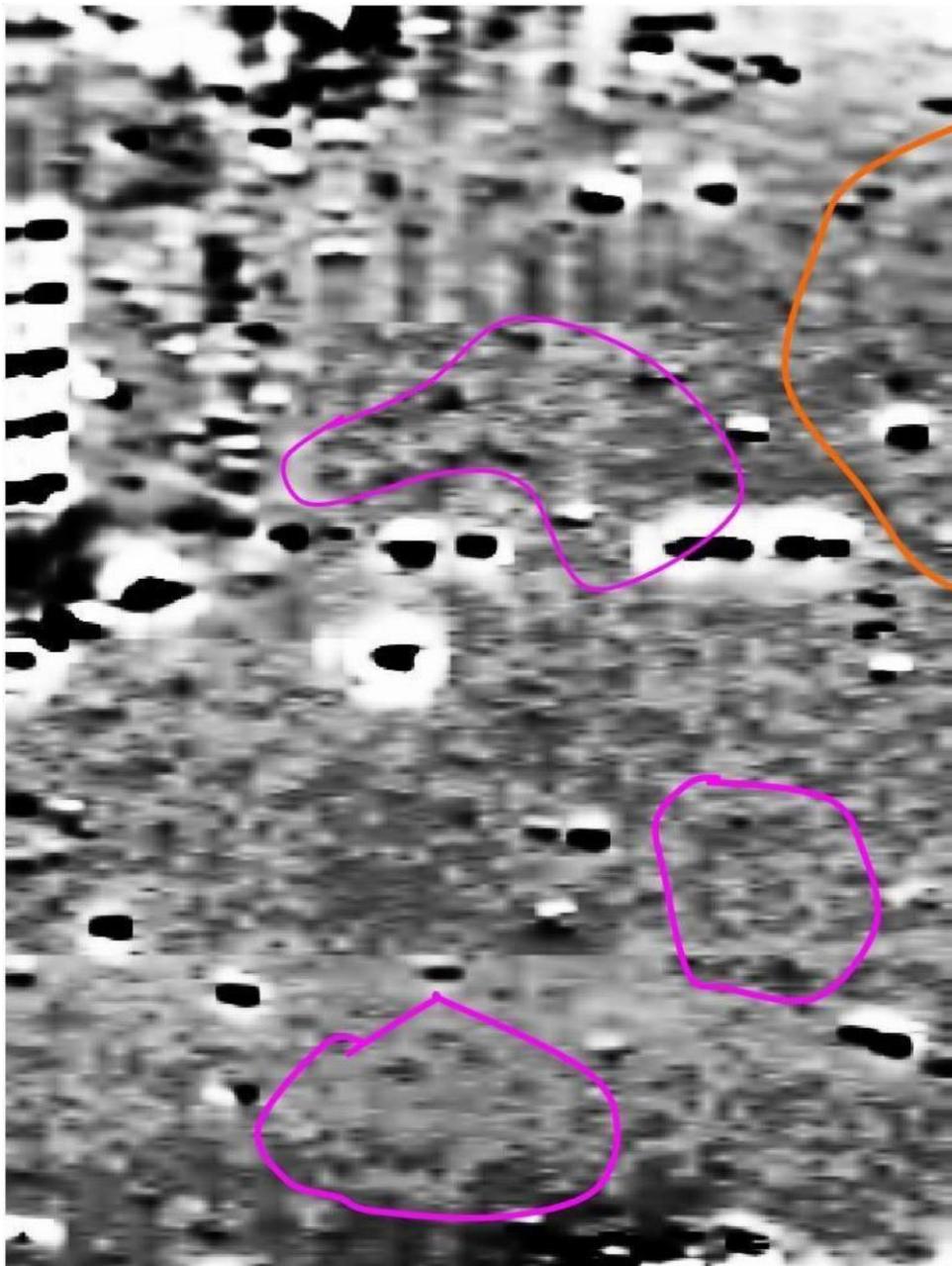


Figure 3.8. Magnetometry interpretation for Byne Paddock, Warminster School. scale the same as figure 3.7.

3.3.2 Resistance

The survey was repeated with resistance, but the far north-west grid was not included. The plot is shown in figure 3.9. There is a short high resistance feature at the north of the plot. This is likely to be modern, given the amount of building works around. There may be a wall feature along the west side, but this, as most of the contrast may just be due earth workings to level the field for sports. Some residue of white line markings can be seen. There is a low resistance feature on the west, and possibly also a rectangular feature in the centre of the surveyed area, but it is faint.

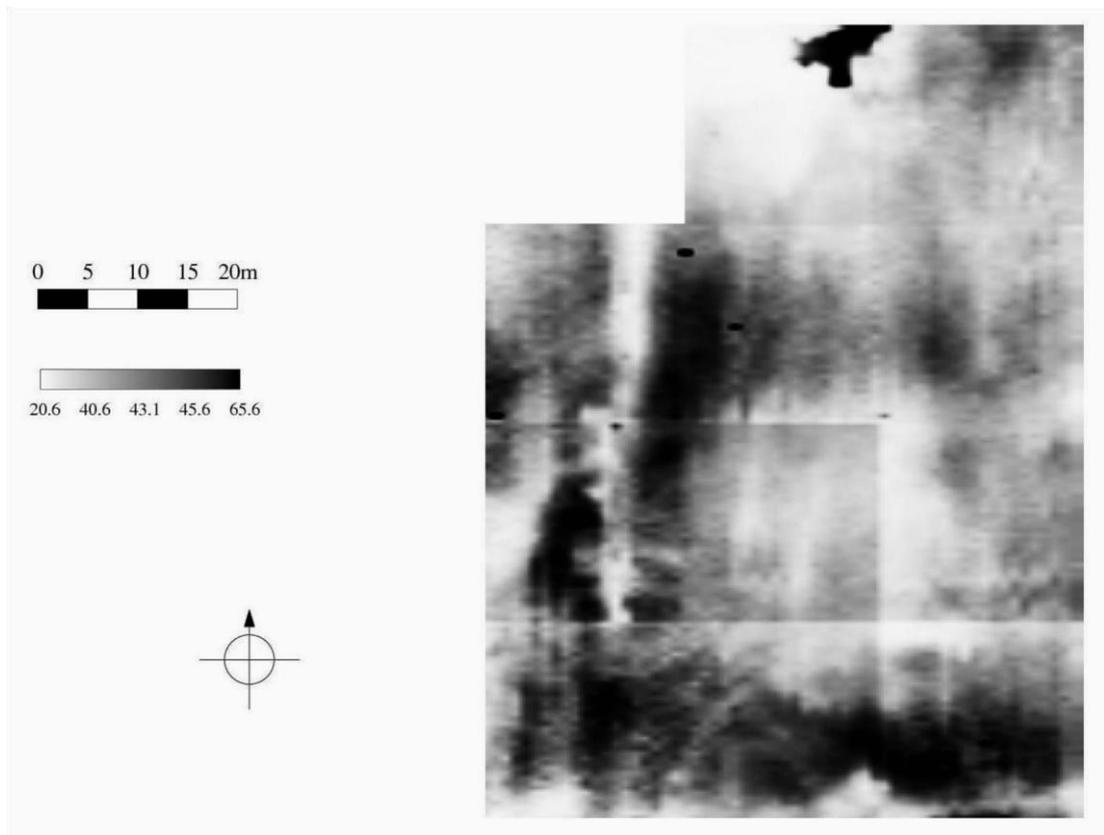


Figure 3.9. Resistance survey, Byne Paddock, Warminster School.

3.4 Preparatory School ST 8685 4495

3.4.1 Magnetometry

The site was behind Warminster School Preparatory School, some 300 m south-east of St Boniface Meadow. Again, it was on slightly raised ground, off the valley floor, and again there were signs that the site had been graded to produce a level playing field. To the south and west were houses, with metal fencing and furniture, to the east were tennis courts with wire surrounds and to the north were modern teaching blocks. Again, the site was very noisy magnetically.

Figure 3.10 shows the magnetometer plot, which has received significant processing to tidy it up enough to make any archaeology visible. There are possible circular post-hole structures in a cluster just south of the centre (marked by the cricket square) and just north of the major curving ferrous pipe. There may also be a circular feature just north of the cricket square. These are circled with purple. There are very faint possible curving boundaries in the north part of the plot, marked in brown, as annotated in figure 3.11.

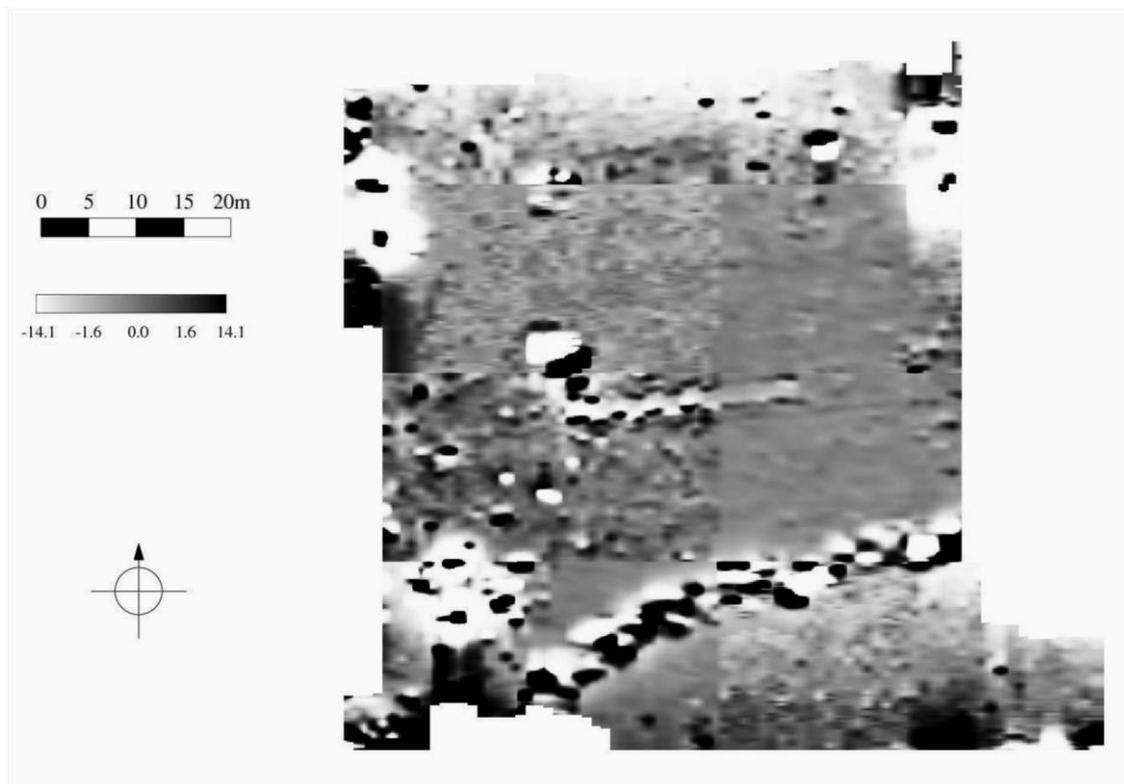


Figure 3.10. Magnetometry plot, Warminster Preparatory School.

