

**A ROMAN FORT AT DINEFWR PARK, LLANDEILO: A
COMMENTARY ON A GEOPHYSICAL SURVEY BY
STRATASCAN**



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By

Gwilym Hughes

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ARCHAEOLEG CAMBRIA
Ymddiriedolaeth Archaeolegol Dyfed Cyf
Neuadd y Sir, Stryd Caerfyrddin, Llandeilo, Sir Gaerfyrddin SA19 6AF
Ffon: Ymholiadau Cyffredinol 01558 823121
Adran Rheoli Trefitadaeth 01558 823131
Ffacs: 01558 823133
Epost: cambria@acadat.com Gwefan: www.acadat.com

CAMBRIA ARCHAEOLOGY
Dyfed Archaeological Trust Limited
The Shire Hall, Carmarthen Street, Llandeilo, Carmarthenshire SA19 6AF
Tel: General Enquiries 01558 823121
Heritage Management Section 01558 823131
Fax: 01558 823133
Email: cambria@acadat.com Website: www.acadat.com

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REPORT NUMBER 2003/49

This report has been prepared by Gwilym Hughes

Position Director

Signature Date

This report has been checked and approved by Ken Murphy on behalf of Cambria Archaeology,
Dyfed Archaeological Trust Ltd.

Position Principal Archaeologist

Signature Date.....

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on the content or presentation of this report

A Roman Fort at Dinefwr Park, Llandeilo: a commentary on a geophysical survey by Stratascan

Summary

A geophysical survey undertaken for Cambria Archaeology by Stratascan Ltd within Dinefwr Park, Llandeilo in February and March 2003 has revealed clear evidence for a Roman fort immediately to the south of Home Farm. The work was undertaken on behalf of the National Trust who are preparing a conservation plan for Dinefwr Park. The fort has multivallate defences and an internal area of 1.54 hectares. The survey produced evidence for external activity alongside roads leading to the fort from the northeast and southeast. A further structure 230m to the northwest may also be related to the fort and could be a bathhouse. The results of the survey strongly suggest that the fort is superimposed over an earlier, larger fort with a slightly different alignment. The full extent of this earlier fort is currently uncertain and it may extend beyond the areas covered by the geophysical survey. The presence of a fort in Llandeilo has long been suspected and previous finds of pottery and coinage has strongly indicated that the area of Home Farm was the most likely location. An additional small area was surveyed to the north of Newton House to investigate the possible presence of associated 18th century garden features. Several structural features of possible interest were identified although there appeared to be little evidence of a formal garden.

Introduction

The following report provides a commentary on a geophysical survey undertaken by Stratascan (Stratascan 2003) in February and March 2003 on land to the south of Home Farm at Dinefwr Park, Llandeilo (NGR SN620225). The geophysical survey formed part of a wider archaeological survey and investigation undertaken by Cambria Archaeology on behalf of the National Trust. This work also included a topographic survey of the area of the Deer Park (Murphy 2003) and intended to inform a conservation plan being developed for Dinefwr Park by the National Trust. The focus of the geophysical survey was a large block of land (c. 27 hectares) that had recently been acquired by the National Trust to the south of Home Farm. A smaller area of geophysical survey (0.4 hectares) was also undertaken immediately to the north of Newton House.

The geophysical survey of the larger block of land was undertaken in two stages (Stratascan 2003, 5). The first reconnaissance stage involved using magnetic susceptibility across the whole of the area. The intention was to use these results to identify areas of potential that would be targeted with more detailed magnetometer survey (Stratascan 2003, Fig. 13 Areas 2-6). In the event this detailed magnetometer survey covered a total area of 9.28 hectares. The survey of the smaller area to the north of Newton House used both Magnetometry and Resistivity techniques. Full technical details of the Stratascan survey and detailed plots appear in their report. It is not proposed to repeat these here. The objective of this report is simply to provide an additional commentary and to attempt a preliminary archaeological interpretation of the results. However, selected illustrations from the Stratascan report are included here as an appendix.

Archaeological background

Note – the PRN numbers refer to the Primary Record Numbers on the regional Sites and Monuments Record held and maintained by Cambria Archaeology).

Prior to the 1990s the evidence for Roman activity within the area of Dinefwr Park was fragmentary. A milestone (PRN 972) bearing an inscription to the Emperor Tacitus (AD275-276) was recorded in 1697 apparently built into a farmhouse near Dinefwr although this object is now lost (Jarret 1969, 186). However, it may have been brought to the site from its original findspot. There are also antiquarian records of a possible Roman structure below Llandyfeisant church (PRN 7367). A number of Roman coins have been found from the Llandeilo area including a possible mid-late 3rd century coin hoard (PRN 886), a possible late 1st century coin hord (PRN 869) and an *as* of Tiberius (AD10) found before 1920 at the junction of Alan and Latimer Roads (PRN 875). In addition the head of a female pottery figurine (now lost) was recorded near to Llandeilo Bridge (PRN 874).

