

Rhug Estate Solar Panels

Archaeological Watching Brief



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Archaeological Watching Brief

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Prepared for: Cadnant Planning Ltd

December 2015

Written by: Stuart Reilly

Cyhoeddwyd gan Ymddiriedolaeth Archaeolegol Gwynedd
Ymddiriedolaeth Archaeolegol Gwynedd
Craig Beuno, Ffordd y Garth,
Bangor, Gwynedd, LL57 2RT

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Cadeiryddes/Chair - Yr Athro/Professor Nancy Edwards, B.A., PhD, F.S.A.
Prif Archaeolegydd/Chief Archaeologist - Andrew Davidson, B.A., M.I.F.A.

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View from south. 1x1m scale.

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Plate 06: View of trench by the second transformer showing concentration of pebble gravel. View from west. 1x1m scale.

SUMMARY

*Gwynedd Archaeological Trust (GAT) was asked by Cadnant Planning Ltd to conduct an archaeological watching brief on the Rhug Estate Farm, Corwen (centred on NGR **SJ05424344**). The watching brief monitored the excavation of cable trenches associated with the construction of a 285kW solar farm.*

The archaeological watching brief uncovered naturally deposited layers of alluvium, that were particularly evident along the cable trench of the second transformer and approximately half of the cable trench of the first transformer, which is to be expected given that the groundworks were conducted within the flood plain of the Afon Alwen. The one exception was the organic layer of soft dark brownish black silty clay uncovered in the cable trench associated with the first transformer. This deposit was more reminiscent of an area of soft, wet ground or of a silted up water course. This is plausible given the cable trench was excavated close to the Afon Camddwr, which is located to the immediate east of the Rhug Estate farm buildings.

The cable trenches were deliberately excavated close to the existing wire and post fences to avoid the adjacent cropmarks (NPRN 309,392). No archaeological features associated with the cropmarks and no new archaeological deposits were uncovered during the excavation of the cable trenches associated with the construction of the solar farm.

1 INTRODUCTION

Gwynedd Archaeological Trust (GAT) was asked by *Cadnant Planning Ltd* to conduct an archaeological watching brief on the Rhug Estate Farm, Corwen (centred on NGR **SJ05424344**). The watching brief monitored groundworks associated with the construction of a 285kW solar farm (Figure 1). The solar farm is located to the rear of a large agricultural shed and paddock to the rear adjoining a stock proof fence. There will be a seven metre distance between banks of solar arrays and also to the boundary stock proof fencing (Figure 1). The solar panels will consist of solar cells (991mm wide x 1650mm long) arranged in two rows (arrays 991mm wide x 3420mm long) running across the site from west to east. The arrays will be set out in four banks and the panels will be sat on two poles bolted into concrete pads; the pads will not penetrate the ground, which will be left as pasture. The energy will feed into two existing transformers (cf. Figure 1), with all cables running from the array to the transformers buried underground.

The scheme was monitored by the Clwyd Powys Archaeological Trust (CPAT) curatorial archaeologist. The CPAT curatorial archaeologist had stated that a comprehensive watching brief was required during the excavation of the cable trenches; a watching brief is not required during the installation of the panels and array. The comprehensive watching brief was required due to the presence of cropmarks within the area of the solar farm. The cropmarks are designated as National Primary Record Number (NPRN) 309,392 and were identified from aerial photography (Figure 2). The provenance of cropmarks is unknown, but they may represent a Roman military site or enclosure (CPAT email correspondence dated 01/12/15). A written scheme of investigation (WSI) was prepared by GAT in advance of the watching brief (December 2015; cf. [Appendix I](#)); the WSI was approved by CPAT prior to the start of works (7th December 2015) The watching brief conformed to the guidelines specified in *Standard and Guidance for an archaeological watching brief* (Chartered Institute for Archaeologists, 2014). Gwynedd Archaeological Trust is a Chartered Institute for Archaeologists *Registered Archaeological Organisation*.

2 METHODOLOGY

2.1 Watching Brief

(Reproduced from Chartered Institute for Archaeologists 2014, *Standard and Guidance for an Archaeological Watching Brief*)

The definition of an archaeological watching brief is a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site on land, inter-tidal zone or underwater, where there is a possibility that archaeological deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive.

This definition and Standard do not cover chance observations, which should lead to an appropriate archaeological project being designed and implemented, nor do they apply to monitoring for preservation of remains in situ.

An archaeological watching brief is divided in to four categories according the Institute for Archaeologists *Standard and Guidance for an archaeological watching brief*:

- comprehensive (present during all ground disturbance)
- intensive (present during sensitive ground disturbance)
- intermittent (viewing the trenches after machining)
- partial (as and when seems appropriate).