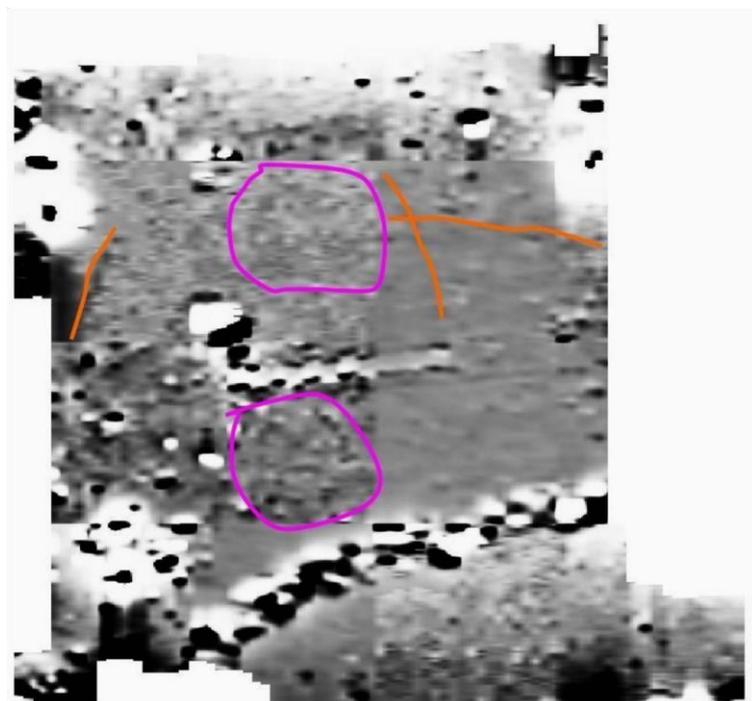


Figure 3.11. Annotated magnetometer plot, Warminster Preparatory School.

3.4.2 Resistance

The resistance plot is shown in figure 3.12. There is a low resistance feature heading north-east across the western portion of the plot which may represent a ditch. Other low resistance features are so sharp, they look modern. Sports white line residue is again

evident, and other contrast in the plot is most likely due to earth workings to make the field fit for sport.

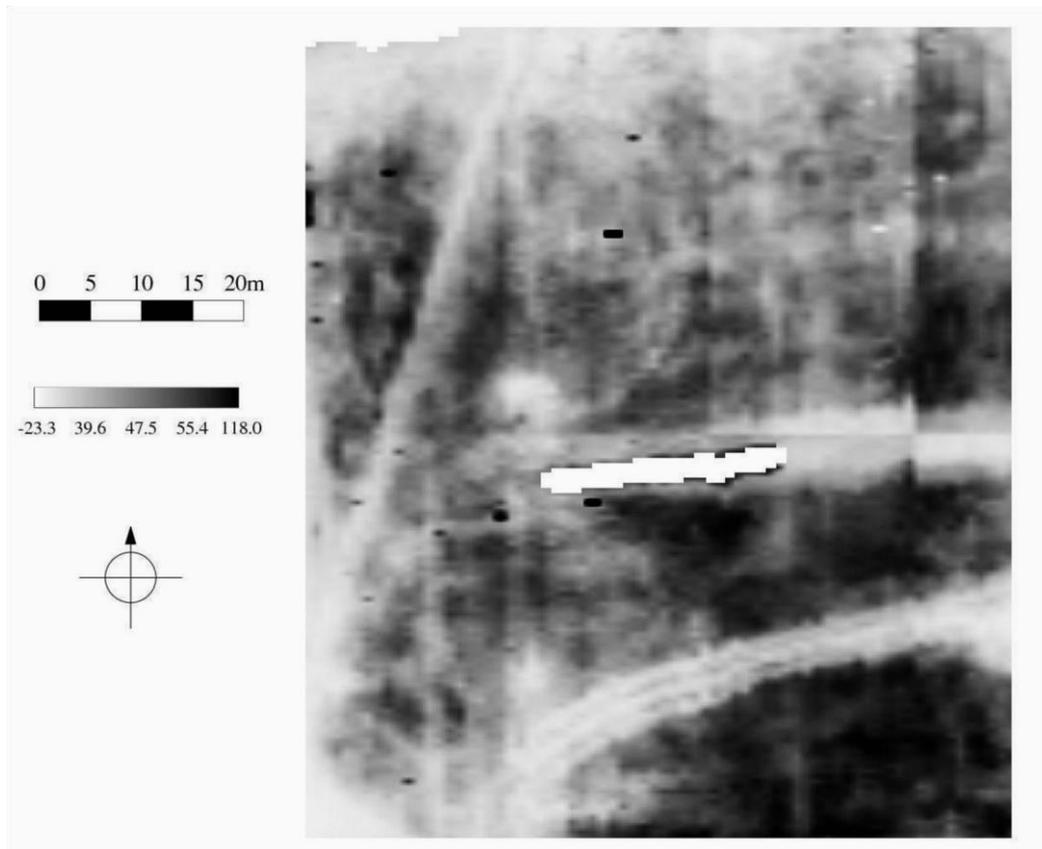


Figure 3.12. Resistance plot for Warminster Preparatory School.

3.5 The Minster Junior School playing field ST8698 4495

3.5.1 Magnetometry

The field was just behind the tennis courts from the Preparatory School field, so only some 30 m further east, but was part of a different establishment. The area was approximately rectangular with another rectangular annex to the west, to the north of the tennis courts. Again, there were signs of grading, particularly along the southern and eastern edges. The ground at the northern end sloped down to the north, towards the school buildings. To the south was an industrial building and there were domestic gardens to the east. There was significant ferrous interference in patches. The western annex was most heavily affected.

The output plot is shown in figure 3.13. There are possible curving features in the western annex but the amount of ferrous interference makes them dubious as archaeology. A line heading north-west in the northern portion of the main field may be of significance, but it heads directly into a large ferrous mass. There are faint signs of circular post-hole structures in the centre, shown encircled in purple in figure 3.14.

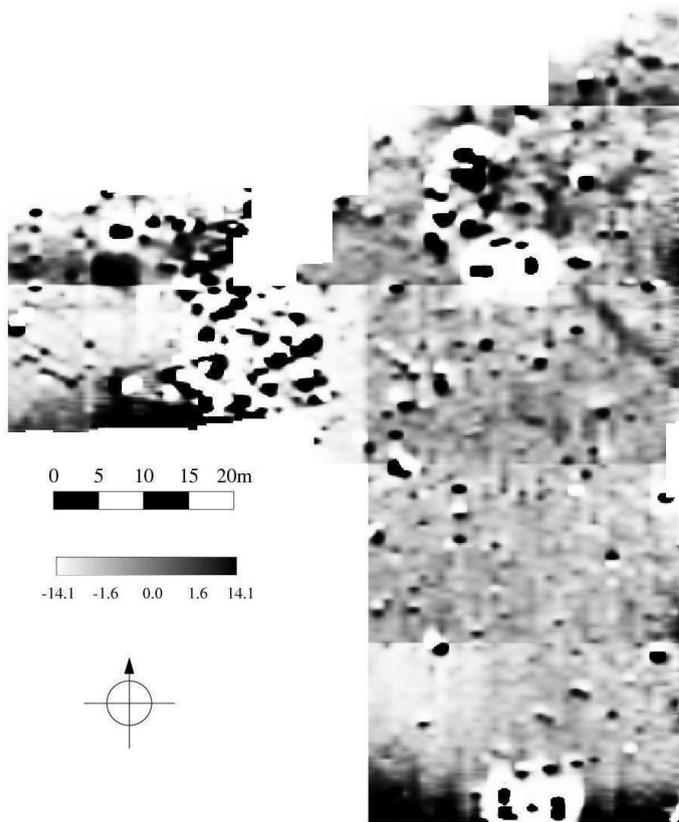


Figure 3.13. Magnetometry plot. The Minster Junior School.