During the early 1980s aerial survey and fieldwork identified clear stretches of the Roman road running between Llandovery and Carmarthen (James and James 1984). One stretch was identified to the northeast of Cwmifor in the area of Down Farm. It is thought that this stretch of road then continues in a southwesterly direction and may underlie the course of the current A40 as it approaches Rhosmaen. Stretches of the road have also been identified to the west of Llandeilo between Broadoak and Llanegwad. Given the midway location of Llandeilo between Carmarthen and Llandovery it was considered the obvious place for a Roman fort that were frequently spaced a day's march apart (James 2000, 30-31).

Finds of Roman pottery were subsequently recovered during a brief walkover survey in 1993 from two areas immediately to the south of Home Farm (PRN 47646 and 47647 and Peter Crane 1994, 2 and 6). This included several fragments of pottery including samian ware recovered from the northwest corner of 'Brick Field' (PRN 47646) and further fragments (PRN 47647), including part of an amphorae handle recovered from the spoil created by a recently excavated pond in the field to the south of the Cae William rugby ground. The character of this material was considered to be entirely consistent with a military establishment dating to the late 1st – early 2nd century AD. A small-scale geophysical survey was undertaken in the areas where this material was found. Although this survey was inconclusive, the results were based on a very small sample area. Finds of Romano-British pottery have also been identified in a streambed at the western end of the landscaped park just inside the western boundary (PRN 32105).

All this evidence prompted Heather James in 1993 to tentatively suggest the layout and location of the Roman fort immediately to the south of Home Farm. This was intended to inform the planning process relating to proposals that had been put forward at that time for a proposed golf course. The results of the current geophysical survey demonstrate that her prediction was extraordinarily accurate.

In 2000, four silver denarii (PRN 47648), found by a metal detectorist were reported to the Carmarthenshire County Museum under the Portable Antiquities Scheme. One is of Augustus (31 BC – AD 14) and the other three are first century AD including one and possibly two of Vespasian (AD 69 – 79).

Summary interpretation of the geophysical survey results

The magnetometer survey of the larger block of land to the south of Home Farm suggests the presence of two superimposed Roman forts (Appendix, Figure 14). The full extent of the earlier fort (Fort 1) is uncertain as it may extend beyond the area covered by the geophysical survey. The survey provides a significant amount of detail relating to the internal layout of the later fort (Fort 2). Several roads (Roads 1-4) can be identified leading to the fort and at least two of these are associated with roadside activity. Other external features including at least two enclosure (Enclosures 1 and 2) and a building to the northwest of the fort are also indicated by the results. The following narrative provides a preliminary interpretation of some of the principal features and is accompanied by a simplified interpretation plan (Figure 2).

Fort 1 (PRN 47636)

The eastern corner of the multivallate defences of the earlier fort are visible in the eastern section of Area 6 of the geophysical survey. These appear to comprise at least three and possibly four ditches and associated ramparts. A four-post structure is located on the line of the inner rampart of the northeast defences close to the eastern corner. The dimensions of this feature (c 4m x 4m) suggest that it might be an interval tower. There is a hint of the northern corner of the fort in the westernmost part of Area 5 and it seems highly probable that the northwestern defences are represented by the positive linear anomalies visible in the southeastern corner of Area 4 and the northwestern corner of Area 6. However, these defences are overlain by features relating to the later fort and so they are more difficult to identify.

There is also an element uncertainty about the location of the southwestern defences. These might be represented by the positive linear anomalies, with a northwest-southeast alignment, that are visible in the southwestern part of Area 6. This would appear to be consist of two ditches and associated banks. If these are the southwestern defences of the fort then the total internal dimensions would be approximately 160m x 150m (2.4 hectares). Alternatively, the fort could be significantly larger, extending to the southwest of the areas surveyed and possibly as far as a low ridge adjacent to the modern access road to Newton House. In this case the internal dimensions of the fort could be as much as 260m x 150m (3.9 hectares). Additional geophysical survey in this area might clarify this issue.

