

LAND AT ROMAN ROAD, LLANGUNNOR, CARMARTHEN: GEOPHYSICAL SURVEY 2018

(NGR SN 41472 19166)



Prepared by DAT Archaeological Services
For: GRD Ltd



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**LAND AT ROMAN ROAD, LLANGUNNOR,
CARMARTHEN:
GEOPHYSICAL SURVEY
2018**

Gan / By

Charles Enright

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Ymddiriedolaeth Archaeolegol Dyfed Cyf
Neuadd y Sir, Stryd Caerfyrddin, Llandeilo, Sir
Gaerfyrddin SA19 6AF
Ffon: Ymholiadau Cyffredinol 01558 823121
Adran Rheoli Treftadaeth 01558 823131
Ffacs: 01558 823133
Ebost: info@dyfedarchaeology.org.uk
Gwefan: www.archaeolegdyfed.org.uk

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: info@dyfedarchaeology.org.uk
Website: www.dyfedarchaeology.org.uk

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LAND AT ROMAN ROAD, LLANGUNNOR, CARMARTHEN
GEOPHYSICAL SURVEY

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LAND AT ROMAN ROAD, LLANGUNNOR, CARMARTHEN
GEOPHYSICAL SURVEY

SUMMARY

DAT Archaeological Services were commissioned by Mr Gareth Davies of GRD Ltd to undertake a geophysical survey of a proposed new residential development located on land at Roman Road, Llangunnor, Carmarthen (NGR SN 41472 19166). A geophysical survey was recommended in response to a pre planning consultation. The purpose of the geophysical survey was to provide a better indication of the archaeological potential of the site and if required enable targeting of any further archaeological mitigation requirements before or during the development.

The reason for the requirement of the pre-determination geophysical survey was due to the site lying adjacent to the projected line of Roman road leading southwest from Carmarthen. An archaeological watching brief on an adjacent site in 2011 identified a cobbled surface and a raised earthwork of uncertain date which could have projected into this site area.

The survey area was approximately 0.46ha in size and was conducted using a fluxgate gradiometer which detects variations in the earths magnetic field. Readings were taken at a high resolution on traverses 0.5m wide and every 0.25m within a 20m x 20m grid across the proposed development area. The site was surveyed on the 8th of March, 2018.

The results of the geophysical survey has detected the former field boundary that can be seen on recent satellite imagery and a possible infilled 'ditch'. No features with obvious archaeological characteristics have been identified.

It is considered very unlikely that any further archaeological mitigation will be required on this site.

1. INTRODUCTION

1.1 Project Commission

- 1.1.1 DAT Archaeological Services were commissioned by Gareth Davies of GRD Ltd to undertake a geophysical survey of a proposed new residential development located on land at Roman Road, Llangunnor, Carmarthen (NGR SN 41472 19166; Figure 1 and 2). The proposed development will comprise the construction of 15 bungalows and associated works.
- 1.1.2 In response to a pre planning consultation the archaeological advisor to the planning authority (Development Management – Dyfed Archaeological Trust) recommended a pre-determination archaeological evaluation of the site through the implementation of a geophysical survey.
- 1.1.3 This survey was requested due to the archaeological potential of the site as it lies adjacent to the projected line of Roman road leading southwest from Carmarthen and an archaeological watching brief on an adjacent development site revealed a cobbled surface and raised earthwork which could have projected into this site area.
- 1.1.4 The geophysical survey was undertaken using a fluxgate gradiometer which detects subtle variations in the earth's magnetic field, which can indicate the presence of buried features such as ditches, pits, walls or postholes, which are not visible on the ground surface. The purpose of the geophysical survey was to provide a better indication of the archaeological potential of the site through the identification of subsurface features which could be indicative of archaeology. This would enable targeting of any further archaeological mitigation requirements before or during the development if required.
- 1.1.5 A written scheme of investigation defining the archaeological works was produced by DAT Archaeological Services (Appendix 1) and was approved by Dyfed Archaeological Trust – Development Management (DAT-DM).

1.2 Scope of the project

- 1.2.1 The aims of the project were laid out in the written scheme of investigation for the geophysical survey were prepared by DAT Archaeological Services and approved by DAT-DM. The aims were thus:
 - To identify the presence/absence of any potential archaeological deposits through an initial gradiometer survey;
 - To establish the character and extent of any potential archaeological remains within the site area that could be affected by the proposed works;
 - To prepare a report and archive on the results of the geophysical survey.

1.3 Report outline

- 1.3.1 This report provides a summary and discussion of the geophysical survey and its results.

1.4 Abbreviations

- 1.4.1 Sites recorded on the Regional Historic Environment Record (HER) are identified by their Primary Record Number (PRN) and located by their National Grid Reference (NGR). Gradiometer readings are measured in nanoTesla (nT).