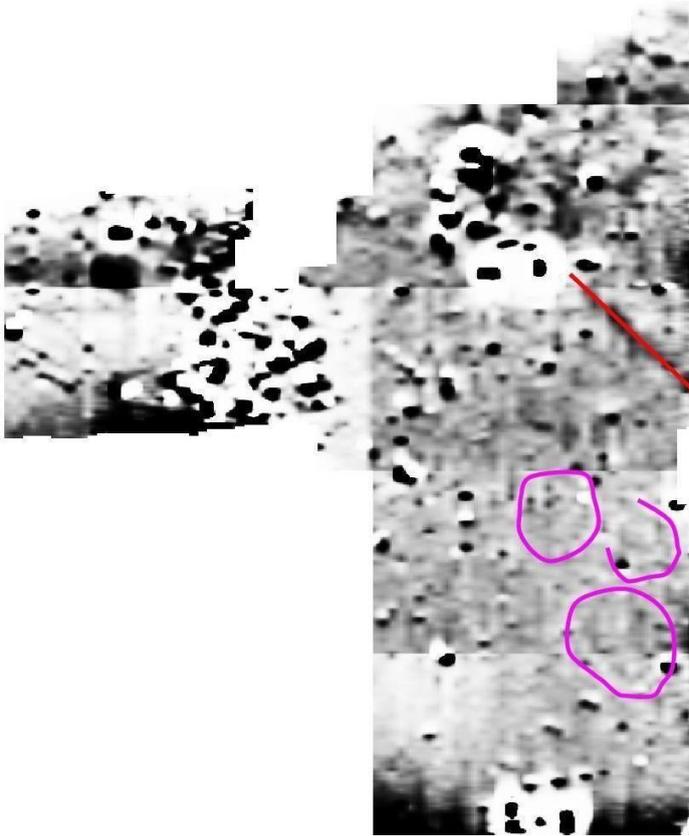


Figure 3.14. Magnetometry plot, The Minster Junior School, with possible features marked.

3.5.2 Resistance

The plot is shown in figure 3.15. There is a possible round feature corresponding with one of the circular features in magnetometry at the centre of the field. There is a circular patch of low resistance in the north-east corner. Also to the north-east, on the edge of the plot are signs of a high resistance feature just starting, but this may just be the edge of grading operations. The large bands of high and low resistance in the western annex combine with the ferrous interference observed in magnetometry to suggest that the western annex has been worked over sufficiently to obliterate any archaeology.

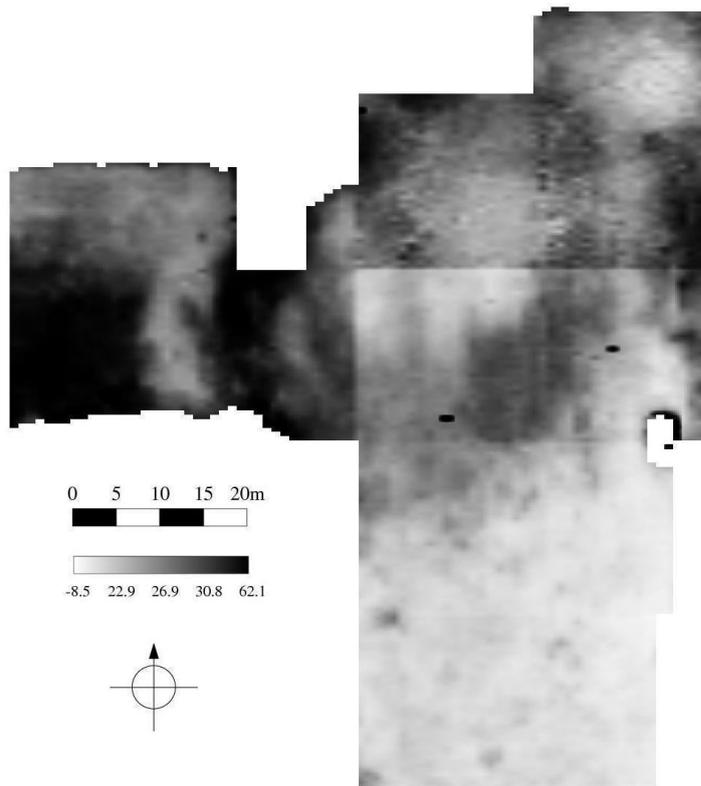


Figure 3.15. Resistance plot ,The Minster Junior School.

3.6 Old School House Lawn - ST8698 4541

This area was too small and enclosed to consider a magnetometer survey, so was only subject to resistance measurement. The output is shown in figure 3.16. There is a possible wall and a well on the western side. There is a possible rectangular structure in the north-east portion, measuring at least 12 m by 8 m, with internal circular and linear features. There is also a wall at the southern end of this heading off west under the other features, suggesting the features here are of different dates.

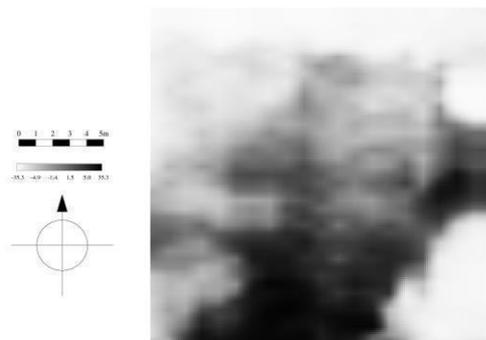


Figure 3.16, Resistance plot. Old School House Lawn.

3.7 *Ivy House Lawn ST86824515*

This site too was too small to admit of magnetometry. There was a second lawn further to the west, but lack of sightlines made this impossible to add to the main survey. The plot is shown in figure 3.17. There is a low resistance feature, probably a ditch, on the west. There is a curving feature of high resistance forming a loop under the centre of the lawn. Given the location of the site, it is most likely that these relate to earlier phases of the garden.

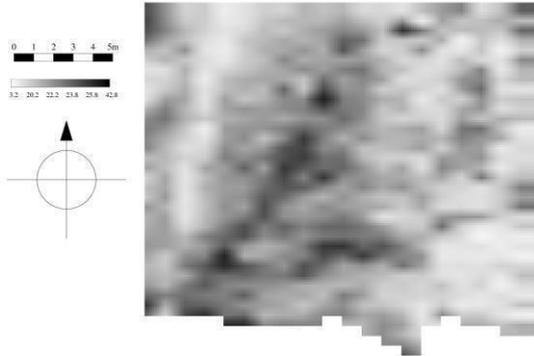


Figure 3.17. Resistance plot. Ivy House Lawn.

3.8 *Sambourne ST8609 4502*

This was a raised triangular portion of land jutting out towards the centre of the town on its eastern side, just to the south-east of the Minster School playing fields. The main road to the west was some 5 m lower in level, and there was a path on its eastern side, some 3 m below field level. An ancient wall survived in section by this path, heading into the field but at some considerable depth below field ground level. The southern boundary was marked by a housing estate. The field was subject to magnetometer survey only. The results are shown in figure 3.18. The field was very noisy magnetically and it was not possible to discern any archaeological features with any confidence.

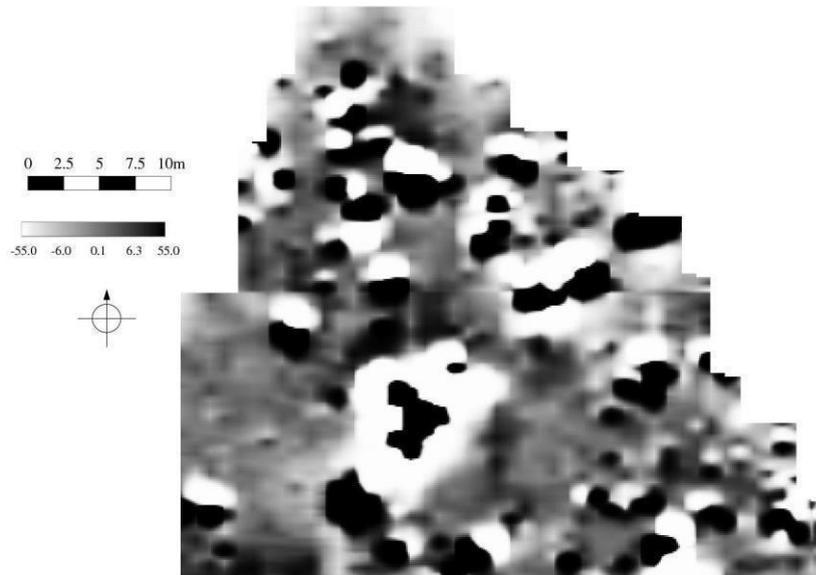


Figure 3.18. Magnetometry plot. Sambourne.

3.9 Church Car Park ST8685 4561

3.9.1 Resistance

This was immediately west of the churchyard. The ground was at a significantly lower level than the churchyard. The grassy margin on the western side of the metaled area was subject to resistance survey. One of the partial grids was significantly degraded by an error in following the grid, so this has been discarded. The output is shown in figure 3.19. This area was covered by four grids forming a square. It has also been re-plotted in XL using a linear resistance scale to give greater clarity. This plot is shown in figure 3.20. A rectangular structure can be seen on the west side, heading off under the hedge line.

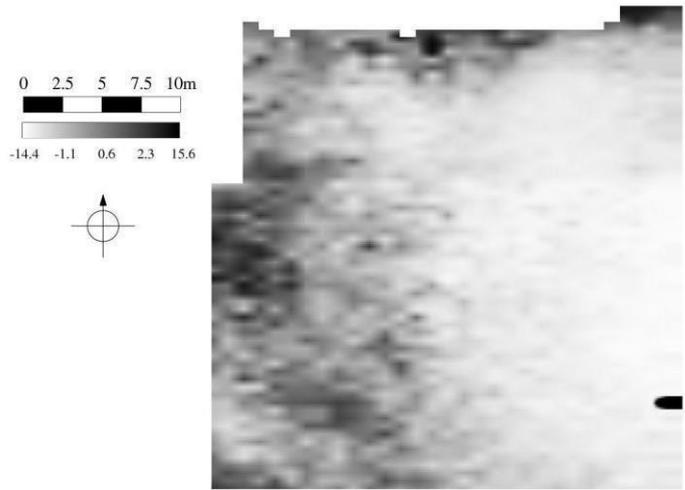


Figure 3.19. Grass to west of church car park. Resistance survey only.