The orientation and internal layout of the earlier fort cannot be determined with any certainty from the geophysical survey results alone. It seems probable that the front of the fort (the *praetentura*) is located to the northeast. This is certainly the case with the later fort (see below). A group of anomalies within the eastern corner of the fort suggest the presence of several substantial buildings apparently of at least two phases. However, these might relate to the later fort phase. A large thermoremanent response was detected on the inner line of the southeast defences. This was interpreted by Stratascan as a possible kiln or large hearth (Stratascan 2003, 11). The location of such a feature, dug into the rear of the inner rampart, would seem to be logical. Other internal anomalies were detected either side of what would be the southeastern extension of the *via principalis* of the later fort. It seems logical to suggest that these represent a development external to the later fort rather than internal to the earlier fort. In fact it is possible that the

southeast defences of the earlier fort continued to be used as an annex to the later fort and provided some protection for these structures.

Fort 2 (PRN47637)

The alignment and internal arrangement of the later fort is much clearer. Although only the southern corner of the defences was fully covered by the survey, elements of all four sides were recorded and three of the four entrances can be clearly identified. The southeastern line of the defences appears to be represented by at least four ditches. The outer two ditches appear to be joined at the entrance on this side (the *porta principalis dextra*). This defensive arrangement, referred to as a 'parrot's beak system' has been linked with the *legio II Adiutrix* who were based in Chester. However, the apparent presence of this feature at Llandeilo and elsewhere must now call this association into question (Jeff Davies pers. comm.). There appears to be a slightly wider berm between the second and third ditches on the southeastern side, especially noticeable to the northeast of the entrance. The composition of the northeastern and northwestern defences is not as clearly defined although the entrances (the *porta praetoria* and the *porta principalis sinistra*) can be clearly identified. There does not appear to be any break in the outer defences on the southwest side of the fort in the area where the rear entrance (the *porta decumana*) might be expected. However, a break is apparent in the inner ditch on this side of the fort. Possibly the outer ditches were crossed by a bridge. The overall internal dimensions of the fort are c 140m x 110m (1.54 hectares).

Topographically the layout of the fort appears to follow conventional lines. The assumed location of the *porta decumana* corresponds with the highest point of the fort and a second slightly lower knoll corresponds with the location of the *porta praetoria*. The remaining area of the fort is laid out on more level ground along the top of a low ridge. There are excellent sight lines to the west down the Twyi valley towards Carmarthen and to the northeast up the Twyi valley towards Llandovery (Plate 1). The view to the southwest is dominated by the hill on which the later medieval castle stands (Plate 2). The view to the southeast is more restricted by the proximity of Penlan Hill.

Part of the internal layout of roads can be confidently identified in particular the *via principalis* and the front part of the *via praetoria*. Elements of the intervallum road (the *via sagularis*) can be identified within Area 4 and this presumably continued around the remaining internal perimeter of the fort. A second transverse road can just about be identified (possibly the *via quintana*). Numerous rectilinear features have been picked out by the detailed geophysical interpretation (Stratascan 2003, Figure 18). It is suggested that some of the stronger positive anomalies might be indicative of structures built with material having thermoremnant properties such as fired clay and brick (Stratascan 2003, 11). Clearly this would need to be tested by excavation. It is possible to predict the location of certain buildings. In particular the headquarters building (the *principia*) is likely to be located near to the centre of the fort between the *via principalis* and the *via quintana*. The one internal area of the fort with relatively weak responses is located between the presumed location of the *principia* and the *porta decumana* in the northwestern part of Area 6. If there were no buildings in this area it is possible that it may have been used as a parade or practice area. Alternatively, this area may have been disturbed when the nearby tree clump was established in the mid to late 18th century.

Road 1 (PRN 47638)

There are clear indications of a road heading northeast out of the front entrance of the fort. There is also evidence of fragmentary flanking roadside ditches. The road continues to the northeast beyond the area surveyed and ultimately it would link up with the previously recorded sections of the Llandovery road identified to the northeast of Llandeilo.

Road 2 (PRN 47639)

A road, with flanking ditches, appears to fork away from the northeastern road approximately 90m from the fort entrance. This presumably extends beyond the area surveyed to the east. It is possible that this road continues around the northern side of Penlan Hill following the line of the modern day Carmarthen Road and Carmarthen Street and leads to a river crossing to the south of the modern town.

Road 3 (PRN 47640)

The road leading from the southeastern entrance of the fort leads across the former southeastern area of the earlier fort. Evidence for roadside development is suggested by the geophysical survey and this presumably relates to external structures associated with the later fort rather than internal activity associated with the earlier fort. The road presumably extends beyond the southeastern limit of the survey and could continue to the south of Penlan Hill following the line of the current track leading to Llandyfeisant church. This would provide an alternate route to a possible river crossing.