1.5 Illustrations

1.5.1 Printed map extracts are not necessarily produced to their original scale.

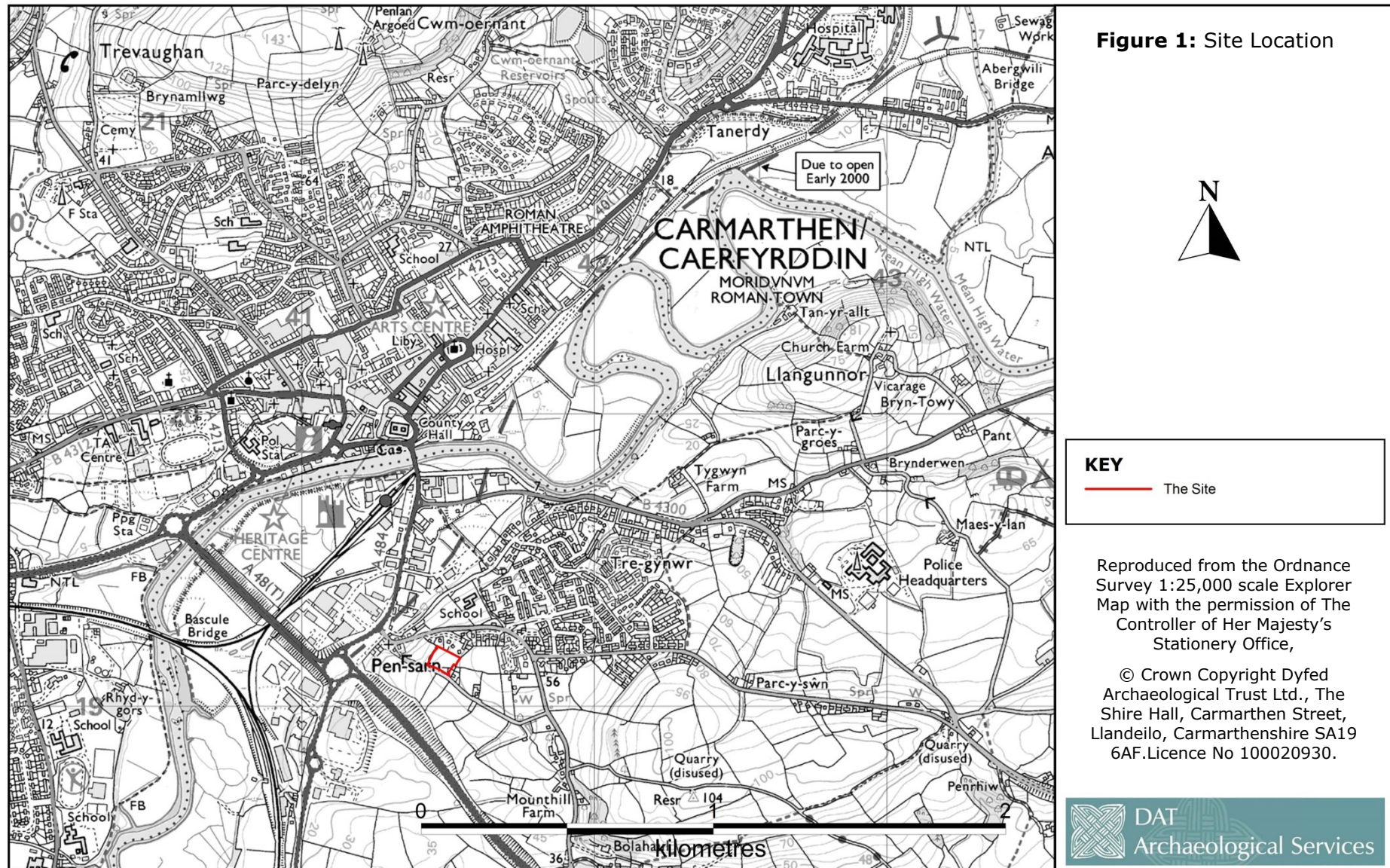
1.6 Timeline

1.6.1 The following timeline (Table 1) is used within this report to give date ranges for the various archaeological periods that may be mentioned within the text.

Period	Approximate date	
Palaeolithic –	c.450,000 – 10,000 BC	Prehistoric
Mesolithic –	c. 10,000 – 4400 BC	
Neolithic –	c.4400 – 2300 BC	
Bronze Age –	c.2300 – 700 BC	
Iron Age –	c.700 BC – AD 43	
Roman (Romano-British) Period –	AD 43 – c. AD 410	Historic
Post-Roman / Early Medieval Period –	c. AD 410 – AD 1086	
Medieval Period –	1086 – 1536	
Post-Medieval Period ¹ –	1536 – 1750	
Industrial Period –	1750 – 1899	
Modern –	20 th century onwards	

Table 1: Archaeological and Historical Timeline for Wales.

¹ The post-medieval and industrial periods are combined as the post-medieval period on the Regional Historic Environment Record as held by Dyfed Archaeological Trust



DAT Archaeological Services

2 THE SITE

2.1 Location, topography and geology

- 2.1.1 The development area is approximately 0.6ha in size. The site is currently under pasture and the topography gently falls from east to west at a gradient of 1:10.
- 2.1.2 To the east and north the proposed development site is bounded by existing residential developments, open fields lie to the south and to the west an allocated residential site, contained within the adopted Carmarthenshire Local Development Plan.
- 2.1.3 A single field boundary that once divided the plot of land in to two (as seen on OS maps and satellite imagery) has since been removed and the site now consists of one single parcel of land.

2.2 Archaeological potential

- 2.2.1 The proposed development site lies within the Historic Landscape Character area of 187: Croesyceiliog – Cwmffrwd, being a landscape enclosed into medium-sized fields of improved pasture. The ancient settlement pattern of dispersed farms is supplemented by more recent linear development along the main roads that radiate from Carmarthen.
- 2.2.2 The Historic Environment Record (HER) shows that there are no recorded heritage assets within the proposed development area. However the site does lie adjacent to a potential Roman road (PRN 218), as identified on historic Ordnance Survey mapping (1890 and 1906) and recorded during a survey of Roman roads in 2004. Documentary evidence (Rees' map of 14th century South Wales) also suggests a medieval settlement within the vicinity.
- 2.2.3 Another 13 sites are recorded on the Dyfed HER within 500m of the development site (Table 2, Figure 3). The majority of these are of post-medieval date. Some represent former or standing buildings (PRN 8920, Penbryn Mansion; PRN 894, Myrtle Hill; PRN 16413, Capel Y Babel; PRN 23452, Mount Hill; PRN 61739, Mount Hill; and PRN 107983, Toll Gate). The former site of the gallows also lay within the area (PRN 17462). A former chemical works was located at Llangunnor (PRN 91). The above sites indicate the development of Carmarthen and its suburbs during after the industrial revolution.
- 2.2.4 An early medieval findspot of a Byzantine coin was recovered to the southeast of the development site. Medieval sites include the settlement at Penmorfa (PRN 10980) and the site of a former water mill (PRN 12758) both lying to the east of the development site. The former remains of a probable Civil War (17th century) period gun emplacement were recorded to the northeast of the site (PRN 196). The gun emplacement would have been in a position overlooking the town.
- 2.2.5 The final site recorded on the HER is the crash site of a De Havilland Vampire Fb5 Vz309 (PRN 105201) which occurred after the Second World War. The crash site location is located to the southeast of the site area.
- 2.2.6 In 2011 an archaeological watching brief was undertaken during initial groundworks on the adjacent residential development, land at Brynheulog, which revealed a cobbled surface, of uncertain date, and a low earthwork, again of uncertain date, running parallel to the Roman road for some 155m (Ratty 2011; DAT Report 2011/43).