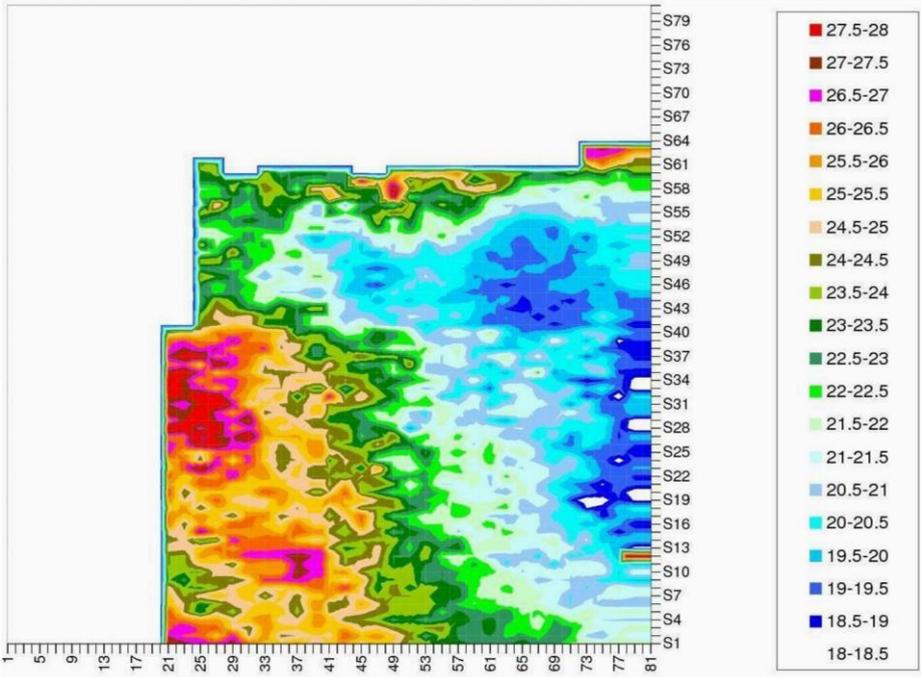


Figure 3.20. Grass to west of church car park. Resistance survey re-plotted using XL, with linear scale. The red area appears to be the eastern end of a building.

During a supplementary day's work in July, the small grassy patch on the south-east corner was also subject to resistance survey. This is an area where an earlier map had shown signs of a building. The plot is shown in figure 3.21. There is an area of higher resistance on the east side of the plot, and this may be showing part of a building, although it may represent material dumped near hedge lines.

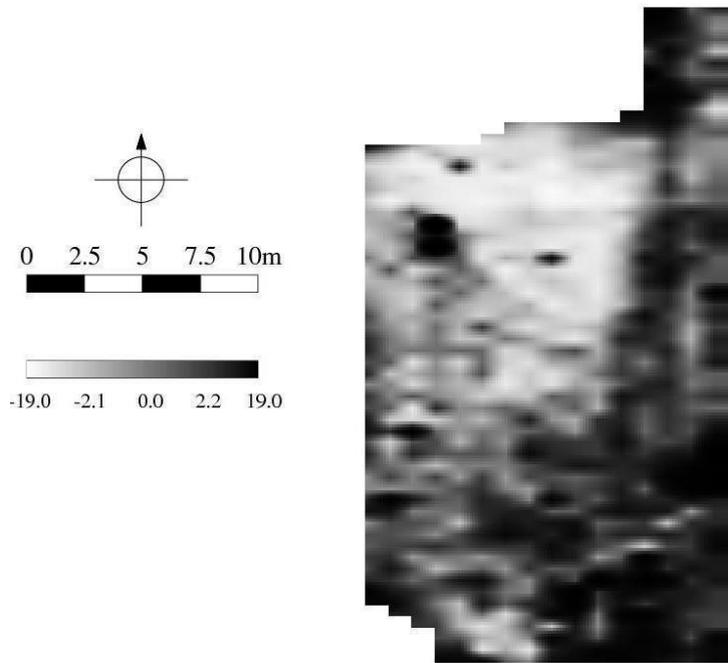
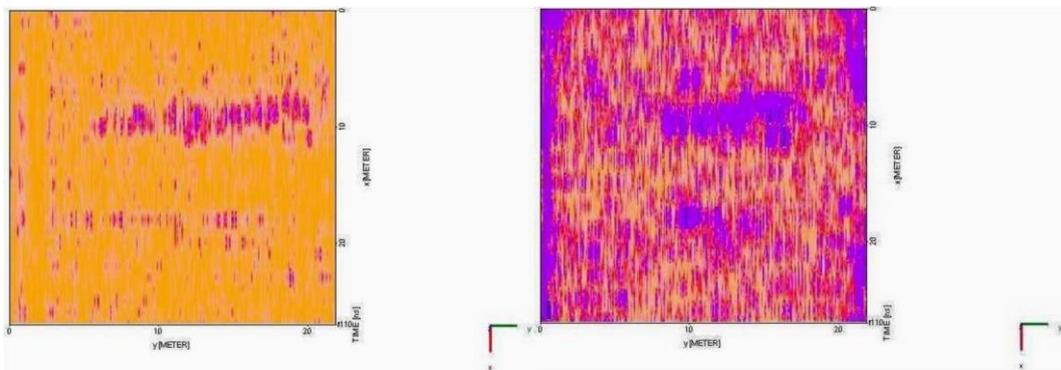


Figure 3.21. Small grass area just east of driveway to car park. Resistance survey.

3.9.2 Radar

Radar was towed over the main portion of the graveled surface of the car park, forming an area of 28 m square. This showed two possible strong linear features oriented northsouth. Slices for the car park area are shown in figure 3.22 at nominal depths of 0.18 and 0.68 m. There are traces of the larger feature extending beyond 1 m in depth. Note that these depths are nominal only, not calibrated, assuming a wave speed of 0.06 m/ns. This note also applies to figure 3.23.



(a)

(b)

Figure 3.22. Radar depth slices at (a) 0.18 m nominal and (b) 0.68 m nominal under the car park hard standing. N.B. North is to the right.

The small grassy area on the south-east of the car park was also subject to radar survey as this was believed to be the site of a building shown on the title map. Some faint traces were observed. These are shown in figure 3.23, which includes depth slices for 0.3 and 0.68 m nominal depth. This area was subsequently surveyed by resistance (see above, section 3.9.1, second paragraph).

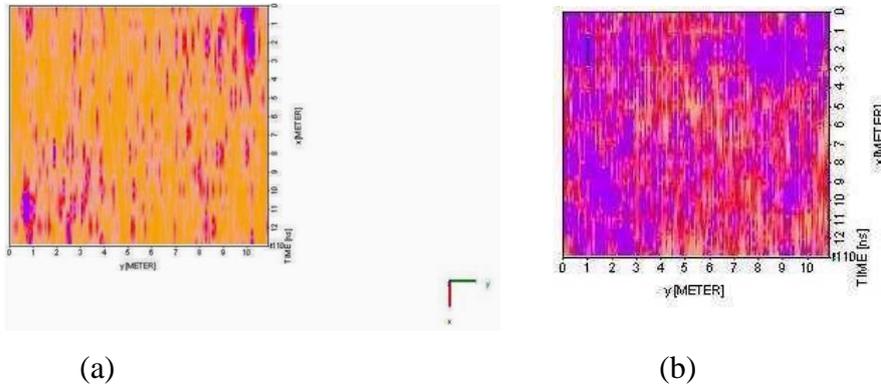


Figure 3.23. Radar depth slices of the grassy area just west of the driveway into the car park. (a) 0.3 m nominal, (b) 0.68 m nominal depth. N.B. North is to the right.

3.10 Churchyard ST8692 4551

A single 20 m square was surveyed in the churchyard, immediately north of the crossing. This square was much interrupted by graves and bushes but sufficient area could be surveyed to observe any possible features. This was the only area of the graveyard which could sensibly be subject to survey and only resistance was used. Note that the ground sloped down to the north from the church, and in the western portion of the square, there was a distinct step down in ground level.

The output of the square is shown in figure 3.24. There is a feature of higher resistance occupying a space about 5 m square on the west side of the square, mid distance. It forms three sides of a rectangle but with an indeterminate west side. The high resistance areas do not coincide with obvious graves, so it is likely that it is a distinct feature rather than grave edges, but it is not possible to say whether it the remains of a much earlier structure or a more recent buried building such as a small crypt.

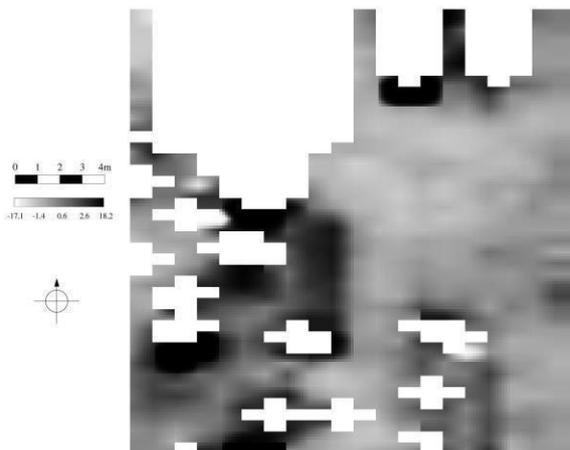


Figure 3.24. Resistance survey of 20 m square in churchyard, immediately north of the church. The black lines on the eastern part suggest a possible building.

Figure 3.25 shows the whole area of church, graveyard and car park so that the relative locations of each can be seen at a glance. Note that each resistance and radar plot here has a differing colour scale, so that no attempt should be made to correlate features by colour, but on the whole, the deeper the colour, the stronger the feature. Note that the surveyed area of the graveyard is significantly higher, perhaps by 3 m, than the car park areas.



