

Archaeology Wales

Land adjacent to Imble Lane, Pembroke Dock.

Geophysical Survey



By
Phil Poucher

Report No. 1184



Archaeology Wales Limited,
Rhos Helyg, Cwm Belan,
Llanidloes, Powys SY18 6QF
Tel: +44 (0) 1686 440371
E-mail: admin@arch-wales.co.uk

Archaeology Wales

Land adjacent to Imble Lane, Pembroke Dock, Pembrokeshire

Archaeological Evaluation

Prepared For: Pembrokeshire Housing

Edited by: Mark Houlston
Signed: *Mark Houlston*
Position: Managing Director
Date: 11/3/14

Authorised by: Mark Houlston
Signed: *Mark Houlston*
Position: Managing Director
Date: 18/3/14

By
Dr Iestyn Jones

Report No. 1184a

March 2014



Archaeology Wales Limited,
Rhos Helyg, Cwm Belan,
Llanidloes, Powys SY18 6QF
Tel: +44 (0) 1686 440371
E-mail: admin@arch-wales.co.uk

Contents

1. Introduction	1
2. Site Location and Archaeological Potential	1
3. Methodology	2
4. Survey Results	3
4.1 Limitations	3
4.2 Survey Results	3
5. Discussion and Recommendations	4
6. Acknowledgements	5

List of Illustrations

- Fig. 1 Location of Site
- Fig. 2 Processed Geophysical Survey Results
- Fig. 3 Interpretation of Geophysical Survey Results

Copyright Notice: Archaeology Wales Ltd. retain copyright of this report under the Copyright, Designs and Patents Act, 1988, and have granted a licence to Pembrokeshire Housing Association to use and reproduce the material contained within.

The Ordnance Survey has granted Archaeology Wales Ltd a Copyright Licence (No. AL52163A0001) to reproduce map information; Copyright remains otherwise with the Ordnance Survey.

Summary

In November 2013 Archaeology Wales carried out a Geophysical Survey on a site of proposed housing development adjacent to Imble Lane, Pembroke Dock, Pembrokeshire. The site had been highlighted as having high archaeological potential due to its location within a significant historic landscape and the presence of several sites dating to WW2 in the local area. The geophysical survey revealed two possible structures of modern date (possibly related to the use of the site in the Second World War), two linear features of unknown date and a number of anomalies interpreted as natural or modern. As a result of the geophysical survey a programme of evaluation trenching is being proposed.

1. Introduction

In November 2013, Archaeology Wales was commissioned to undertake a Geophysical Survey on the site of a proposed housing development adjacent to Imble Lane, Pembroke Dock, Pembrokeshire. The proposed development comprises the construction of around 80 dwellings, both houses and flats, and associated infrastructure. The development proposal has been submitted by Pembrokeshire Housing Association. The local planning authority is Pembrokeshire County Council and the planning application number is 12/0708/PA. The site is located at SM 9715 0268 (Figure 1).

A previous archaeological Desk-Based Assessment (Pannett 2012, Archaeology Wales Report No. 1063) identified several potential archaeological deposits within the site, including a number of possible WW II military features, and considered the archaeological potential of the site to be high. As a result Dyfed Archaeological Trust Planning Services (Henceforth – DAT-PS), in their capacity as archaeological planning advisors to Pembrokeshire County Council (Henceforth – PCC) recommended that a staged approach of archaeological investigation should be adopted for the site, beginning in the first instance of a programme of geophysical survey. The purpose of this work should be to identify areas of high archaeological potential which could then be avoided within the development. In areas that cannot be avoided further more intrusive archaeological investigations may be required.

Consequently, Pembrokeshire County Council have granted outline planning permission in February 2013 subject to a number of conditions, including an archaeological condition (condition 18) that states:

No development shall take place until the applicant, or their agents or successors in title, has secured the implementation of a programme of archaeological work. This shall be in accordance with a written scheme of investigation which has been submitted and approved in writing by the Local Planning Authority. Reason: To ensure the recording of any items of archaeological interest to accord with Policy 84 of the Joint Unitary Development Plan for Pembrokeshire (adopted 13 July 2006).

The Geophysical Survey was undertaken in November 2013 by Hywel Keen and Phil Poucher.