A **comprehensive watching brief** was required by CPAT during the excavation of the cable trenches; a watching brief was not required during the installation of the panels and array. *CPAT requested that a toothless bucket was used during the excavation of the cable trench and that excavations were completed in sequential layers.*

The groundworks were completed by *Martin McCormack* (Retherm, Unit D1, Trentham, Business Quarter, Bellringer Road, Trentham, Stoke-on-Trent, Staffordshire ST4 8GB).

The cable trench excavation was conducted on Monday 7th December 2015 with 1No GAT archaeologist in attendance. Contrary to the archaeological project design and the information forwarded to GAT from Cadnant Planning only two cable trenches were excavated from the transformers to the location of the solar panel array. The transformer cable trenches extended south and west from the first transformer adjacent to the Estate Office and south and east from the second transformer, located to the west of the cattle sheds (Figure 2). The transformer cable trenches followed and were immediately adjacent to the existing wire and wooden post fences. The three cable trenches that were to be excavated behind each row of panels for the length of the panel run were not excavated as the client wanted to keep the excavation work associated with the solar panel array to

a minimum given the close proximity of the cropmarks (per. coms Philip Hughes, managing director of the Rhug Estate).

2.2 Basic watching brief methodological procedures

- Observation of non-archaeological excavation works associated with the transformer cable trenches of the solar farm.
- A written and photographic record of the excavation of the transformer cable trenches was maintained.
- Preparation of full archive report.
- Photographic images were taken with a digital SLR (Nikon D40) camera set to maximum resolution (3008 × 2000 6.1 effective megapixels) in RAW format and will be converted to TIFF and JPEG format for archiving.
- A day record sheet and photographic record sheet were completed using GAT proformas. A complete table of metadata with details of each photographic image taken, including descriptions and directions of shot, were produced using Microsoft Access (archive images G2450_Rhug Estate Solar Panels_001 to G2450_Rhug Estate Solar Panels _014; see [Appendix II](#) for a reproduction of the metadata).

3 RESULTS OF WATCHING BRIEF

The watching brief comprised of monitoring the excavation of two cable trenches to link two transformers with the solar panel array (Figure 1). The trenches were excavated by a 360° excavator fitted with a narrow toothless trenching bucket (Plate 01). The trenches had an approximate length of 90m, a depth of 1.0m and width of 0.50m.

The first transformer was located in a field to the immediate south west of the Estate Office, with the cable trench extending south and west to connect with the solar panel array (Figure 1; Plate 02). The excavation of the cable trench revealed a variety of deposits along its 90m length. Adjacent to the transformer and within 20m of it, there were three distinct layers exposed by the trench. A thin (0.20m) layer of topsoil, which consisted of a cohesive, fine mid brown silty clay overlaid a layer of fine, cohesive light brownish yellow clay which had a depth of 0.40m and was mixed with tree roots and the occasional small stone. It sealed a layer of loose, coarse light brown pebble gravel, which had an exposed depth of 0.40m.

As the cable trench turned west, to extend parallel with an existing wire and post fence (Figure 1), the ground conditions changed, with four deposits being evident. The topsoil consisted of a cohesive, fine mid brown silty clay with a depth of 0.10m. It overlaid a thin (0.10m) layer of redeposited soft, plasticity light brown clay with no inclusions, which in turn sealed an organic layer of soft, cohesive dark brownish black clayey silt that had a depth of 0.60m. It was mixed with moderate amounts of modern debris, such as, metal cables, broken pieces of farm machinery and red brick fragments. The basal layer of this section of the trench consisted of a compact, cohesive light grey clay deposit with no inclusions. These four layers were evident for an approximate distance of 30m.

The remaining 40m of this cable trench was excavated through more compact ground which consisted of three distinct layers (Plate 03). The topsoil was 0.20m deep and consisted of a cohesive, fine mid brown silty clay. It sealed a compact, cohesive light greyish brown silty clay mixed with infrequent plant roots and small stones and it had a depth of 0.50m. The basal layer had an exposed depth of 0.20m and was comprised of a cohesive, plasticity light grey clay with infrequent sporadic inclusions of rotten stone and fine black gravel.

The second transformer was located at the western edge of the cattle sheds, with the associated cable trenching extending 90m to the south and east to connect with the solar panel array (Figure 1; Plate 04). This section of cable trench uncovered four distinct layers. The shallow topsoil (0.10m) was a cohesive, fine mid brown silty clay. Beneath the topsoil there was a layer of fine, cohesive light brownish yellow silty clay mixed with the occasional small, rounded stone which sealed a band of loose, coarse dark brownish black pebble gravel. The depth of the silty clay and pebble gravel varied as the cable trench was excavated south, the former had an average depth of 0.40m (Plate 05), while the latter was between 0.20 to 0.40m (Plate 06). The basal layer of the cable trench consisted of a compact, plasticity light greyish blue silty clay.