Figure 3.25. Overhead view, showing resistance survey in churchyard, and resistance and radar surveys in church car park. The features here are lower and well separated from the church.

3.11 Warminster School Playing Fields ST8671 4531

This area became available for survey later and a magnetometer survey was carried out on a supplementary day in July 2014. No resistance survey was carried out: the area would have required more time than was available. Two grid squares had to be omitted as these contained the cricket square, which was undergoing restoration, and much metal machinery needed to support that restoration.

The area is best studied in conjunction with section 3.1 of this report. The area was flat valley bottom on the north side of the Were stream, some 1 m above stream water level. There was no evidence that the area had been deliberately graded to provide a level sports surface, however, there was a lot of interference from ferrous objects around the edge of the ground and also within the ground. The grid squares were kept 5 m away from boundaries to reduce these effects around the edges.

Even allowing for ferrous interference, the field appeared to be lively with archaeology, as shown in figure 3.26. Some large ditches in the south-west appeared to be from different dates as they over-cut each other. To the north of this were fainter effects which appear to be from ploughing. Strong signals on the north of this ploughing may indicate

buried structure, but this could be modern and it is near an area of massive interference. Elsewhere, there appears to be a sub-rectangular Structure to the east of this, a number of curving ditches, an area of round structures, possibly round houses, areas of possible post holes and a number of pits. These are annotated in figure 3.27.

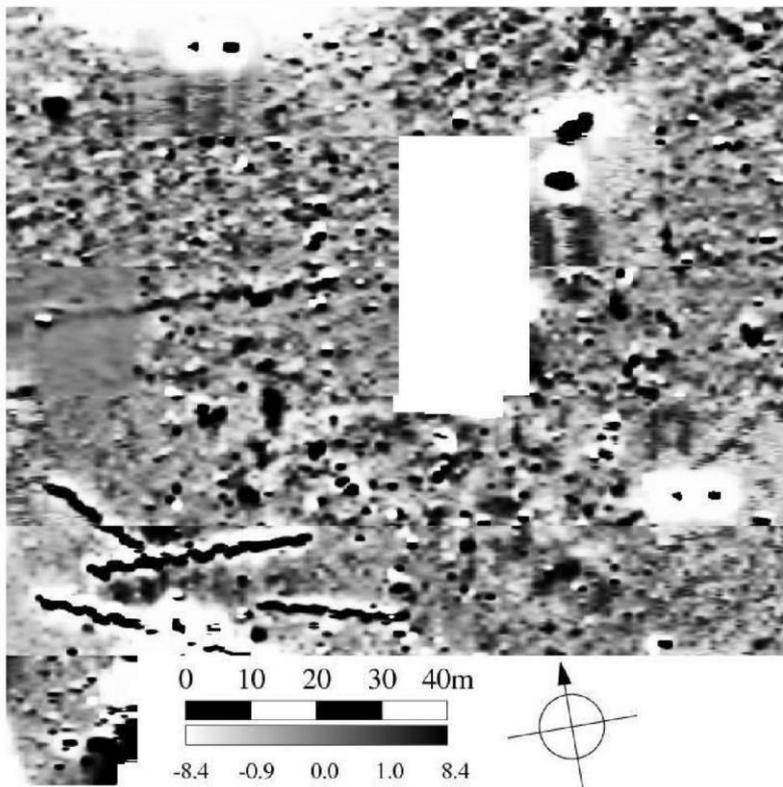


Figure 3.26. Magnetometer survey of Warminster School Playing Fields.

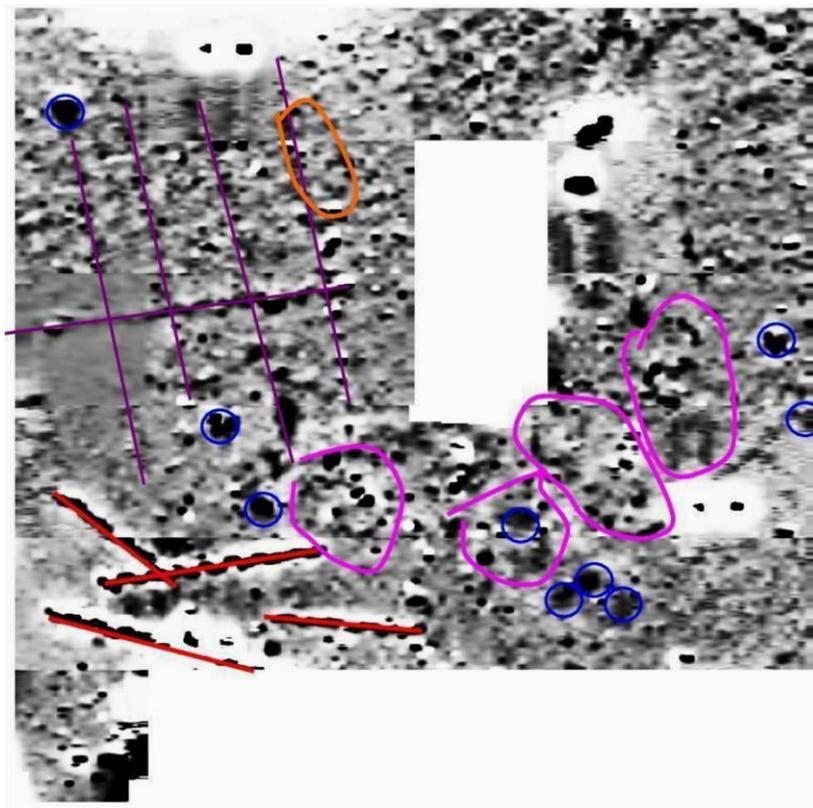


Figure 3.27. Annotation of magnetometer survey (figure 3.26), showing areas of possible hut circles in purple and possible building in brown. Thin lines in purple are possibly from ploughing, red lines are of uncertain date. Blue circles indicate pits,

4 Discussion

4.1 Early settlement

The areas investigated were scattered widely over the northern portion of the town in the vicinity of the Minster Church. However, each individual area was quite small, so the exercise amounted to sampling the landscape rather than a large scale survey. On a number of the sites the surface of the ground had already been disturbed in some way including grading to level playing fields or general disturbance from building works.

Other geophysical surveys have been conducted in the vicinity and results from these may be incorporated into the discussion as support, but this document will concentrate on the results obtained from this exercise.

The late addition of the playing fields to the area surveyed provided significant extra information and was a worthwhile exercise.

Figure 4.1 shows the archaeological features detected laid out on an aerial view of northern and western Warminster. This is further developed in figure 4.2 which marks out areas of possible round houses and possible rectangular features. It is also understood (Sabin and Donaldson, 2012) that features were found by geophysical survey a little to the west of St Boniface Field. These appeared to show Roman enclosure features but not individual structures. Other unspecified fieldwork in the area to the north of the church car park apparently yielded no structures.



Figure 4.1. Overhead view of the north part of Warminster, showing the annotated geophysics surveys in their locations



Figure 4.2. Overhead view of the north part of Warminster, showing areas of possible hut circles in purple, and possible buildings as red rectangles.

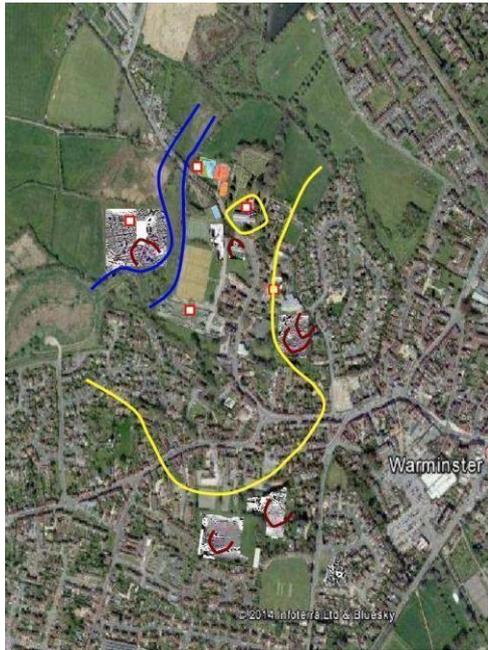


Figure 4.3. Overhead view of the north part of Warminster, showing possible areas of round houses (purple) and houses (red) in relation to the flood plain. The Were Stream runs between the blue lines, but only the areas in or behind the yellow lines are sufficiently high to be clear of normal flooding.

Figure 4.1 shows only a small portion of Warminster, to the north and west of the present and medieval town centre; it is evident from this figure that only a small portion of the area was sampled. Haslam (1976, 1984) argued for extensive investigations in north Warminster to try to locate areas of Saxon settlement. However, these were the only sites available, and this highlights a problem of the survey; its inability to provide a coherent picture, but only disparate sections.

Another useful piece of evidence is also lacking: the relative height of the various locations surveyed. Admittedly, even an Ordnance Survey map would not normally contain the detail required in 10 m contour lines, and neither could available LiDAR. However, heights are important here, particularly in comparison with stream level. Some of the areas surveyed, particularly the Warminster School playing fields, were within a couple of metres of the Were Stream, and that at summer levels, and it is surprising that so much activity was detected there. Other lands within Warminster School, Ivy House and the Minster Church car park were a little higher, whereas Byne Paddock and sites in the Preparatory and Minster Schools were on terraces well above the flood plain. Relative heights above the stream are sketched in figure 4.3. This demonstrates how the church sits on a small mound above the surrounding land.

It is not possible to provide dates for any of the rectangular structures. They could be anything from Roman to modern. The structure immediately next to the church will be discussed in the next section.

There was no obvious sign of post – Roman structures from any of these surveys, but some of the features observed could date from that period. The principal type of occupation observed would rather more suggest prehistoric occupation.