2. Site Location and Archaeological Potential

The site lies on gently sloping south-facing ground 1km to the south-east of the centre of Pembroke Dock, at around 47m AOD. The site is bounded to the south and west by

Imble Lane, to the north by a cricket ground and to the east by hedgerows separating it from adjacent fields. The site is currently under pasture.

A previous archaeological Desk-Based Assessment has been undertaken on the site by Archaeology Wales in 2012 (Pannett 2012). The desk-based assessment has revealed that the proposed development site lies within an historically and archaeologically significant area of Pembrokeshire. Sites dating from the prehistoric period to the modern day are recorded within 2km, including a several Scheduled Ancient Monuments and a large number of Listed Buildings. Pembroke Castle, the most significant of the sites within the study area is clearly visible from the proposed development site. The majority of the remains located within the immediate vicinity of the field proposed for development are modern in date, associated with the extensive World War II defences along the Pembrokeshire coast. A radio station was located immediately to the north of the site, now occupied by the cricket club, together with an air raid shelter. Less than 500m to the west are the site of a former military camp and the location of a barrage balloon and emergency water supply. The site is, therefore, located within the heart of the military operations in Pembroke Dock. The four concrete settings and some of the undulations identified in the field during the site visit could also be military in origin, although their function could not be ascertained. The cartographic evidence suggests that prior to World War II the site had been in agricultural use, probably throughout the post-medieval period and perhaps even earlier. The relatively ancient hedgebank along Imble Lane, and the irregular, curved shape of the field suggests that it may be medieval in origin. There are a number of significant prehistoric sites within 2km of the proposed development site, and it is possible that this part of the landscape was also exploited during prehistory. Given the large number of archaeological features within the local area, the proximity of several nationally significant prehistoric, medieval and modern sites and the possibility of military remains on the site, the archaeological potential of the proposed development site can be considered to be high.

The south-eastern side of the site lies on Devonian Conglomerate whilst the north-western side lies on Silurian Sandstone.

3. Methodology

The area surveyed included all of the development area. The site was located by GPS and all survey points were located with a Topcon GRS 1 GPS surveyor and plotted onto an O.S. base map.

The on-site survey was undertaken in a single phase lasting approximately three days. A preliminary report (this document) has been prepared prior to the full analysis of all available data to highlight any potential issues at an early date. A full detailed report will be produced in due course.

The survey was carried out using a pair of Bartington Grad601 Magnetometers. Each survey area was divided into 30m square grids along a common north –south **alignment. This detects variations in the earth's magnetic field.**

Within each grid, parallel traverses 0.5m apart were walked at rapid pace along the same orientation. Instrument readings were logged at 0.25m intervals, with an average cycle of 4 using an ST1 internal sample trigger. Incomplete survey lines resulting from irregular area boundaries or obstacles were completed using the "dummy log" key.

All data was downloaded in the field into a laptop computer. The location of the grid corners will be recorded using a Topcon GRS 1 GPS surveyor so that results can be accurately placed onto an OS map.

A composite of each detailed survey area was created and processed using the software package Terrasurveyor. A variety of processing tools will be used to enhance any potential archaeology. The final results are presented at an appropriate scale tied to the Ordnance Survey National Grid.

4. Survey Results

4.1 Limitations

The survey was undertaken over a three days in November and December 2013. Weather conditions were cool and dry. The field had been used for pasture, seemingly mainly for horses as horse jumps were embedded in the ground.

The field was bounded to the north, west and south by post and wire fencing which is likely to obscure readings taken in its immediate vicinity, therefore the survey was only carried out to within 5m of the boundary. Overhead power lines crossed the field in a roughly east – west direction, other than the posts themselves this does not appear to have caused any distortion to the readings taken below. Towards the eastern end of the field the ground became water-logged, limiting the ability to survey in specific areas. The eastern boundary of the field was also more generally overgrown. Various metallic items were visible within the field, including barbed wire and metal posts, all of which are likely to obscure readings taken in their immediate vicinity.

The underlying geology of Devonian Conglomerate and Silurian Sandstone do not appear to cause any geological distortions of the geophysical survey results.