4 CONCLUSIONS

Gwynedd Archaeological Trust (GAT) was asked by *Cadnant Planning Ltd* to conduct an archaeological watching brief on the Rhug Estate Farm, Corwen. The watching brief monitored the excavation of cable trenches associated with the construction of a 285kW solar farm (Figure 1).

The archaeological watching brief uncovered naturally deposited layers of alluvium, that were particularly evident along the cable trench of the second transformer and approximately half of the cable trench of the first transformer, which is to be expected given that the groundworks were conducted within the flood plain of the Afon Alwen. The one exception was the organic layer of soft dark brownish black silty clay uncovered in the cable trench associated with the first transformer. This deposit was more reminiscent of an area of soft, wet ground or of a silted up water course. This is plausible given the cable trench was excavated close to the Afon Camddwr, which is located to the immediate east of the Rhug Estate farm buildings.

The cable trenches were deliberately excavated close to the existing wire and post fences to avoid the adjacent cropmarks (NPRN 309392; Figure 2). No archaeological features associated with the cropmarks and no new archaeological deposits were uncovered during the excavation of the cable trenches associated with the construction of the solar farm.

5 REFERENCES

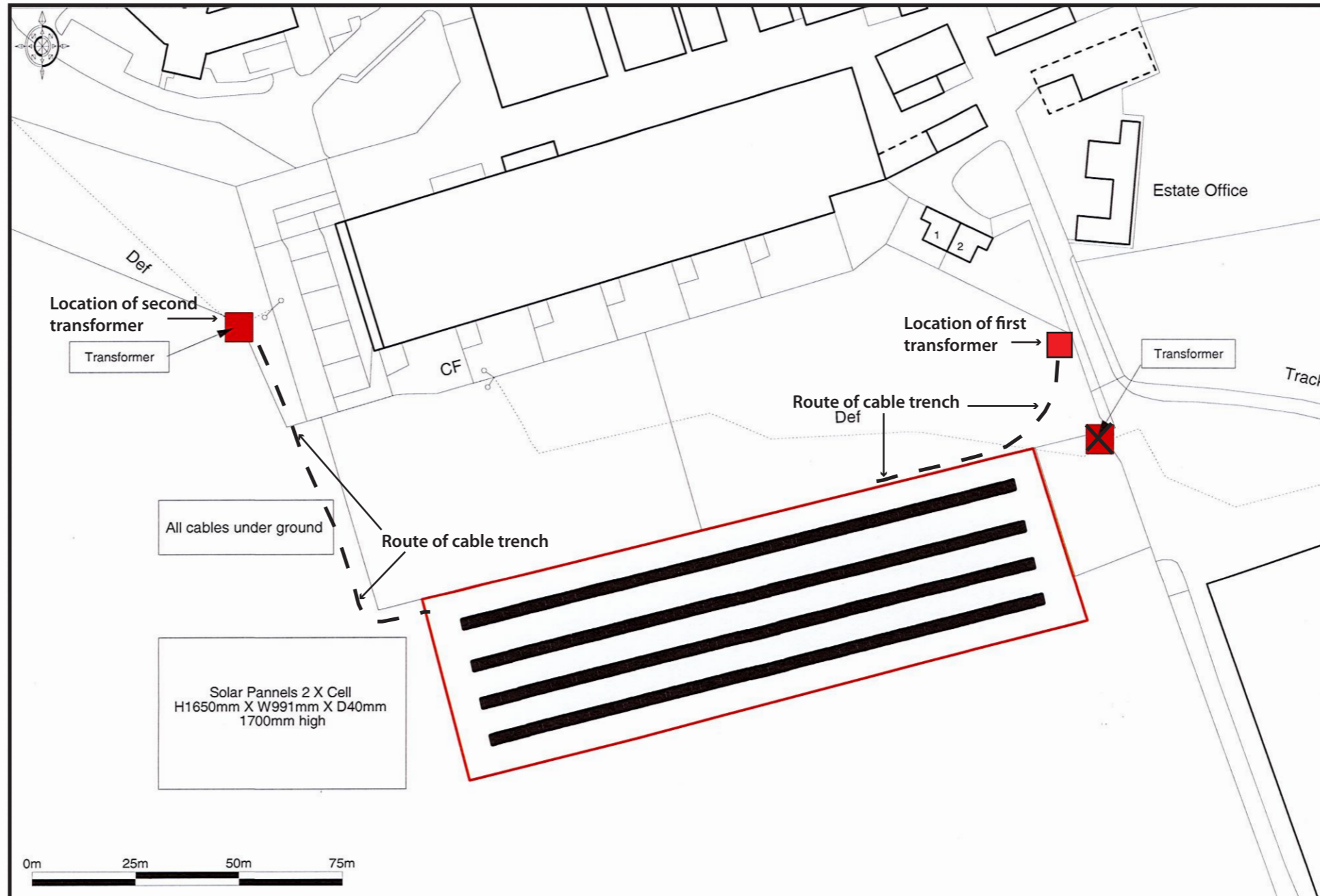
Cadnant Planning Limited, Design And Access Statement for the Installation of 285KW PV Panels at Rhug Estate Farm (June 2015).