Road 4 (PRN 47 641)

There are just hints of roadside ditches extending beyond the northwest entrance to the fort. The rectangular building in Area 2 lies directly on the line of this road. It seems likely that this road ultimately extends beyond the areas surveyed and links up with the observed sections of the Roman head heading westwards towards Carmarthen (*Moridunum*).

External settlement (PRN 47642)

There appears to be activity either side of the road (Road 1) leading way from the northeastern entrance to the fort which is suggestive of a small settlement or *vicus*. The geophysical survey refers to an area of magnetic debris of probable archaeological significance and this is associated with a series of positive linear anomalies, possible ditches associated with structures (Stratascan 2003, Figure 18). The principal focus of this activity seems to be within a band 20 wide on either side of the road. However, information about the full extent of the suggested settlement is limited by the area covered by the geophysics.

Possible rectangular building (PRN 47643)

Several positive linear anomalies in Area 2 appear to define one end of a rectangular structure at least 30m long and 18m wide. A curvilinear linear anomaly suggests the presence of an apsidal room attached to the northwestern side of the structure. These

features are associated with a high level of magnetic debris of probable archaeological significance and a strong discrete positive anomaly suggestive of a ferrous object. The field name, 'brick field', has led to previous suggestions that a brick kiln might be expected in this area. However, the association of this structure with the line of the road leading from the fort (Road 4) and the previous finds of Romano-British pottery from this area suggests a building of Roman date. The size of this building and the proximity to a nearby stream suggests that it could even be a bathhouse despite the distance from the fort.

Enclosure 1 (PRN 47644)

A linear anomaly in Area 5, suggesting part of a small rectilinear enclosure 23m wide, was recorded immediately to the northeast of the two forts and to the south of the northeastern approach road (Road 1) to the later fort (Fort 2). The enclosure extends beyond the southern edge of the area surveyed. Although this enclosure could be contemporary with the occupation of the fort it could equally be a landscape feature associated with later park.

Enclosure 2 (PRN 47645)

A curvilinear anomaly was located in the northwestern corner of Area 3. It is probably caused by a ditch surrounding a tree clump and dates to the 18th century landscaping. However, it is also possible that it is part of a small enclosure and that it is contemporary with the occupation of the forts.

Area to the north of Newton House (appendix, Figures 04, 08 and 11)

This area was surveyed in the hope that some indication of the formal garden shown in early 18th century paintings could be detected. One of the linear features visible from the magnetometry is probably a pipeline and a second is probably a cable. However, there are a few linear and pit-like anomalies that might be of archaeological origin. Similarly, the resistivity survey indicated areas of both low resistance and high resistance, particularly in the northern part of the area. The technical report suggests that these might be garden features although there does not appear to be any formal arrangement (Stratascan 2003, 10). However, an east-west linear anomaly visible on the resistivity survey (Appendix, Fig. 11) might relate to a pathway associated with a formal garden.

Discussion

There can be no doubt that the geophysical survey has solved one of the outstanding uncertainties relating to the Roman conquest and occupation of southwest Wales; confirmation of the existence of the Roman fort at Llandeilo and its precise location. It provides yet more evidence, if more was needed, to refute the suggestion put forward by Jarrett that southwest Wales was almost exempt from military occupation (Jarrett 1969, 8). In fact the equal spacing along the Roman road of the forts at Llandovery, Llandeilo and Carmarthen, within a days march of each other, must have provided an effective control over the surrounding population. Of course the question still remains about how

long this arm of control extended along the road to the west of Carmarthen (James *et al* 2002).

The clarity and detail provided by the geophysical survey of the Llandeilo fort is outstanding. The results have also sprung one or two surprises and many new questions. The superimposition of two forts is extremely unusual in Wales. Only two other examples are known at Cardiff (Webster 1991) and Neath. At Cardiff a large pre-Flavian fort was followed by a Flavian establishment. It seems likely that both the Llandeilo forts were established in relatively quick succession in the later first century and this is supported by the limited dating evidence that currently exists, and in particular the four first century silver denarii. The possibility of a pre-Flavian date for the earlier fort cannot be discounted. However, it seems likely that it dates to an early Flavian phase of campaigning (perhaps soon after AD 74) when such large forts were favoured (Davies 2000, 15). If the larger suggested size of the Llandeilo fort is accepted (3.9 hectares) then it would be one of the largest campaigning forts known from Wales and compares with the recently surveyed fort at Llanfor at 3.6 hectares (Gwynedd Archaeological Trust 2002, 23). Even the smaller suggested size for the early fort (2.4 hectares) is at the upper end of the size range (Jarrett 1969, 150-152). This size suggests that the fort held a substantial military unit, at the very least an *ala quingenaria* (cavalry unit) or a *cohors milliaria* (a large infantry or mixed unit) and perhaps even a larger legionary detachment.