PRN	Site Name and Type	Summary description	Period	NGR
91	Llangunnor Chemical Works	Extensive chemical works site shown on the 1st edition Ordnance Survey map of 1891. It is not clear if it is still shown on the 2nd edition Ordnance Survey map of 1907, several buildings are still shown but only 'Chemical House' is still marked.	Post-medieval	SN 4135 1965
196	Parc Y Gwn: Trench, Gun Emplacement	A feature described by Stephens (1964-9) as an elliptical hollow, 200ft long, 120ft wide (c.60mx36m). It is marked on early Ordnance Survey maps as an 'Intrenchment', believed to be a gun emplacement used during the Civil War.	Post-medieval	SN 4178 1940
218	Pensarn: Road	A possible length of Roman road running south from the west end of the fort at Carmarthen, and crossing the Afon Tywi at the presumed location of the Roman crossing point in the same location as the modern bridge.	Roman	SN 4130 1940
1671	Pensarn: Findspot	A Byzantine copper coin, dated to either the 8th or 10th century, was found c1904 on 'the old Roman road above Pensarn village'.	Early Medieval	SN 41 19
8920	Penbryn Mansion; Mount Pleasant	Now a private residence. Information from member of the public via the Archwilio app. 2013.	Post-medieval	SN 4184 1885
8941	Myrtle Hill: Mansion	An 18th century mansion house, 1st mentioned in a will of 1794. Described by Lewis as "a gentlemen's seat" in 1840. Includes associated grounds, stable block and lodge on the roadside.	Post-medieval	SN 4099 1895
10980	Peynora; Penymorfa: Settlement	A settlement site marked on William Rees' map of South Wales in the 14th century.	Medieval	SN 4170 1910
12758	Llangunnor: Water Mill	No further information	Medieval	SN 42 19
16413	Capel Y Babell: Chapel	A chapel recorded by the RCAHMS as being built in 1834, restored in 1870 and rebuilt in 1905/7 in an Arts and Crafts style. Still used as a chapel in 1998.	Post-medieval	SN 4130 1921
17462	Gallows	No further information	Post-medieval	SN 412 191
23452	Mount Hill: Mansion	Early 19th century Gothic style villa, marked on the tithe map of 1841. It is thought to date from 1770. An advert for auction in 1985 describes it as set in 4 acres with 4	Post-medieval	SN 4177 1910

		bedrooms and 2 bathrooms.		
61739	Mount Hill	Grade II listed building	Post-medieval	SN 41760 19099
105201	De Havilland Vampire Fb5 Vz309: Air Crash Site	This Vampire was one of 215 FB.5s delivered to the RAF between June 1949 and May 1950 by the English Electric Company, Preston, to contract 6/ACFT/2467. Its service life includes assignments to 213/233 Operational Conversion Unit. The aircraft ran out of fuel in bad weather and was abandoned 6 miles northwest of Carmarthen on 12 October 1954.	Modern	SN 41 19
107983	Toll Gate	Toll House mentioned in the records of the Kidwelly Turnpike Trust. Located on the edge of Pensarn village at the edge of the former causeway that ran northwards across Horsemead Commons. Its exact location is unclear.	Post-medieval	SN 41290 19240

Table 2: Known archaeological sites recorded on the Historic Environment record within 500m of the proposed development area

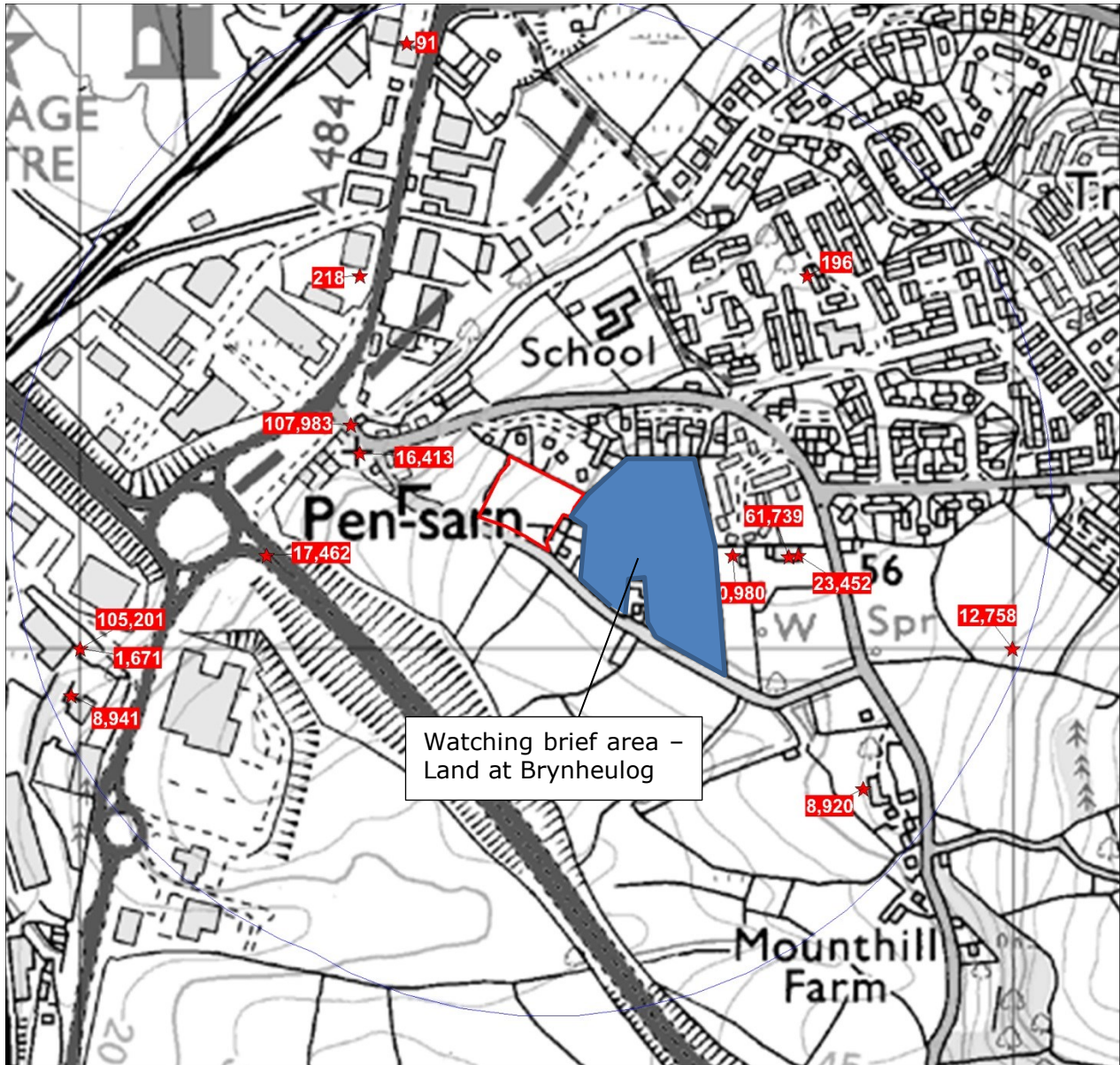


Figure 3: Known archaeological sites recorded on the HER within 500m of the Roman Road, Llangunnor proposed development site