The possible round house locations appear to range from the flood plain up on to the safety of the terraces, but they seem to cover a wide area, especially given that only small portions of the town could be sampled. This would suggest a high population density in prehistoric times. This possibility is reinforced by the number of hill forts which overshadow Warminster, but there are no other equivalent accessible areas to investigate to gain further evidence.

4.2 Early church

Interest in the early church site was sparked by claims of 19th century discoveries of skeletons beyond Warminster School (Dicker and Charlton, 2013) and these had not been dated. The prime evidence for any earlier church lies in the immediate vicinity of the minster church itself.

The Minster Church sits on a low knoll. Although graveyards tend to rise in height over the centuries, present floor level at the church corresponds with the top of the knoll. The church in its current build is late nineteenth century. It is possible that prior to rebuild, floor level could have been lower, and that is an area worthy of research, but this would still leave the church raised on a knoll.

The graveyard immediately around the church is very crowded with monuments and it would be very difficult to perform detailed survey here. We were able nonetheless to set up one 20 m survey square for resistance immediately north of the church. This Area had a raised rectangular platform (figure 4.4) towards the church, and this platform dropped off suddenly to the north and the east. The results were discussed in section 3.10 and shown in figures 3.24 and 3.25. There appeared to be a small structure, some 5 m by 5 m, rectangular but indeterminate to the west, possibly with an internal wall. This did not correspond with the graves in that area, so is unlikely to be masonry associated with them. It is most likely either a crypt or an earlier church building. It might be possible to deduce more about it from resistivity profiles, but this is about the only technique which could be used in such a disturbed area.



Figure 4.4.
Raised platform on the north side of the church. Resistance survey here indicated a possible building.

The church has a number of early features which need exploring in

some depth to see through the late 19th rebuild. There are two early photographs of the church pre- restoration, one of the interior and one exterior view. These indicate a number of substantial changes, including the lengthening of the nave. The crossing and central tower remain as earlier features, and the south chancel chapel appears to be fifteenth or sixteenth century. It is not known if there are any earlier masonry features under the crossing floor, but it might be possible to detect them by ground penetrating radar survey.

Another earlier feature carried on from the earlier build is the curious polygonal stair tower, which is detached from the central tower. Bell ringers have to cross from this stair tower to the belfry over a bridge structure. The stair tower stonework looks to be in new condition, but includes a small early round-headed window. This would appear to be a Victorian restoration of an earlier tower. The tower now protrudes from the organ chamber (figure 4.5) but this is also probably part of the Victorian rebuild. The old photograph shows the organ originally in a west end gallery.

Immediately to the north of the crossing, on the east wall of the north transept is the door to the polygonal tower. This cuts into a blocked earlier archway (figure 4.6), and a small round-headed window is set in this infill. Pevsner (1963) dates this feature to the twelfth century, but the form of the arch looks earlier, either tenth or eleventh century. Given the strange disposition of these features, it is likely that they are not in their original locations and have been assembled there as quaint antiquity during the Victorian rebuild. However, they are certainly architectural features of the earlier church.



Figure 4.5. Polygonal tower protrudes from the organ chamber, just east of the north transept. The small, round-headed window is early, but may not be in its original location.

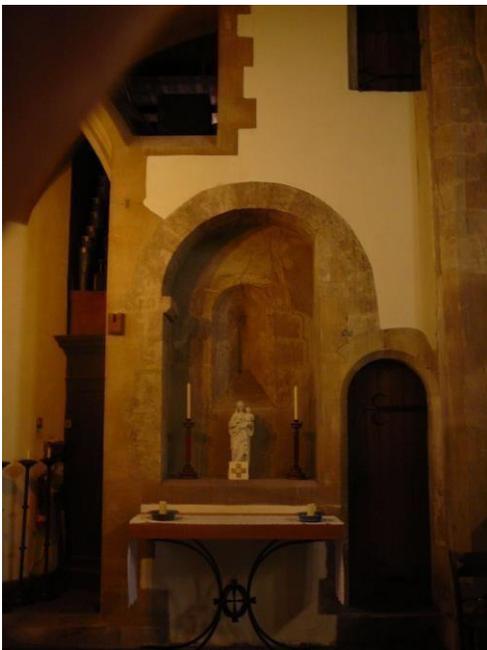


Figure 4.6. Early archway, possibly tenth or eleventh century, now set in west wall of north transept. The polygonal tower rises immediately behind it.

These combined geophysical and architectural survey observations are not enough to form a complete and coherent case for the earlier Minster Church being either under the present structure or just to the north of it, which remains the most likely setting.

There is considerable potential for work by a standing buildings archaeologist, initially with a search through diocesan archives, followed by a detailed survey of the church fabric, particularly around the crossing.

4.3 Site conclusions

Prehistoric

There are some 3,300 structures in England, Scotland and Wales which have been loosely classified as a hill fort or defended enclosure, with the majority of these hill forts concentrated in central southern England (Cunliffe 2004: 347). Their origins can be traced to the causewayed enclosures of the early Neolithic at sites such as Carn Brea, Cornwall and Crickley Hill, Gloucestershire, but it was not until the middle to late Bronze Age that an increasing number of sites are protected with ramparts, ditches or palisades as at Norton Fitzwarren, Somerset and Rams Hill, Berkshire (Dyer 1992: 47). By the early Iron Age such sites dominate the landscape of Wessex, the Cotswold Hills and the Welsh Marches.

The suggested use for these forts range from defensive enclosures, to local centres of redistribution and important religious and tribal centres (Millet 2005: 26). Some are too small to suggest permanent occupation and short term or seasonal activities are likely (Dyer 1992:51). Excavation at sites such as Bury Wood camp in Wiltshire, and more recently geophysical surveying at Little Solsbury Hill in Somerset, have provided evidence for permanent settlement in the form of roundhouses, these being clearly visible despite the overlying earthworks created by later medieval cultivation (Corney 2012: 3). It is the proximity of these enclosures to earlier monuments that suggest a long and complex relationship of settlement and occupation within the landscape. The town of Warminster is surrounded by three prominent hill forts including Cley Hill, Battlesbury and Scratchbury Camp, as well as funerary and other monuments of Neolithic and Bronze Age date within the immediate vicinity.

From the middle of the first century BC significant changes in settlement types become apparent, initially in the south east of Britain but spreading westwards, which suggests the intensity of occupation in hill forts diminished as a result of social and economic change occurring shortly before Caesars' conquest of Gaul (Cunliffe 2004: 63).

New patterns of diverse focal settlements came into existence which were closely associated with river valleys (Millet 2005: 26) and evidence of this change can be seen in the Thames valley of Oxfordshire, where new types of settlements are established on the upper and lower gavel terraces. These sites included self-contained hedges and ditched enclosures, with funnel entrances on the first terrace, and communally operated settlements with separate areas for storage and domestic occupation on the second terrace, a scatter of short-lived seasonally occupied sites were established on the floodplain to exploit the summer grazing (Haselgrove 1999:120).

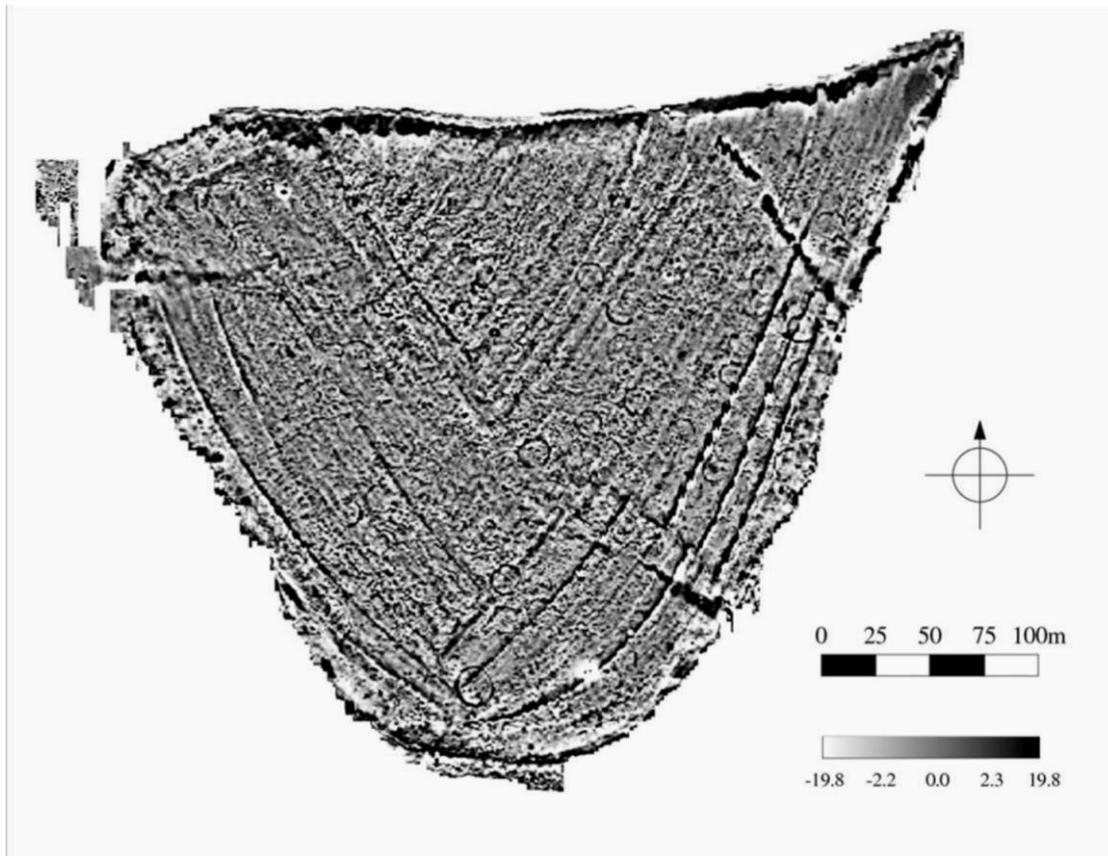


Fig 4.7 Magnetometer results Solsbury Hill Camp results copyright Oswin and Beuttner 2012.