The stronger geophysical survey readings associated with the later fort (Fort 2) suggests that it was a longer-lived establishment possibly dating to the 'garrison phase' of the Flavian conquest period. The smaller size (1.54 hectares) suggests that it held a smaller unit, perhaps a *cohors quingenaria peditata* (a small infantry unit). At present, it is impossible to determine the period of time between the abandonment of the earlier fort and the construction of the later fort. Possibly the abandonment of the earlier fort was related to the demands of campaigning in northern Britain and elsewhere in the period AD 78-83 (Davies 2000, 21). The subsequent disengagement from Scotland in AD 78 may have allowed the return of units to Wales. Of course, whether or not this was the scenario at Llandeilo is purely speculative and would require further investigation. Similarly, the abandonment of the later fort cannot be known without further dating evidence. However, there is currently no reason to suspect that it continued to be occupied beyond the middle of the second century AD and it has been suggested that southwest Wales was bereft of troops by the mid-120s (Davies 2000, 24).

Both forts appear to have utilised a relatively flat topped ridge with the long axis of the forts orientated along the line of the ridge. The slight relocation of the smaller later fort might have been dictated by minor variations in the local topography. The orientation of the earlier fort appears to have utilised specific local rises and ridges to maximise sight lines. However, there would have needed to be a subtle shift to accommodate the needs of a smaller fort. As noted above the front and rear gates of the later fort were also located to correspond with slight knolls.

Almost certainly both forts, initially at least, had timber and earth defences and timber internal buildings. Only further investigation will determine the extent to which of the structures, if any, were subsequently rebuilt in stone. Some suggestions for the possible internal arrangements of the later fort have been made above but again these are tentative and could only be further clarified by excavation. Similarly, only tentative suggestions can currently be made for the precise nature of the external activity and in particular the

features alongside the Roads 1 and 3 and the possible rectangular building to the northwest of the fort. Further geophysical survey in the areas not yet covered and perhaps more detailed coverage (using closer sampling intervals) within the interior of the fort might provide additional information although further advice on an appropriate methodology would need to be sought from the geophysics specialists. Other issues could only be resolved through excavation.

Acknowledgements

I am very grateful for discussions with Emma Plunkett-Dillon (National Trust), Jeff Davies (University of Aberystwyth), Kenneth Murphy (Cambria Archaeology) and Heather and Terry James during the preparation of this commentary and of course for the excellent survey prepared by the team from Stratascan. Hubert Wilson prepared the illustrations for this report.

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Plate 1 - View from the front entrance (the *porta praetoria*) of Fort 2 up the Tywi valley. The red bracken covered hillfort of Garn Goch can be clearly seen behind the trees on the right of the picture