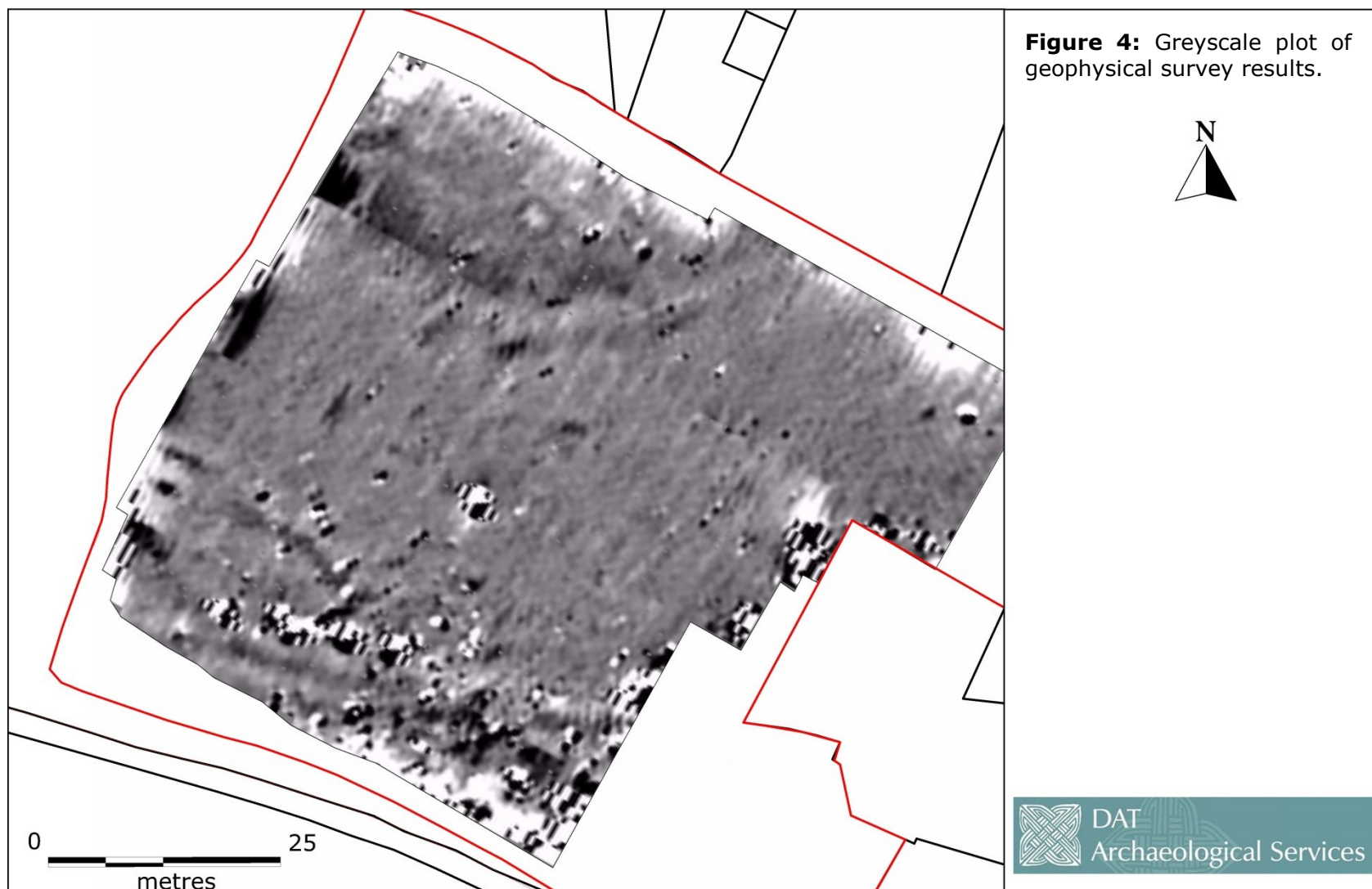
Reproduced from the Ordnance Survey 1:25,000 scale Explorer Map with the permission of The Controller of Her Majesty's Stationery Office, © Crown Copyright Dyfed Archaeological Trust Ltd., The Shire Hall, Carmarthen Street, Llandeilo, Carmarthenshire SA19 6AF. Licence No 100020930.