At Heytesbury, approximately 5km south-east of Warminster, evidence of dense concentrations of prehistoric settlement type features have also been located, including large quantities of late Iron Age pottery, along with animal bone and other cultural material. The large and as yet undated earthwork enclosure at The Bury, Bishopstrow may also be of late Iron Age origin. This evidence suggests the presence of settlements on the valley floor and terraces immediately prior to the Roman conquest, and make it a strong possibility that a similar type settlement may have existed within close proximity to area around Byne Paddock, Warminster (Heaton 2002: 6), south of the present day minster church.

It is possible that evidence of settlement activity may also be suggested close to the lower school playing fields at Warminster School, which is close to the Were Stream, possibly indicating seasonal occupation. Other areas within or close by to Warminster School, including Ivy House and the church car park are on higher ground, whereas Byne Paddock and sites in the Preparatory and Minster Schools are on terraces which are well above the flood plain, these relative heights above the stream are sketched in figure 4.3.

If confirmed through excavation, these features may prove to represent the earliest evidence of settlement in the area close to the Were and that the overlapping nature of these possible features located through the survey also suggest the continuous rebuilding over time of individual dwellings, although evidence of this frequent rebuilding may exaggerate the density of occupation and size of a community, (Haselgrove 1999:117).

Further supportive, although sparse evidence from this particular period can be found in the finds which include small numbers of flint artefacts located north of the present day minster and approximately 10 metres east of the Were, along with a single sherd of possible Iron Age/Saxon pottery. Finds at Furnax Lane included an Iron Age pit with Early-Middle Iron Age sandy, flint-tempered and shelly pottery sherds. A single piece of prehistoric flint tempered pottery has also been located through field walking at Cold harbour, some 500 metres west of Warminster School along with a large quantity of Romano British pottery, all of which are close to the study area.

However, it is the discovery of a single sherd of grog-tempered pottery dated to the late Iron Age/ early Roman period from a globular jar during a single trench evaluation at Byne Paddock, which seems to be the most significant piece of evidence. Though this find was isolated, its large size and unbraided state in the highly abrasive sand soils suggest that it has not been moved far from its original deposition and may indicate the presence of previously disturbed deposits of late Iron Age/early Roman date close by but not within the area excavated, similar to Heytesbury (Heaton 2002 :6).

Iron Age/Roman

The presence of late Iron Age settlements near rivers such as in the upper Thames Valley of Oxfordshire and closer to Warminster on the Wylve valley floor at Heytesbury and The Bury, Bishopstrow, are examples of these new focal settlements closely associated with river valleys during this period of increasing change. The sheer density of settlement and land use in Wiltshire during the Roman period, suggests that there was a degree of continuity in the countryside from the Iron Age to the Roman period as settlements and their associated fields continued to be farmed (Draper 2006: 26; McOmish et al 2002).

Evidence of this pattern around the Warminster area can be seen in the extensive Romano-British settlement and industrial activity to the north and south of Westbury, notably at The Ham, Wellhead, and the evidence for pottery kilns at Short Street, Chapmanslade. The finds recovered from the Ham during the 19th century indicate extensive activity and occupation throughout the Romano-British period and it is possible that the settlement was located to exploit local mineral resources. At Wellhead, 2.5 km from the Ham, a settlement occupied from the late 1st century to the early fifth century AD produced evidence for weaving, tanning, and possibly iron smelting (Rogers and Roddham 1991:52).

The area around Short Street, Chapmanslade is rich with Romano-British remains and large quantities of pottery dating from the 2nd to 4th centuries have been recovered from surrounding fields, along with quantities of Romano-British CBM and pennant sandstone roofing material. The evidence suggests an extensive industrial complex including pottery production on the edge of a greensand scarp overlooking Dilton Marsh, close to clay sources (Corney, Charlton and Morris 2012: 5).

The fabric of the Short Street products is similar to many local grey wares encountered on Romano British sites in southern Britain and gauging the distribution of the products is far from straight forward. If marketing via the probable 'small town' at The Ham, Westbury is accepted, a minimum distribution radius of 20km may reasonably be postulated. Examination of ceramic assemblages from Romano-British sites within this

distribution radius has identified probable Short Street products; these include the villas at Blacklands in Somerset (11km; Lawes 2006: 25-26), St Algar's Farm, Somerset (Ceri Lambdin pers com) and Bradford on Avon (Mark Corney pers com).

Other Romano-British sites in the area, such as the villas at Edington (RCHME 1995; 9) Storridge (AC Archaeology 2002) and closer to Warminster, Pit Mead villa, Cold Harbour and Arn Hill have yet to have their pottery assemblages cross referenced with the products of the Short Street kilns, but may provide further evidence for the distribution of those products and their demand in the Warminster area.

Romano-British 'small towns' often developed as secondary settlements along preexisting Roman roads, with the size of these sites being largely due to the economic stimulus provided by the Roman road system (Hanley 2000:49). The evidence of industrial activity at Short Street and the Ham, Westbury and Wellhead provide valuable evidence to the density and longevity of Roman occupation around Warminster, from the 1st to the early 5th century. Although no Roman road has been identified in the Warminster area, a route along the Wylde Valley from Soviodunum (Old Sarum) towards Bath is strongly suspected. The place names Cold Harbour and South Street give further support to this (Mark Corney pers comm 2014.).

The Romano-British finds found at Warminster include Romano-British pottery and building material located at Cold harbour, along with a dense scatter of coarse wares located north-east of Middle Hill (Collyer pers com 2014), as well un stratified Romano-British pottery and flue tile found in an 18th century cess pit in Portway, along with coins and pottery as well as Romano-British remains at Arn Hill and Mancombe Down (Crittall 1965: 91). Excavations at Emwell Street by Smith in 1979 recovered a small assemblage of Romano-British pottery as residual deposits, and the pollen spectrum from the lowest excavated layers indicated that within 50 metres land was being farmed during the Roman to early Saxon period (Smith 1997: 48).

The above evidence suggests a level of continuity from the Iron Age to the Roman period within the environs of Warminster, but as yet no firm evidence of an actual structure has been located close enough to The Minster to suggest the development of a Minster from an already established Romano British villa site.

Roman/Saxon

The archaeological evidence for continuity from Romano-British to Saxon is fraught with problems when dealing with the issues such as the transition from villa to farmstead and whether or not there is a break in Society during this period. This is primarily due to the fact that many diagnostic post-Roman artefacts are rare (although See Gerrard 2010 for the identification of 5th century Romano-British pottery production) and structural evidence often ephemeral.

There is no evidence to date to suggest that after the 5th century a sudden crisis plagued the Late Roman countryside and that it was farmed as intensively as it had been during the previous decades. Site finds such as coin and items of jewelry combine to indicate that Wiltshire, along with Somerset and Gloucestershire lay at the heart of the wealthiest area of Late Roman Britain, the province of Britannia Prima (Draper 2006: 35).

The presence of fifth century Anglo-Saxon burials and settlement activity at Market Lavington along with evidence of early Saxon sunken structures at Trowbridge, provide evidence that during this period a level of transition was taking place close to Warminster. Whether these were Saxon immigrants or the adoption of new ideas by local people is unknown. At Warminster, evidence of Saxon finds includes three Saxon axes found at Battlesbury Camp, and Saxon pottery at Boreham. A notable recent discovery is gold and crystal aestel from near Cley Hill found in 1997. An aestel is a manuscript pointer and Alfred, King of Wessex (871- 899 AD), sent aestels to all the Dioceses in his kingdom to accompany his translation of Pope Gregory's Pastoral Care. Only three others are known: the Alfred Jewel and the Minster Lovell Jewel in the Ashmolean Museum, Oxford, and the Bowleaze Jewel in the British Museum.

It was during the seventh century that we see the early signs of the establishment of Royal estates and administration centres which were closely associated with Minster churches which together, sought economic, social, and ecclesiastical control. It was these centres that were instrumental in the administrative running of England, including all agricultural production and the redistribution of local and regional goods. The discovery of the easel near Warminster may indicate the importance of the town and church in the middle Saxon period.

The closeness of these royal estates and the church can be seen in other Wiltshire towns from this period close to Warminster including, Calne, Wilton and Chippenham (figure 4.8), where the positioning of the church and royal estate closely connected to, and controlling the river, played an important part in sealing this powerful link between the church and state. As with Calne and Wilton the topography of the town of Warminster suggests the site of a royal residence with its immediate settlement lying around it. The church of St Denys is at the highest point of a raised area between two small streams and is closely associated with land previously named Warminster Court, which was once in the hands of the Lords of Warminster after the Norman Conquest by the Maudit family (Daniel 1879: 115).

Many of these early Royal centres and subsequent Minster churches developed around an earlier road system which may have served previous prehistoric and Romano-British settlements, and it was these roads that funneled internal and external traffic, enabling trade and later markets to establish at the gates of a church (Richards 2007:182). The influence of the church and its positioning is also reflected in the urban topography of the town, as some of these lanes near these early churches may have been originally laid out as processional ways and later used as part of the town's internal street system, such as Winchester (Schofield and Vince 2003: 196).

The continued use of earlier Roman roads linking these new ecclesiastical centres and towns can be seen in the work of the chronicler William of Malmesbury, who described the journeys of Bishop Aldhelm and his travels along these routes in the new diocese of Sherborne, which incorporated Dorset, Somerset and Wiltshire (Wright 1998: 51).