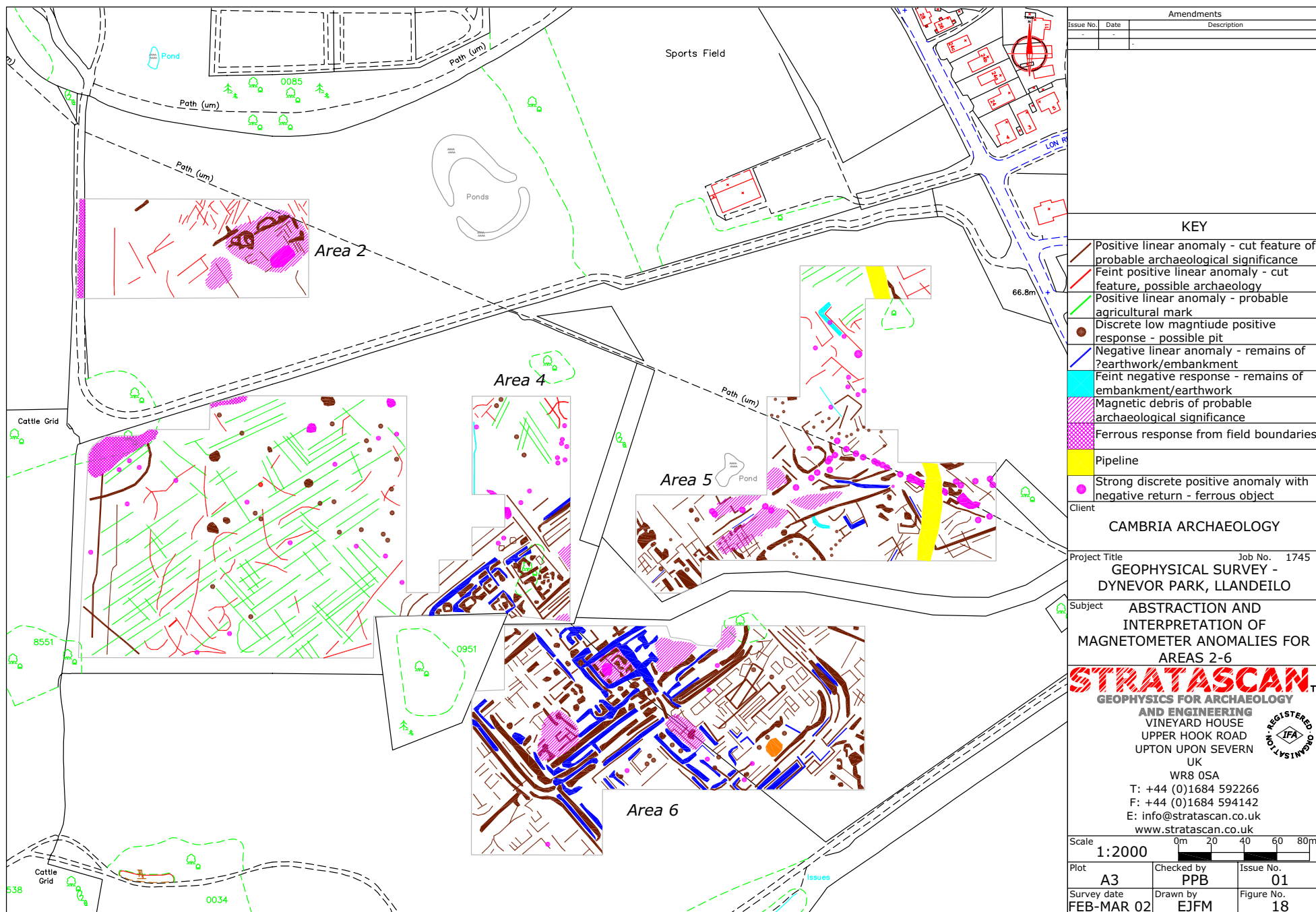
Plate 2 – view towards Dinefwr Castle from the centre of Fort 2. The approximate location of the rear entrance (the *porta decumana*) is close to the summit of the knoll on the right of the picture.



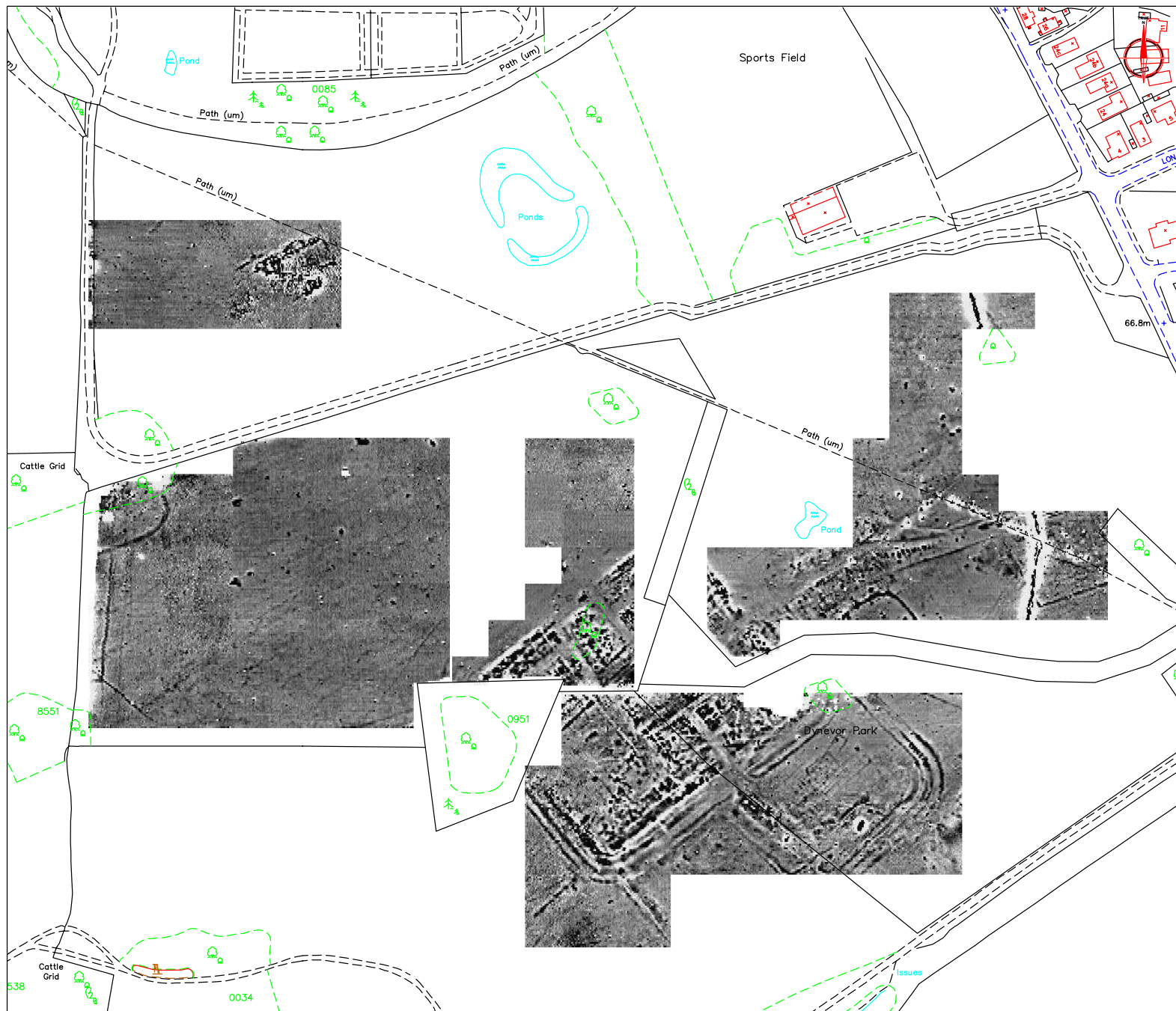
Plate 3 – view of Fort 2 from the southeast. The front entrance (the *porta praetoria*) is to the right of the clump of trees in the foreground and the rear entrance is on the knoll with the clump of trees in the background.