Chartered Institute for Archaeologists 2014 *Standards and Guidance for an archaeological watching brief*;

6 FIGURE 1

6.1 Location of the transformers, cable trenches and proposed location of solar panels.

Rhug Estate



Ordnance Survey © Crown Copyright 2015. All rights reserved. Licence number 100022432. Plotted Scale - 1:1250

Cadnant Planning

Figure 1: Location of the transformers, cable trenches and proposed location of solar panels.

7 FIGURE 2

7.1 Reproduction of aerial photograph and highlighted cropmark (NPRN 309,392)



Figure 2: Reproduction of aerial photograph and highlighted cropmark (NPRN 309,392).



Plate 01: Working shot of trench by the second transformer (west side of site) during excavation. View from south; 1x1m scale.



Plate 02: Excavated trench by the first transformer (east side of site). View from west; 1x1m scale.



Plate 03: South facing section of trench by first transformer (east side of site). View from south;1x1m scale.



Plate 04: Trench by second transformer (west side of site) after excavation. View from south;1x1m scale.



Plate 05: East facing section of trench by the second transformer. View from west;1x1m scale.



Plate 06: View of trench by the second transformer showing concentration of pebble gravel. View from west;1x1m scale.

8 APPENDIX I

8.1 Reproduction of Gwynedd Archaeological Trust written scheme of investigation, December 2015.

RHUG ESTATE SOLAR PANELS

PROJECT DESIGN FOR AN ARCHAEOLOGICAL WATCHING BRIEF (G2450)

Prepared for

Cadnant Planning Ltd

December 2015

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust




RHUG ESTATE SOLAR PANELS

PROJECT DESIGN FOR AN ARCHAEOLOGICAL WATCHING BRIEF (G2450)

Prepared for Cadnant Planning Ltd, December 2015

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Revision History			
Rev No.	Summary of Changes	Ref Section	Purpose of Issue

1 INTRODUCTION

Gwynedd Archaeological Trust (GAT) has been asked by *Cadnant Planning Ltd* to provide a project design for undertaking an archaeological watching brief at Rhug Estate Farm, Corwen (centred on NGR **SJ05424344**). The watching brief will monitor groundworks associated with the construction of a 285kW solar farm (Figure 1). The solar farm is located to the rear of a large agricultural shed and paddock to the rear adjoining a stock proof fence. There will be a seven meter distance between banks of solar arrays and also to the boundary stock proof fencing (Figure 1). The solar panels will consist of solar cells (991mm wide x 1650mm long) arranged in two rows (arrays 991mm wide x 3420mm long) running across the site from west to east. The arrays will be set out in four banks and the panels will be sat on two poles bolted into concrete pads; the pads will not penetrate the ground, which will be left as pasture. The energy will feed into two existing transformers (cf. Figure 1), with all cables running from the array to the transformers buried underground. There will be 3No 150mm wide and 500mm deep (max) trenches running behind each row of panels for the length of the panel run, along with the two cables running from the array to the transformers.

The scheme will be monitored by the Clwyd Powys Archaeological Trust (CPAT) curatorial archaeologist. The CPAT curatorial archaeologist has stated that a comprehensive watching brief is required during the excavation of the cable trenches; a watching brief is not required during the installation of the panels and array. The comprehensive watching brief is required due to the presence of cropmarks within the area of the solar farm. The cropmarks are designated as National Primary Record Number (NPRN) 309,392 and were identified from aerial photography (Figure 2). The provenance of cropmarks is unknown, but they may represent a Roman military site or enclosure (CPAT email correspondence dated 01/12/15). The watching brief will conform to the guidelines specified in *Standard and Guidance for an archaeological watching brief* (Chartered Institute for Archaeologists, 2014). Gwynedd Archaeological Trust is a Chartered Institute for Archaeologists *Registered Archaeological Organisation*. The format of this design corresponds to the requirements of section 2.3 of MoRPHE (English Heritage 2015) and to MAP2 (English Heritage, 1991, *Management of Archaeological Projects*).