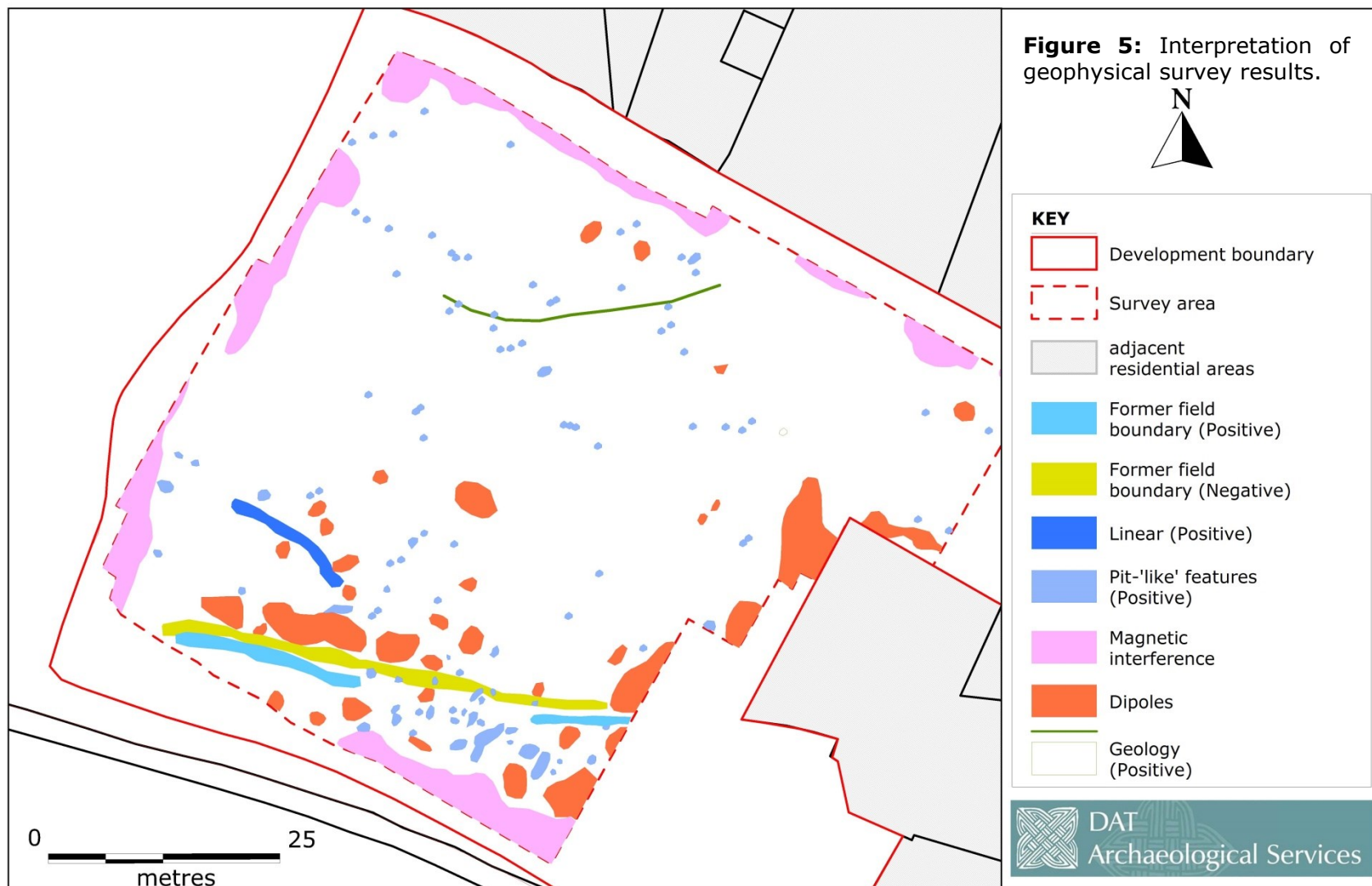
3 METHODOLOGY

- 3.1 A fluxgate gradiometer, which detects variations in the earth's magnetic field, with a DL601 data logger was used to conduct a detailed survey of the proposed development area. A sample interval of 0.25m (four readings per metre) was used with 0.5m wide traverses across 20m x 20m grids using the zigzag traverse method of collecting data. The gradiometers sensitivity was set to detect a magnetic variation in the order of 0.1 nanoTesla.
- 3.2 The survey grid was tied in to the local Ordnance Survey grid using Differential Global Positioning System (DGPS).
- 3.3 The data was processed using *Terrasurveyor 3.0* and presented with a minimum of processing. The presence of high values caused by ferrous objects, which tend to hide fine details and obscure archaeological features, have been 'clipped' to remove the extreme values allowing the finer details to show through.
- 3.4 The processed data has been presented as grey-scale plots (Figures 4 and 5) overlaid on local topographical features.
- 3.5 The resulting survey results and interpretation diagrams should not be seen as a definitive model of what lies beneath the ground surface, not all buried features will provide a magnetic response that can be identified by the gradiometer. In interpreting those features that are recorded the shape is the principal diagnostic tool, along with comparison with known features from other surveys. The intensity of the magnetic response could provide further information, a strong response for example indicates burning, high ferric content or thermoremnancy in geology. The context may provide further clues but the interpretation of many of these features is still largely subjective.
- 3.6 All measurements given will be approximate as accurate measurements are difficult to determine from fluxgate gradiometer surveys. The width and length of identified features can be affected by its relative depth and magnetic strength.

4 RESULTS AND DISCUSSION

- 4.1 The area was surveyed on the 8th of March 2018 covering approximately 0.46ha within the proposed development area. The southeastern corner of the site was not accessible for surveying.
- 4.2 The resulting greyscale plot from the geophysical survey can be seen in Figure 4 and an interpretation of the identified geophysical anomalies is shown in Figure 5 and discussed below.
- 4.3 Numerous dipolar features can be seen throughout and particularly concentrated in the south of the survey area. Such anomalies consist of a single positive response with an associated negative response forming a 'halo effect'. The negative and positive response is of equal magnitude but opposite polarity and are caused by the same feature. Dipole anomalies are very commonly observed across a range of sites, particularly agricultural land. Generally, unless the dipoles form part of a larger pattern or feature they are regarded as not significant. They are usually the result of modern ferrous rich debris such as brick and tile fragments as well as objects such as horse shoes or broken plough shares, which lie within the topsoil.
- 4.4 Where a field boundary contains ferrous material such as wire-fencing, a dipolar effect can be seen where the survey encroaches near to it. This dipolar 'shadow' is visible in nearly all instances where the survey meets the field boundaries around the perimeter of the proposed development area (south, west and northern boundaries).
- 4.5 The former field boundary that until recently divided the area into two parcels of land was clearly detected in the southern part of the site as well as a positive linear anomaly which may reflect an adjacent infilled ditch. The geophysical survey would indicate that it used to continue in a roughly east-west direction further than shown on old maps and aerial photographs, apparently running almost to the southwestern corner of the development area. This continuation may be just visible on Lidar imagery of the site area as accessed during the preparation of this report (<http://lle.gov.wales/catalogue/item/LidarCompositeDataset/?lang=en>). On Lidar data the boundary can be clearly seen to have continued further to the east across the adjacent Brynheulog development site following a slightly sinuous route.
- 4.6 A linear anomaly of around 14m length was noted on the western side of the development area which could indicate a ditch. The fact that it is isolated and does not appear to continue beyond its 14m length may be seen to indicate it is not of archaeological origin.
- 4.6 Throughout the survey area discrete pit-'like' features can be observed. Although there is some potential for them to be of archaeological origin it is also possible that they are a natural feature of the geology or a tree throw. Unless they form part of a larger pattern it can be difficult to differentiate between archaeological or natural phenomenon without intrusive groundwork.
- 4.7 No further anomalies considered to be of archaeological significance were identified during the survey.