Appendix

Selected geophysical survey plots from the technical report by Stratascan



Amendments		
Issue No.	Date	Description
KEY		
	Positive linear anomaly - cut feature of probable archaeological significance	
	Feint positive linear anomaly - cut feature, possible archaeology	
	Positive linear anomaly - probable agricultural mark	
	Discrete low magntiude positive response - possible pit	
	Negative linear anomaly - remains of ?earthwork/embankment	
	Feint negative response - remains of embankment/earthwork	
	Magnetic debris of probable archaeological significance	
	Ferrous response from field boundaries	
	Pipeline	
	Strong discrete positive anomaly with negative return - ferrous object	
Client		
CAMBRIA ARCHAEOLOGY		
Project Title		Job No. 1745
GEOPHYSICAL SURVEY - DYNEVOR PARK, LLANDEILO		
Subject		
ABSTRACTION AND INTERPRETATION OF MAGNETOMETER ANOMALIES FOR AREAS 2-6		
<div>STRATASCANTM</div> <div>GEOPHYSICS FOR ARCHAEOLOGY AND ENGINEERING</div> <div>VINEYARD HOUSE</div> <div>UPPER HOOK ROAD</div> <div>UPTON UPON SEVERN</div> <div>UK</div> <div>WR8 0SA</div> <div>T: +44 (0)1684 592266</div> <div>F: +44 (0)1684 594142</div> <div>E: info@stratascan.co.uk</div> <div>www.stratascan.co.uk</div> <div></div>		
Scale 1:2000		
Plot	Checked by	Issue No.
A3	PPB	01
Survey date	Drawn by	Figure No.
FEB-MAR 02	EJFM	18



Amendments		
Issue No.	Date	Description

Plotting parameters	
Maximum +5.8nT (black)	
Minimum -3.0nT (white)	