4.2 Processing and presentation

Processing was performed using the latest version of *Terrasurveyor*. The data is presented with a minimum of processing but the presence of high values caused by ferrous objects and wire fencing tends to hide fine details and obscure archaeological features, thus the values were 'clipped' to a range from 10nT to –10nT to remove the extreme values allowing the finer details to show through.

The processed data is presented as grey-scale plots overlaid on local topographical features (Fig. 2). The main magnetic anomalies have been identified and plotted onto local topographical features as a level of interpretation (Fig. 3).

4.3 Survey Results

Several straight linear features are visible on the results crossing the field in a roughly north – south direction. The linearity and strength of the magnetic readings suggests these represent modern (later 20th century) services.

Towards the eastern end of the field a similar linear feature is visible, although with relatively weaker magnetic readings. This feature is visible on the surface as a drainage

channel for a former pond (which lies in the un-surveyed area immediately to the north). The ground to the east of this appears larger disturbed, possibly associated with a mains gas pipeline that runs through the easternmost part of the field.

The northeast corner of the field produced very strong mixed readings. On the surface it appears that large deposits of material have in the past been bulldozed across and dumped in this corner, giving the strong mixed readings.

In the western part of the field several strong discrete magnetic signals appear to indicate buried metallic objects. These readings however appear to form the possible outline of a structure. The metallic readings would suggest a relatively modern features, but in the context of the known history of this area it is possible this may relate to WWII activity.

Similarly towards the southern end of the field are four iron posts set in concrete bases. These are visible on the surface of the field, and are shown on the survey results as four discrete points of strong magnetic responses. The strength of the readings has **produced a circular 'shadow', this is not representative** of a circular feature.

Immediately to the northwest of this feature is a curvilinear feature, the magnetic readings suggesting a cut feature such as a ditch. Also extending in a SW direction from this is a similar linear feature (not depicted on Fig.2). It is not clear at this stage if this is an archaeological feature or relates to one of the many horse-jumps built on the site.

Spread throughout the field are several strong magnetic readings, depicted as black area surrounded by a white shadow. These are likely to be metallic objects, typically of relatively recent origin.

Extending from the NW corner of the field in an ESE direction are relatively faint linear features. These are likely to be responses caused by the underlying geology.

5. Discussion and Recommendations

The geophysical survey was undertaken to investigate the possibility that significant archaeological remains survived on the site. The site lies within a historically significant landscape with known archaeological remains dating from the prehistoric period to the Second World War recorded within 1km of the site. The site visit undertaken as part of the desk-based assessment, had revealed features of potential archaeological interest on the ground, including a setting of four concrete posts thought to be part of a structure.

The results of the geophysical survey have revealed a number of features of archaeological potential within the proposed development area. These include the potential structure identifiable by the four concrete posts. A further potential structure is located on the western side of the site, and it is possible that both of these relate to the use of the site during WW2.

Two curved linear features were also revealed by the geophysical survey, one extending northwards from the four concrete posts, the second to the north-west, surrounding a sunken area. These could be ditches associated with the modern use of the site, or could relate to earlier activities.

Further anomalies include a number of possible pieces of buried metal, modern service trenches and a modern drain, and a line of possible geology through the centre of the site.

It is recommended that an evaluation is carried out to investigate the archaeological potential of the two possible structure, the two linears and one of the possible metal items. In addition, it is recommended that the possible geology is investigated, to confirm that it is not archaeological.

6. Acknowledgements

Thanks to Hywel Keen for carrying out the survey.