5 CONCLUSIONS

- 5.1 The size of the survey area undertaken was sufficient enough to provide context for any archaeological deposits that would be affected by the proposed groundworks. In this instance very little evidence has been detected that would suggest the presence of significant or substantial archaeological deposits.
- 5.2 The former field boundary within the southern part of the site that appears on recent satellite imagery has been detected as positive and negative linear anomalies traversing the field roughly east to west towards the southern boundary. This suggests it extended further west than is shown on 19th century mapping, and used to continue across the adjacent Brynheulog development plot to the east. The sinuous nature of the alignment of this former field boundary is such that it is certain that it does not represent the line of a Roman road.
- 5.3 A linear anomaly that may reflect an infilled ditch has also been detected on the western side of the development area. It was approximately 14m in length and abruptly terminates at each end, and it does not appear to be associated with any other anomalies detected. It has no obvious archaeological characteristics or parallels and may well not be of archaeological origin.
- 5.4 The geophysical survey has addressed the aims as laid out in the WSI by identifying the presence of potential archaeological features and deposits within the proposed development area. Where possible an attempt has been made to characterise the features and deposits. A report (this document) and archive based on the results of the geophysical survey have been produced.
- 5.5 Despite the apparently negative results of the geophysical survey (with no potentially significant archaeological remains identified) there is the potential for archaeological deposits to be present on site that could not be detected for a number of reasons (i.e. depth of deposits, strength of magnetic variation from natural surroundings, etc.). The results of the survey would suggest that the potential for significant archaeology to be present on the site is low.
- 5.6 The decision for the scope of any further programme of archaeological works, if they are required, lies with the archaeological advisor to the local planning authority (Development Management - Dyfed Archaeological Trust). It is considered likely that no further works will be required.

6 SOURCES

6.1 Unpublished

Ratty, S., 2011. Land At Brynheulog, Roman Road, Llangunnor,c
Carmarthen: Archaeological Watching Brief. DAT Report No. 2011/43

6.2 Databases

Dyfed Archaeological Trust Historic Environment Record, The Shire Hall,
Llandeilo, Carmarthenshire, SA19 6AF

RCAHMW Coflein Database <http://www.coflein.gov.uk/>

Cof Cymru - National Historic Assets of Wales

<http://cadw.gov.wales/historicenvironment/recordsv1/cof-cymru/?lang=en>

APPENDIX I

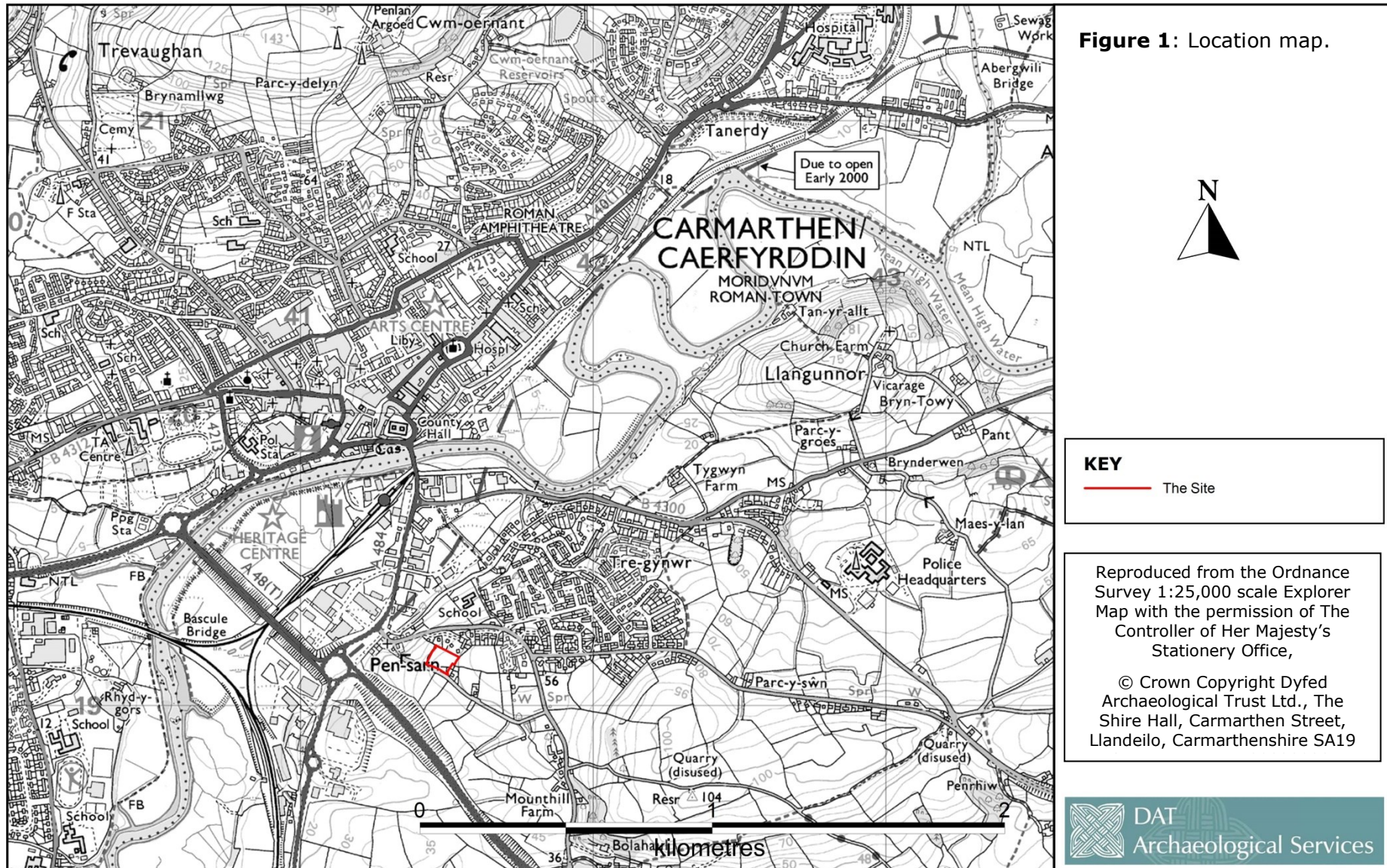
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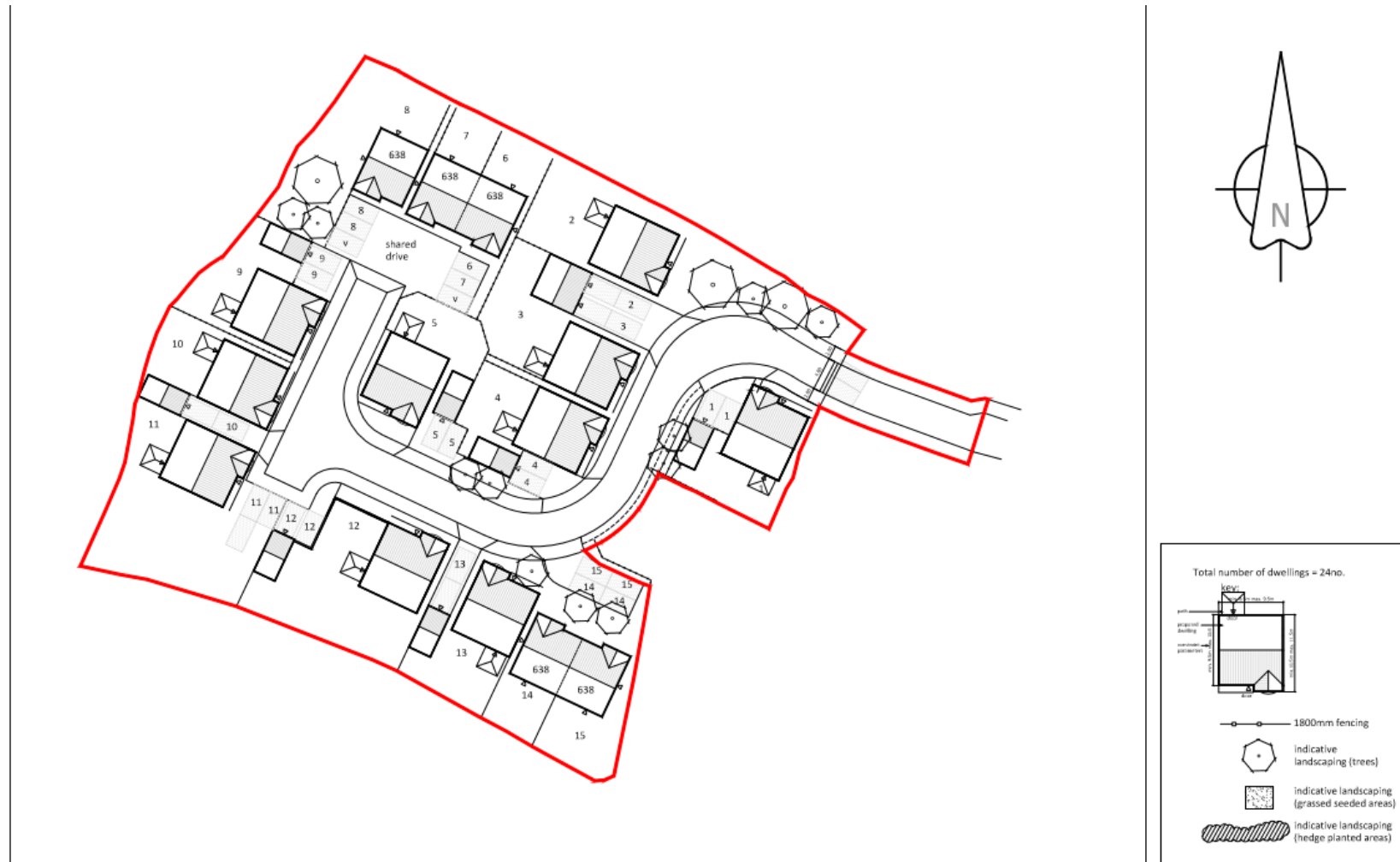
1 Introduction