2 METHODOLOGY

2.1 Watching Brief

(Reproduced from Chartered Institute for Archaeologists 2014, *Standard and Guidance for an Archaeological Watching Brief*)

The definition of an archaeological watching brief is a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site on land, inter-tidal zone or underwater, where there is a possibility that archaeological deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive.

This definition and Standard do not cover chance observations, which should lead to an appropriate archaeological project being designed and implemented, nor do they apply to monitoring for preservation of remains in situ.

An archaeological watching brief is divided into four categories according to the Institute for Archaeologists *Standard and Guidance for an archaeological watching brief*:

- comprehensive (present during all ground disturbance)
- intensive (present during sensitive ground disturbance)
- intermittent (viewing the trenches after machining)
- partial (as and when seems appropriate).

A **comprehensive watching brief** is required by CPAT during the excavation of the cable trenches; a watching brief is not required during the installation of the panels and array. *CPAT have requested that a toothless bucket is used during the excavation of the cable trench and that excavations are completed in sequential layers.*

The groundworks will be completed by *Martin McCormack* (Retherm, Unit D1, Trentham, Business Quarter, Bellringer Road, Trentham, Stoke-on-Trent, Staffordshire ST4 8GB).

The works are scheduled for early December 2015, with 1No GAT archaeologist in attendance. The cable trenches to be monitored will be the 3No trenches that run behind each row of panels for the length of the panel run and the two cable runs from the each

side of the array to the two transformers located on Figure 2. The transformer cables will follow the fence lines to the south, east south and west of the poultry sheds. The cable trenches are expected to be 150mm wide and between 300mm and 500mm in depth.

2.2 Basic watching brief methodological procedures

- All attendances and identified features will be recorded using GAT pro-formas.
- Photographic images will be taken using a digital SLR (Panasonic DMC-FZ72) camera set to maximum resolution (4608 x 3456 16 effective megapixels) in RAW format and will be converted to JPEG and TIFF formats for reporting and archiving respectively using Adobe Photoshop image processor;
- Any subsurface remains will be recorded photographically, with detailed notations and a measured survey.
- All archaeological features/deposits encountered will be manually cleaned and examined to determine extent, function, date and relationship to adjacent features. Limited excavation will be undertaken to characterise the features/deposits: this strategy will be based on feature type and may include 100% of more significant features such as graves; an initial 50% sample of sub-circular features, spreads and hearths; and 10% sample of linear features. Any subsequent excavation required will be detailed in an appropriate **Further Archaeological Works Design**.
- The extent of any identified archaeological activity including artefacts will be located using survey grade (not handheld) GPS with <10cm accuracy (model: *Trimble GNSS/R6/5800*).
- All sections to be drawn at a minimum 1:10 scale.
- All plans to be at a minimum 1:20 scale.
- Should dateable artefacts and ecofacts be recovered, an interim report will be submitted summarising the results, along with an assessment of potential for analysis specification (in line with the MAP2 process).

2.3 Environmental Samples

Any deposits deemed suitable for dating will be taken from sealed contexts, with bulk samples from ditches and pit fills proposed as not less than 10 litres from each context. The sampling strategy will be undertaken in accordance with the principles set out in *Environmental Archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation* (English Heritage, 2011). Recourse will be made to relevant specialists for palaeoenvironmental analysis and dating. Any required specialists will be consulted during the watching brief to advise GAT on a sampling strategy.

2.4 Human Remains

Any finds of human remains will be left *in-situ*, covered and protected, and both the coroner and the CPAT Archaeologist informed. If removal is necessary it will take place under appropriate regulations and with due regard for health and safety issues. In order to excavate human remains, a Ministry of Justice licence is required under Section 25 of the Burials Act 1857 for the removal of any body or remains of any body from any place of burial. This will be applied for should human remains need to be investigated or moved.

2.5 Small Finds

Diagnostic artefacts, such as pottery sherds and lithics, along with animal bones from sealed contexts and/or middens, uncovered during the watching brief will be retained for further examination and identification. Pottery sherds of 19th and 20th century date will be examined on site and the context from which they were retrieved noted but the sherds will not be retained. The artefacts will be treated according to guidelines issued by the UK Institute of Conservation (Watkinson and Neal 2001) in particular the advice provided within *First Aid for Finds* (Rescue 1999) and Historic England.

All finds are the property of the landowner; however, it is Trust policy to recommend that all finds are donated to an appropriate museum, in this case the Denbighshire Heritage Service (The Old Gaol, 46, Clwyd St, Ruthin, Clwyd, LL15 1HP). Access to finds must be granted to the Trust for a reasonable period to allow for analysis and for study and publication as necessary. Trust staff will undertake initial identification, but any additional advice would be sought from a wide range of consultants used by the Trust.