Client	
CAMBRIA ARCHAEOLOGY	

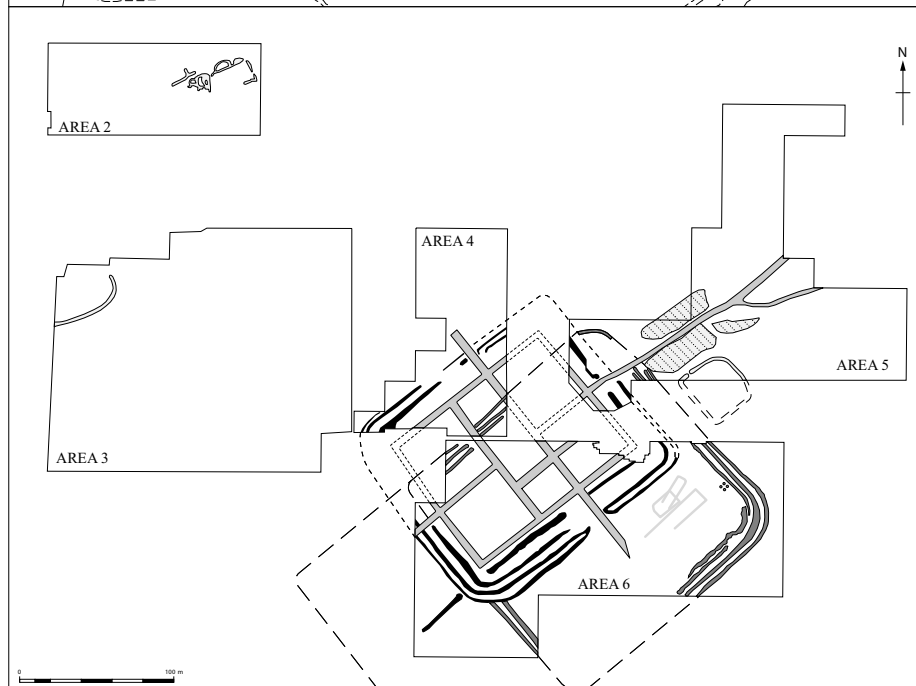
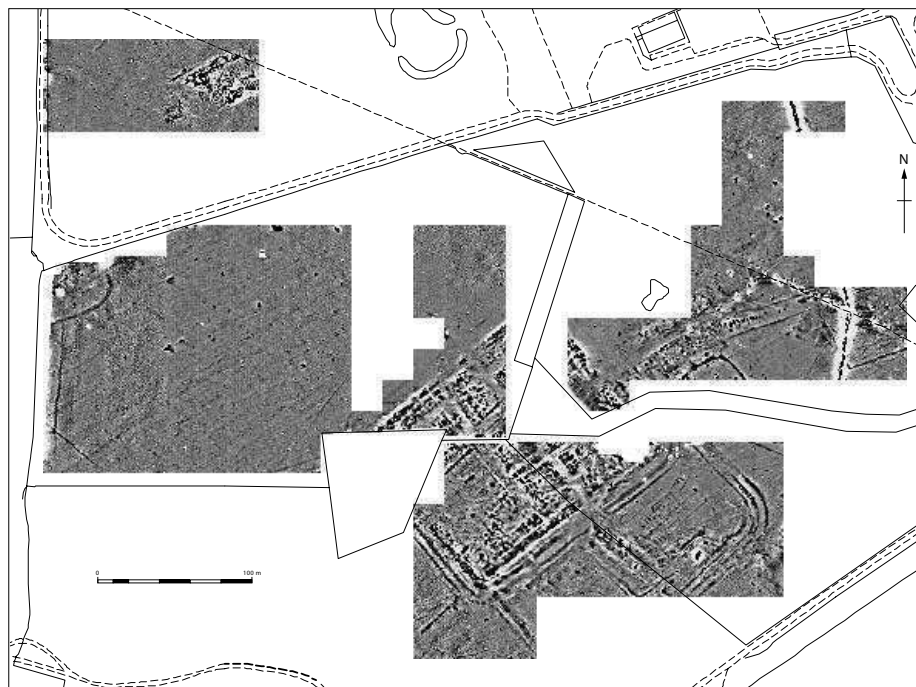
Project Title	Job No.
GEOPHYSICAL SURVEY -	1745
DYNEVOR PARK, LLANDEILO	

Subject	
PLOT OF RAW MAGNETOMETER DATA FOR AREAS 2-6	

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GEOPHYSICS FOR ARCHAEOLOGY
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VINEYARD HOUSE
UPPER HOOK ROAD
UPTON UPON SEVERN
UK
WR8 0SA
T: +44 (0)1684 592266
F: +44 (0)1684 594142
E: info@stratascan.co.uk
www.stratascan.co.uk

Scale	0m 20 40 60 80m	
1:2000		

Plot	Checked by	Issue No.
A3	PPB	01
Survey date	Drawn by	Figure No.
FEB-MAR 02	EJFM	14



- Fort 1 Defences
- Fort 1 Defences (projected)
- Fort 2 Defences
- Fort 2 Defences (projected)
- Fort 2 Roads
- Fort 2 Roads (projected)
- External Settlement
- Unassigned
- Area of geophysical survey

(Stratascan Ltd. kindly gave permission to reproduce the results of the magnetometer survey)