- 1.1 This written scheme of investigation presents a methodology for archaeological geophysical survey of a proposed development site at Roman Road, Llangunnor, Carmarthen. The potential development site covers an area of around 0.53ha centred on NGR SN 4148 19155 (Figure 1 and 2). It is proposed that the development will include the construction of 15 bungalows and associated works.
- 1.2 In response to a pre planning consultation the archaeological advisor to the planning authority (Development Management – Dyfed Archaeological Trust) have recommended a pre-determination archaeological assessment of the site through the implementation of a geophysical survey.
- 1.3 To the east and north the proposed development site is bounded by existing residential developments, open fields lie to the south and to the west an allocated residential site, contained within the adopted Carmarthenshire Local Development Plan. The site is currently under pasture and the topography gently falls from east to west at a gradient of 1:10.
- 1.4 The proposed development site lies within the Historic Landscape Character area of 187: Croesyceiliog – Cwmffrwd, being a landscape enclosed into medium-sized fields of improved pasture. The ancient settlement pattern of dispersed farms is supplemented by more recent linear development along the main roads that radiate from Carmarthen.
- 1.5 The Historic Environment Record (HER) shows that there are no recorded heritage assets within the proposed development area. However the site does lie adjacent to a potential Roman road (PRN 218), as identified on historic Ordnance Survey mapping (1890 and 1906) and recorded during a survey of Roman roads in 2004. Documentary evidence (Rees' map of 14th century South Wales) also suggests a medieval settlement within the vicinity.
- 1.6 In 2011 an archaeological watching brief was undertaken during initial groundworks on the adjacent residential development, land at Brynheulog, which revealed a cobbled surface, of uncertain date, and a low earthwork, again of uncertain date, running parallel to the Roman road for some 155m (Ratty 2011; DAT Report 2011/43).
- 1.7 There is considered to be a high potential for archaeological remains to extend into the proposed development area that will be impacted upon by groundworks associated with the proposed development.
- 1.8 A geophysical survey should provide a better indication of the archaeological potential of the site through the identification of subsurface features which could be indicative of archaeology. It is proposed to undertake a gradiometer survey of the site, which, through the measurement of tiny variations in the earth's magnetic field, can indicate the presence of buried features such as ditches, pits, walls or postholes, which are not visible on the ground surface.