All finds of treasure must be reported to the coroner for the district within fourteen days of discovery or identification of the items. Items declared Treasure Trove become the

property of the Crown, on whose behalf the National Museums and Galleries of Wales acts as advisor on technical matters, and may be the recipient body for the objects.

The National Museums and Galleries of Wales will decide whether they or any other museum may wish to acquire the object. If no museum wishes to acquire the object, then the Secretary of State will be able to disclaim it. When this happens, the coroner will notify the occupier and landowner that he intends to return the object to the finder after 28 days unless he receives no objection. If the coroner receives an objection, the find will be retained until the dispute has been settled.

2.6 Further Archaeological Works

The identification of significant archaeological features during the watching brief may necessitate the production of a new project design and the submission of new cost estimates to the contractor.

The application of a further archaeological works design (FAWD) will be dependent on the initial identification, interpretation and examination of an archaeological feature and the identification of activity that cannot be addressed within the provisions of the current design, e.g., burials or structures. The requirement for an FAWD will be determined in conjunction with CPAT through established communication lines and the monitoring process.

The FAWD will be instigated through a GAT produced document that will include:

- feature specific methodologies;
- artefact and ecofact specialist requirements, with detail of appropriate sampling strategies and specialist analysis;
- timings, staffing and resourcing;
- additional costs.

The FAWD document will need to be approved by CPAT.

2.7 Monitoring Arrangements

The CPAT Archaeologist will need to be informed of the project start date and of the subsequent progress and findings. This will allow the CPAT Archaeologist time to arrange monitoring visits and attend site meetings (if required) and enable discussion about the need or otherwise for FAWDs (if required) as features of potential archaeological significance are encountered.

3 PROCESSING DATA, ILLUSTRATION, REPORT AND ARCHIVING

The level of post-excavation analysis and reporting for the purposes of the mitigation will be sufficient to establish the character, scale, date range, artefactual and palaeo-environmental potential and overall significance of the remains and will be based on the *Management of Archaeological Projects* (English Heritage, 1991).

Following the completion of the fieldwork, the site data (pro-formas and photographic images) will be processed and archived, final illustrations will be compiled and a report will be produced which will detail and synthesise the results. Location drawings and a sample of relevant photographs will be used to illustrate the reports.

Following completion of the stages outlined above, a report will be produced incorporating the following:

1. Non-technical summary
2. Introduction
3. Aims and purpose
4. Specification
5. Methods and techniques, including details and location of project archive
6. Watching Brief Results
7. Summary and conclusions
8. List of sources consulted.

Illustrations will include plans of the location of the study area and archaeological sites. Historical maps, when appropriate and if copyright permissions allow, will be included. Photographs of relevant sites and of the study area where appropriate will be included. A draft copy of the report will be sent to the regional curatorial archaeologist (CPAT) and to the client prior to production of the final report.

4 DISSEMINATION AND ARCHIVING

A full archive including plans, photographs, written material and any other material resulting from the project will be prepared. The archaeological mitigation outlined in this project design will commence on the 3rd December 2015 and is expected to last one working day. Repeated visits for the remaining intrusive groundworks will be dependent on the results of the initial site visit and on feedback from CPAT. The interim report for the archaeological mitigation will be produced within one month of completion of the fieldwork.

- A digital report will be provided to CPAT.
- Two copies of the paper report plus a digital report and archive on optical disc will be provided to Historic Environment Record, Gwynedd Archaeological Trust; this will be submitted within six months of report completion.
- A digital report and archive (including photographic and drawn) data will be provided to Royal Commission on Ancient and Historic Monuments, Wales.
- A paper report(s) plus digital report(s) will be provided to the client.
- Submission of digital information to the Royal Commission on the Ancient and Historical Monuments of Wales shall be undertaken in accordance with the RCAHMW Guidelines for Digital Archives Version 1 (2015; cf. Appendix I). Digital information will include the photographic archive and associated metadata.
- Artefacts recovered from the site during the watching brief, with the landowners permission, will initially be transferred to GAT and then subsequently to the Denbighshire Heritage Service (The Old Gaol, 46, Clwyd St, Ruthin, Clwyd, LL15 1HP).
- Dependent on the results of the watching brief a summary note or a specific article will be included in the Council for British Archaeology Wales publication *Archaeology in Wales*. This shall be agreed with CPAT, and client in advance of publication along with all publication content. CPAT involvement in the project will be acknowledged therein.