Evidence for a Saxon church exists in Warminster's case, but there is neither a charter nor an entry in the Domesday Book, for neither exist, but the place-name, first recorded in the late ninth or early tenth century, which, given the wide application of the word

'*mynster*' in the Saxon period, must indicate a Saxon church of some kind. (Pitt 1999: 66).

It is however possible, that the origins of the Minster church at Warminster may date to an even earlier period as the chronicler William of Malmesbury records the tradition that as Bishop of Sherborne, Aldhelm had preached at Bishopstrow, which was one of the constitute villages of Warminster hundred. Aldhelm is also noted for being concerned with the spiritual welfare of the indigenous (ie British) Christian population. These communities probably being direct descendants of the late Romano-British population, This may indicate that the naming and dedication of this church lies in an historic event and that Aldhelm may have founded a Minster Church at the centre of the estate of which Bishopstrow was part (Haslam 1984: 121).

The Royal manor.

By the 9th century, Warminster had become a royal manor and by the 10th century had achieved at least nominal urban status which is signified by the presence of moneyers in the town during the reign of Aethelred II. Under Saxon law, mints could only operate within a 'port' or town and it was still in royal ownership by 1086 (Draper 2006: 62), and from as early as the 10th century Warminster was describes as a royal residence and in Domesday it refers to its obligation to accommodate the King and his household for one night each (McMahon 2004: 5).

The majority of archaeological evidence for Saxon Warminster comes from the excavation undertaken by Bob Smith during 1979 in Emwell Street which located a series of drainage ditches, datable to no later than the mid-11th century. These had later become choked with domestic refuse later in that century and represented activity typically conducted at the rear of a property, and these features are likely to relate to a building which would have fronted onto what is now Silver Street.

Archaeological anomalies in the form of ditches, pits and post holes which are present on many of the survey areas, are however as mentioned earlier, difficult to assign to a particular date, but it is possible that some of the archaeological anomalies may relate to this later period, as the Domesday Survey of 1086, records a large rural manor with extensive arable holdings and seven mills.

It has been estimated that the population during this period was approximately 500 (Smith 1997: 4), with some thirty burgesses involved in a variety of crafts and trades, Although these would have lived on the royal demesne and may only have served the needs of the estate. It is therefore possible, that some of these anomalies may relate to this period, but without careful excavation it is not possible to suggest a date for these features anomalies.

The Minster

Where churches have been extensively excavated, a primary phase has often been revealed to comprise a simple one or two cell structure, constructed of wood or stone, such as the cruciform timber example at Potterne, Wiltshire. (Gilchrist 1999: 231). As these earlier churches evolved they were either encased in stone or re-built adjacent to it (Rodwell 1989:118). Excavations at Potterne revealed traces of what is believed to be a small timber chapel near the later stone church (Kerr 1983:54).

Excavations at Raunds, Northamptonshire revealed evidence of this primary phase which later changed from a single cell structure approximately 5 x 4 metres established around 875 -925, and later enlarged to two cells, re built and re-orientated in the eleventh century before falling out of use in the 12th century when a new church was established some 230 metres away (Gilchrist 1999: 231).

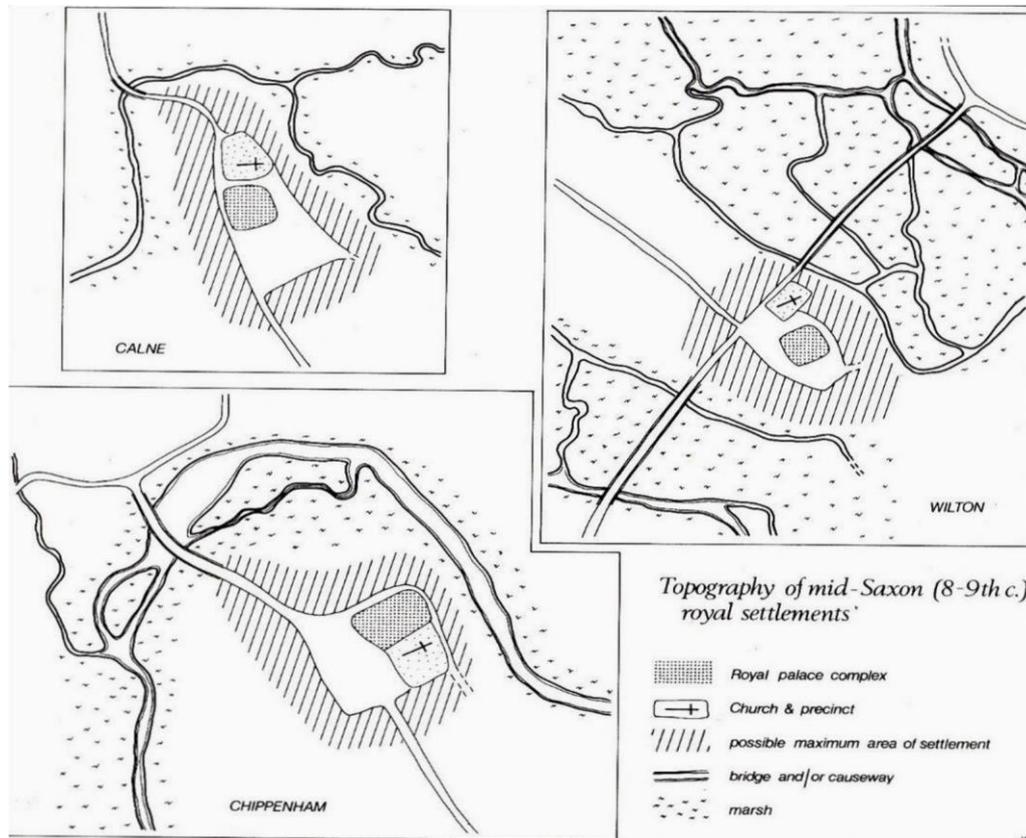


Fig 4.8 Reconstruction topography of some middle Saxon royal settlements in Wiltshire. Haslam 1985.

It is possible that the feature located north of the present day Minster Church by the resistivity survey could represent a number of possible structures including the east end of an earlier church, a separate chantry, an anchorite cell, or other chapel, associated with the main church. It is also possible that it could be the foundation for a groundlevel

bell-cage, a detached tower, a community building, such as a Guildhall or church ale-house or a Priest's house (Rodwell 2014 pers com).

Due to the fact that the area seems to have been displaced by 17th century graves, it may suggest a small chapel such as a chantry/guild/fraternity which was subsequently pulled down during or just after the Reformation, which might explain why the area is then later used for post-medieval burials (pers comm Roffey 2014).

4.4 Summary

There were two main aims of the survey described in this report. The first was to search for signs of pre-Norman Warminster using geophysical techniques on any spaces in the north of the town of sufficient area. The second was to look for signs of an earlier Minster Church and to establish its whereabouts.

Treating the second aim first, it is most likely that any earlier minster church lay either directly under the present building or immediately to its north, on the raised portion of the graveyard. Some further investigation using resistivity profiling or radar may possibly yield extra structural detail, but most benefit would probably come from a detailed study by an experienced standing buildings archaeologist.

The survey for earlier parts of the town was hampered by the paucity of areas suitable for geophysical survey remaining within the northern area of the town. Where features could be discerned, they appeared to show possible round houses, suggesting an even earlier phase of the settlement; Iron Age rather than Saxon, both on the dry terraces of the Were Stream and down on the flood plain. Conditions were not good for clear geophysics results allowing confident interpretation, as much of the terrain available was playing fields which had been graded to provide flat surfaces. Level playing fields for sportsmen tilt against fair conditions for geophysical archaeologists.

PREFACE

Mark Corney

The Warminster area is one of considerable archaeological potential. The location, where the chalk valley of the River Wylde gives way to the heavier greensand soils of the area to the north of the town, places Warminster at a key point for local communications and access to a wide range of different economic activities. The western end of the chalk massif of Salisbury Plain dominates the town on the east with hill forts at Bratton Castle, Battlesbury and Scratchbury in close proximity. The Plain has light, easily cultivated soils which were very attractive to early settlement and agriculture with extensive remains still surviving within the boundary of the military training area. The intensive use of the area continues into the Romano-British period. To the south west and west of the town the chalk Great Ridge has similar remains with major late prehistoric and Romano-British settlements at Hanging Langford Camp and on Stockton Down. An outlier of this chalk ridge, Cley Hill, also has remains of Bronze Age funerary monuments and a hill fort on its summit.

The floor of the Wylde Valley also bears witness to extensive prehistoric and Romano-British use with long barrows at Corton, Sherrington and Boyton to name three. Air photography has revealed extensive ploughed out large Bronze Age barrow cemeteries at Upton Lovell, Tytherington and Sutton Veny. A probable major later Iron Age centre survives as an earthwork at The Bury, Bishopstrow and at nearby Pit Mead a large but poorly understood Roman villa has been known since the eighteenth century.

To the north of Warminster the heavier greensand and clay soils will have provided both pasture and managed woodland, with extensive iron deposits available at Westbury.

With this setting it is not surprising that Warminster emerges as an important ecclesiastical and estate centre in the Anglo-Saxon period.

The authors of this report have pulled together the available evidence for Anglo-Saxon Warminster and embarked upon a programme of geophysical surveys, often in relatively confined and difficult spaces, in an attempt to gain a great insight to the minster church and its environs.

The results of the geophysical survey are variable. This is due largely the difficult nature of the greensand geology in obtaining clear responses and to more recent landscaping activities. Despite these constraints, the authors have attempted to provide an assessment of the archaeological potential of the area around the minster church. The interpretations of the geophysical surveys must be regarded as provisional and ideally would benefit from a programme of test-pitting to confirm the presence of buried archaeological deposits. Despite this caveat, the authors are to be congratulated in undertaking this important preliminary survey and it will form a firm foundation for future work involving excavation and building recording of the present church fabric.

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