- 1.7 This WSI will need to be approved by the archaeological advisors to the planning authority (Dyfed Archaeological Trust – Development Management) to comply with the Chartered Institute for Archaeologists Code of Conduct (CIfA 2014). The specification is in accordance with the Chartered Institute for Archaeologists Standard and Guidance for archaeological geophysical survey (CIfA 2014).
- 1.8 The Trust always operates to best professional practice. DAT Archaeological Services has its own Health and Safety Policy, and all works are covered by appropriate Employer's Liability and Public Liability Insurances. Copies of all are available on request.
- 1.9 ***Dyfed Archaeological Trust is a CIfA Registered Organisation.***
- 1.10 ***All permanent staff members of DAT Archaeological Services are CSCS² registered.***

² *Construction Skills Certification Scheme (Health and Safety Tested)*





Land off Roman Road, Carmarthen.
1:500 @ A3. Drg number RR/01 19/12/17

Figure 2: Site plan (Provided by client).

2. AIM AND OBJECTIVES OF THE PROJECT

2.1 This document provides a scheme of works for:

The implementation of a geophysical survey using a gradiometer within the proposed development site at Llangunnor, Carmarthen. The results of the survey will be presented in a report and an archive will be prepared.

2.2 The following tasks will be completed:

- Provision of a written scheme of investigation to outline the methodology for the geophysical survey (this document);
- To identify the presence/absence of any potential archaeological deposits through an initial gradiometer survey;
- To establish the character and extent of any potential archaeological remains within the site area that could be affected by the proposed works;
- To prepare a report and archive on the results of the geophysical survey.

3. GEOPHYSICAL SURVEY METHODOLOGY

3.1 A fluxgate gradiometer will be used for the survey, which detects variations in the earth's magnetic field. Readings will be taken on traverses of 0.5m wide and every 0.25m within 20m x 20m grids across the site. The full area of the proposed development site will be surveyed, some 0.53ha in total. A Trimble TST will be used to tie the survey grid into the local Ordnance Survey grid.

Processing, presentation and interpretation

- 3.3 Processing will be performed using *TerraSurveyor 3.0*. The data will be presented with a minimum of processing. The presence of high values caused by ferrous objects, which tend to hide fine details and obscure archaeological features, will be 'clipped' to remove the extreme values allowing the finer details to show through.
- 3.4 The processed data will be presented as grey-scale plots overlaid on local topographical features. The main magnetic anomalies will be identified and plotted onto the local topographical features as a level of interpretation.
- 3.5 The resulting survey results and interpretation diagrams should not be seen as a definitive model of what lies beneath the ground surface, not all buried features will provide a magnetic response that can be identified by the gradiometer. In interpreting those features that are recorded the shape is the principal diagnostic tool, along with comparison with known features from other surveys. The intensity of the magnetic response could provide further information, a strong response for example indicates burning, high ferric content or thermoremnancy in geology. The context may provide further clues but the interpretation of many of these features is still largely subjective.
- 3.6 All measurements given will be approximate as accurate measurements are difficult to determine from fluxgate gradiometer surveys. The width and length of identified features can be affected by its relative depth and magnetic strength.
- 3.7 The interpretation diagrams will be used to identify the presence/absence of any potential archaeological deposits.

4 POST-FIELDWORK REPORTING AND ARCHIVING

- 4.1 A copy of the final report will be deposited with the regional HER within six months of the completion of the project.
- 4.2 All data recovered during the fieldwork will be collated into a site archive structured in accordance with the specifications in *Archaeological Archives: a guide to best practice in creation, compilation, transfer and curation* (Brown 2007), and the procedures recommended by the National Monuments Record, Aberystwyth. The *National Standards for Wales for Collecting and Depositing Archaeological Archives* produced by the Federation of Museums and Art Galleries of Wales will also be adhered to.
- 4.3 The report will be prepared to follow the relevant Chartered Institute for Archaeologists *Standards and Guidance* (CIfA 2014).

5 STAFF

- 5.1 The project will be managed by James Meek, Head of DAT Archaeological Services.
- 5.2 The on-site geophysical survey will be undertaken by Charlie Enright and Hubert Wilson, both experienced geophysical surveyors.

6 MONITORING

- 6.1 The site work may need to be monitored by the archaeological advisor to the planning authority. The works will also be monitored by the Project Manager.

7 HEALTH AND SAFETY

- 7.1 All permanent members of DAT Archaeological Services staff are CSCS³ registered.
- 7.2 DAT Archaeological Services will carry out a health and safety risk assessment to ensure that all potential risks are minimised.
- 7.3 All relevant health and safety regulations must be followed.
- 7.4 Gradiometer survey is a non-intrusive method of archaeological prospection. The process involves the laying out of grids across the site area which are then traversed with the gradiometer taking regular readings. Trip hazards are one of the main issues for such work.
- 7.5 Due to the nature of the survey surveyors are not able to wear any clothing with metal in (such as safety boots). Sturdy footwear is worn with no metal parts.
- 7.6 The developer will make all site staff aware of any other PPE⁴ that may be required.

BIBLIOGRAPHY

Ratty, S., 2011. Land At Brynheulog, Roman Road, Llangunnor, Carmarthen: Archaeological Watching Brief. DAT Report No. 2011/43).

³ Construction Skills Certification Scheme (Health and Safety Tested)

⁴ Personal Protection Equipment

LAND AT ROMAN ROAD, LLANGUNNOR, CARMARTHEN GEOPHYSICAL SURVEY 2018

RHIF YR ADRODDIAD / REPORT NUMBER: 2018-15

RHIF Y PROSIECT / EVENT RECORD NO. 112036

Ebrill 2018

Aprill 2018

Paratowyd yr adroddiad hwn gan / This report has been prepared by

Charles Enright

Swydd / Position: **Archaeologist DAT Archaeological Services**

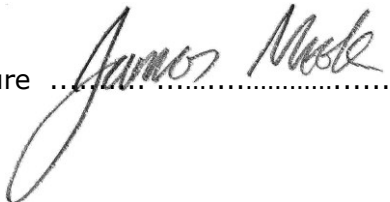
Llofnod / Signature  Dyddiad / Date 20/04/2018

Mae'r adroddiad hwn wedi ei gael yn gywir a derbyn sêl bendith
This report has been checked and approved by

James Meek

ar ran Ymddiriedolaeth Archaeolegol Dyfed Cyf.
on behalf of Dyfed Archaeological Trust Ltd.

Swydd / Position: **Head of DAT Archaeological Services**

Llofnod / Signature  Dyddiad / Date 27/04/2018

Yn unol â'n nôd i rododi gwasanaeth o ansawdd uchel, croesawn unrhyw sylwadau
sydd gennych ar gynnwys neu strwythur yr adroddiad hwn

As part of our desire to provide a quality service we would welcome any
comments you may have on the content or presentation of this report