5 PERSONNEL

The project will be managed by John Roberts, Principal Archaeologist GAT Contracts Section and attended by a minimum of one Project Archaeologist. The project archaeologist will be responsible for field management duties, including liaison with CPAT and client. The project archaeologist will be responsible for completing the watching brief record sheet as well as all other on site pro-formas and will also archive all written, drawn and digital data. The project archaeologist will also be responsible for submitting a draft final report for project manager review and approval. The report will then be submitted as per the arrangements defined above.

6 HEALTH AND SAFETY

The GAT Project Archaeologist will be CSCS certified. Copies of the site specific risk assessment will be supplied to the client and site contractor prior to the start of fieldwork. Any risks and hazards will be indicated prior to the start of work via a submitted risk assessment. All staff will be issued with required personal safety equipment, including high visibility jacket, steel toe-capped boots and hard hat.

7 INSURANCE

Public Liability

Limit of Indemnity- £5,000,000 any one event in respect of Public Liability

INSURER Aviva Insurance Ltd
POLICY TYPE Public Liability
POLICY NUMBER 24 7651 01 CHC/000405
EXPIRY DATE 31/03/2016

Employers Liability

Limit of Indemnity- £10,000,000 any one occurrence.

INSURER Aviva Insurance Ltd
POLICY TYPE Employers Liability
POLICY NUMBER 24 765101 CHC/000405
EXPIRY DATE 31/03/2016

Professional Indemnity

Limit of Indemnity- £5,000,000 in respect of each and every claim

INSURER Hiscox Insurance Company
POLICY TYPE Professional Indemnity
POLICY NUMBER HU PI 9129989/1208
EXPIRY DATE 31/03/2016

8 REFERENCES

Cadnant Planning Limited, Design And Access Statement for the Installation of 285KW PV Panels at Rhug Estate Farm (June 2015).

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Leigh D & D. Watkinson. 1998. *First Aid for Finds: Practical Guide for Archaeologists*.

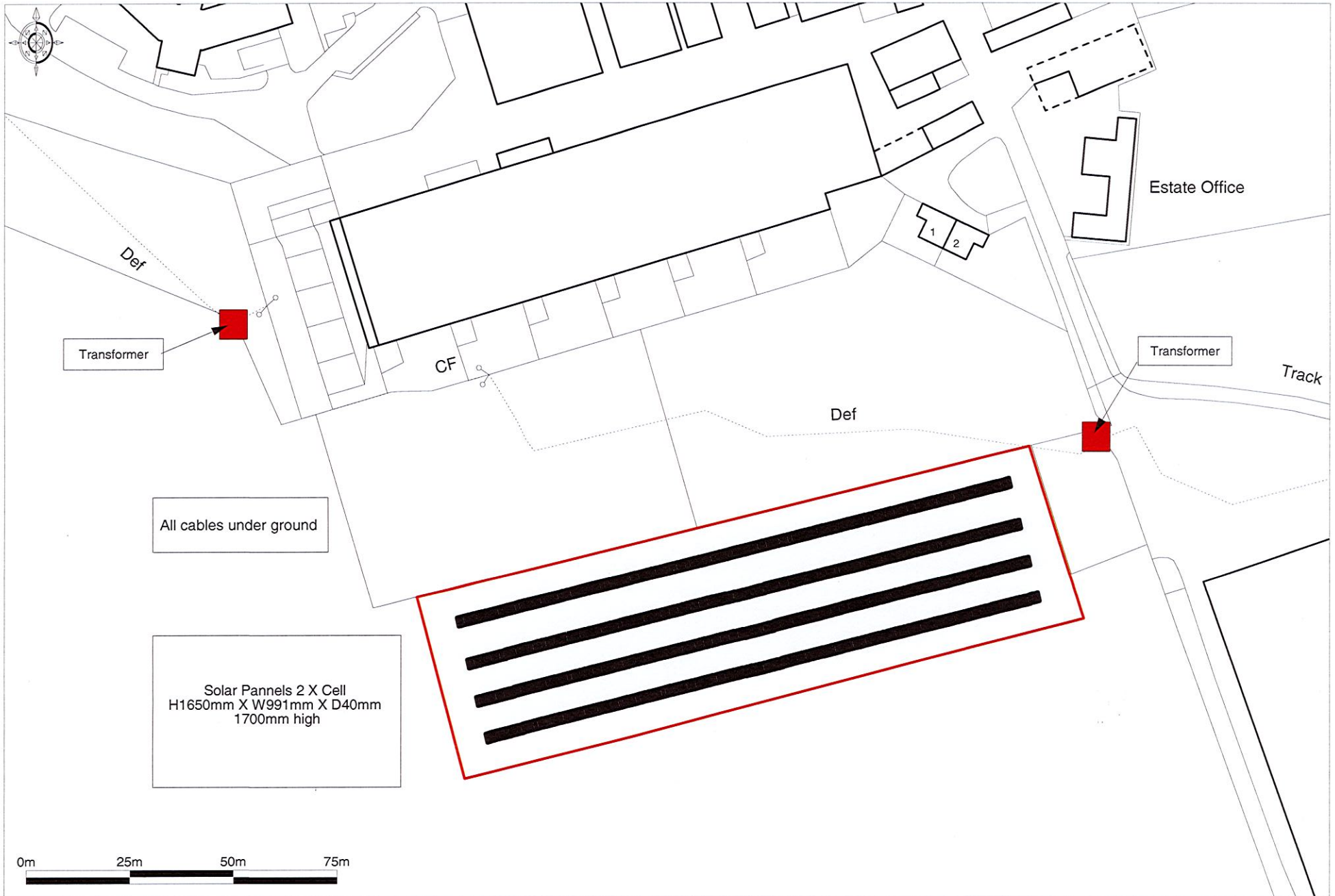
Leigh D & D. Watkinson. 2001. *UK Institute for Conservation: Excavated Artefacts and Conservation*.