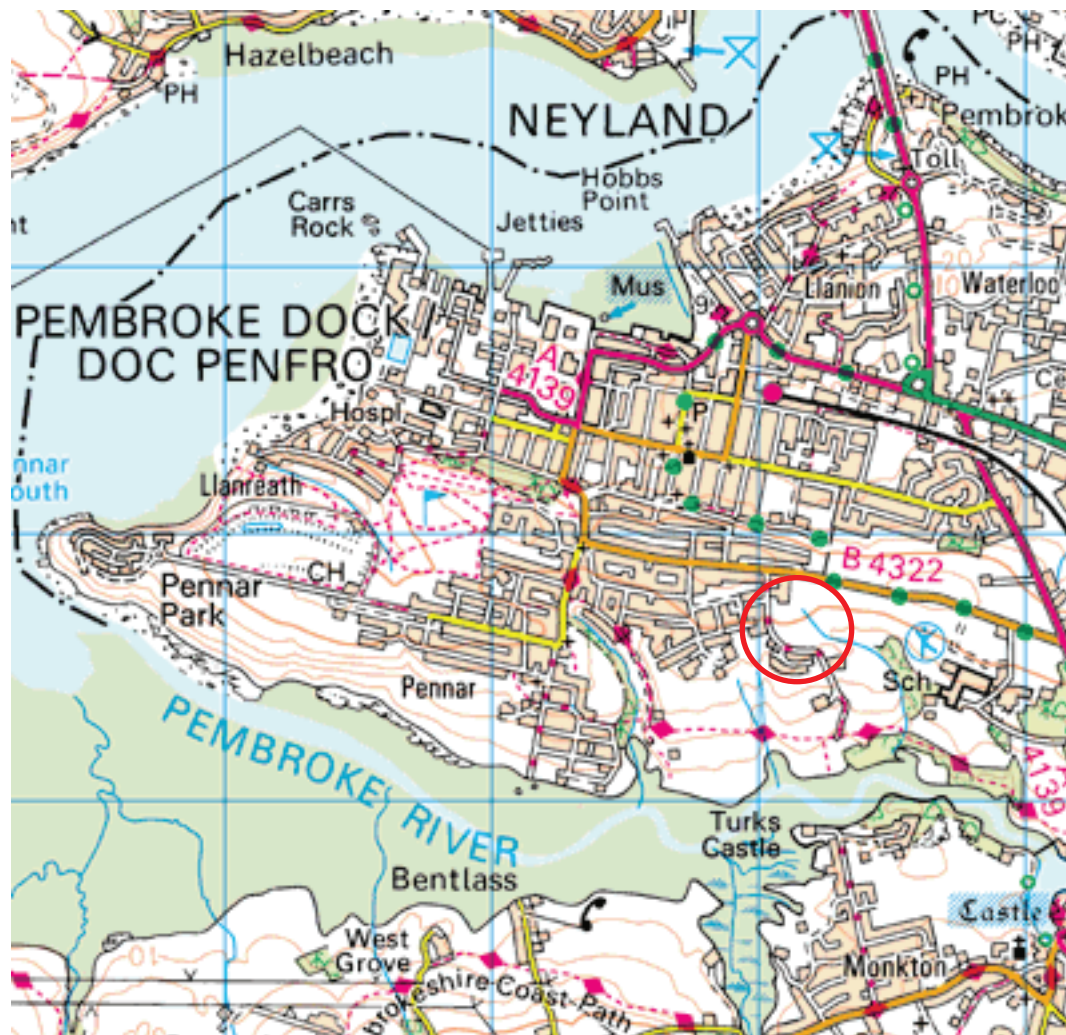
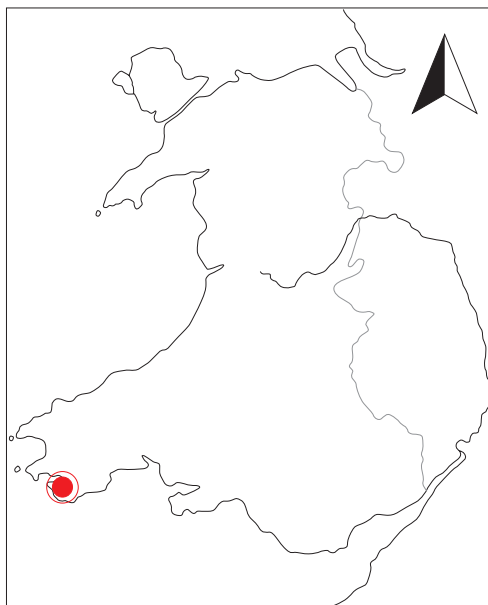


Fig. 1
Location of
site



Fig. 2
Processed
geophysical survey
results

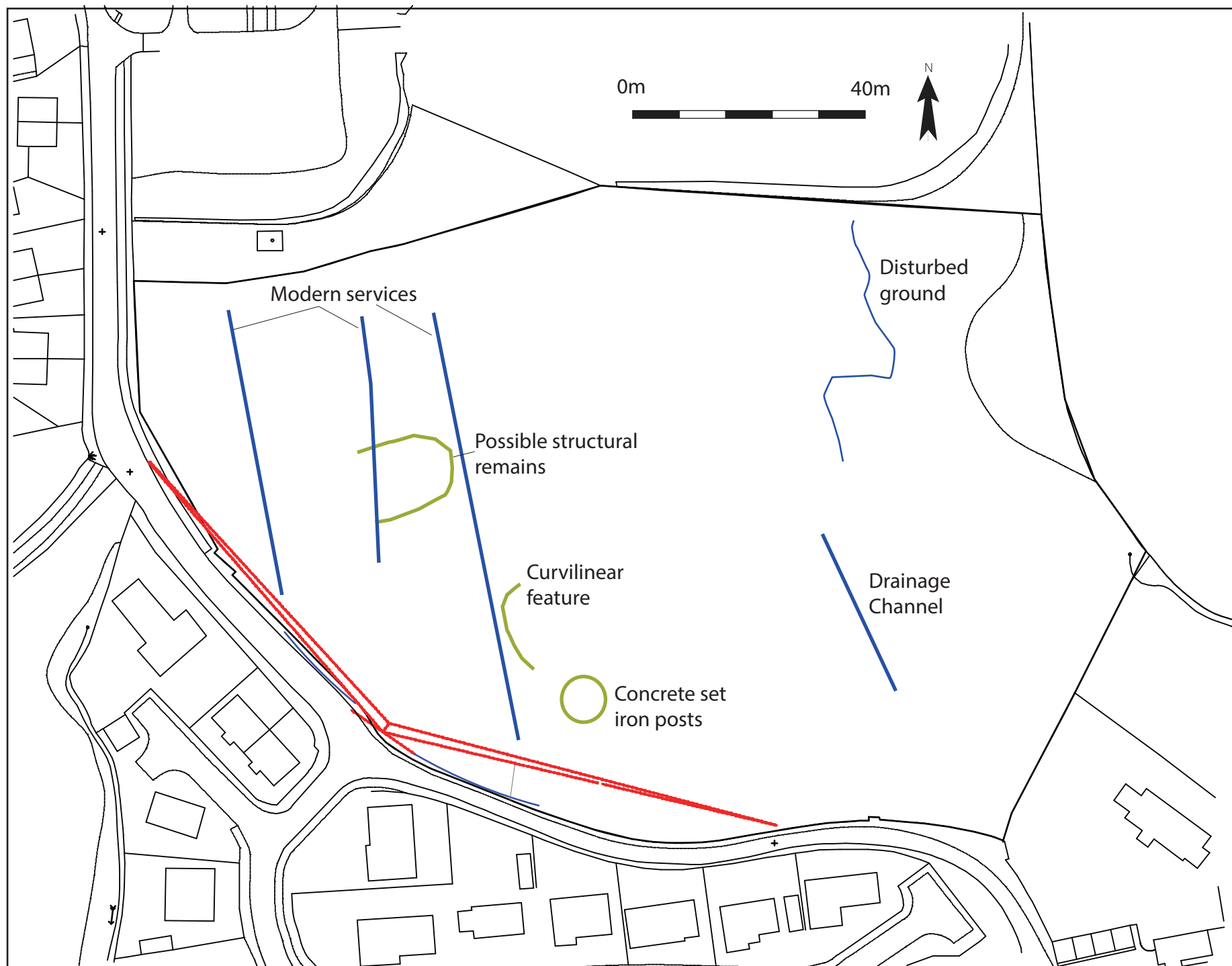


Fig. 3
Interpretation
of geophysical
survey results

Archaeology Wales



Archaeology Wales Limited

Rhos Helyg, Cwm Belan, Llanidloes, Powys SY18 6QF

Tel: +44 (0) 1686 440371

Email: admin@arch-wales.co.uk

Company Directors: Mark Houlston MIFA & Jill Houlston

Company Registered No. 7440770 (England & Wales).

Registered office: Morgan Griffiths LLP, Cross Chambers,
9 High Street, Newtown, Powys, SY16 2NY