Royal Commission on Ancient and Historic Monuments of Wales 2015 *Guidelines for digital archives*.

9 FIGURE 1

9.1 Site Location Map

Rhug Estate



Ordnance Survey © Crown Copyright 2015. All rights reserved. Licence number 100022432. Plotted Scale - 1:1250



10 FIGURE 2

**10.1 Reproduction of aerial photograph and highlighted cropmark
(NPRN 309,392)**



11 APPENDIX I

11.1 Royal Commission on the Ancient and Historical Monuments of Wales Guidelines for Digital Archives Version 1.

RCAHMW GUIDELINES FOR DIGITAL ARCHIVES

VERSION 1

GARETH EDWARDS

This document is based on:

*RCAHMS Guidelines for Archiving of
Archaeological Projects version 13, 2013*

And is informed by:

*Archaeology Data Service Guides to Good
Practice*

<http://guides.archaeologydataservice.ac.uk/>

RCAHMW

Guidelines for Digital Archaeological Archives

Maintained by the Royal Commission, the National Monuments Record of Wales (NMRW) is the national collection of information and archives concerning the historic environment of Wales from the earliest times to the present day. It comprises a repository of both hard-copy and digital records, including photographs, drawings, text reports and other material relating to the archaeology, architecture and industrial heritage of Wales. The NMRW collects and preserves this material for the future, with the intention of making it available to the public for study and research. Please see our website for further details about our organisation <http://www.rcahmw.gov.uk/HI/ENG/Home/>¹ and our Collecting Policy <http://www.rcahmw.gov.uk/HI/ENG/About+Us/Policies/Collecting+Policy/>².

These guidelines are designed to be used by those producing digital archaeological archives, or archives with a digital component, intended for preservation in the NMRW. Equally, these guidelines can be used by those preparing previously produced digital archives for donation to the NMRW. An archive comprises the complete documentary record of an archaeological project. The aim should be to produce a comprehensive record of work undertaken, and the archive should be structured to allow the information to be understandable and readily accessible by those unfamiliar with the project. Considering the potential for reuse of information at the planning stages of a project onward will aid in the production of a complete and coherent archive. NMRW staff will be happy to answer any questions about the deposit of archive material.

It is in the nature of digital archives that standards evolve in line with changing technologies and we intend to update these guidelines to keep abreast of this. Please see our website <http://www.rcahmw.gov.uk/HI/ENG/Search+Records/Standards/Archive/>³ to ensure that you have the latest version of this guidance document. We do not currently have prescriptive standards for many specialist survey outputs (e.g. LiDAR, 3D Laser scanning, etc.) and processes creating big data. Please contact us to agree requirements for such archives.

NMRW reserves the right to refer archives back to producers for further work where adequate basic standards of organisation, description and format have not been met.

If you wish to discuss depositing digital records with RCAHMW, or require further information on the suitability of your archive for deposit, formats of record, metadata or configuration of the archive, please contact:

Gareth Edwards, Archive and Library Team Leader, RCAHMW
gareth.edwards@rcahmw.gov.uk

¹ The Royal Commission on the Ancient and Historical Monuments of Wales Website, RCAHMW, 19/03/2015

² The Royal Commission on the Ancient and Historical Monuments of Wales Website, RCAHMW, 19/03/2015

³ The Royal Commission on the Ancient and Historical Monuments of Wales Website, RCAHMW, 19/03/2015

Content

Content selection criteria will vary from project to project, however it is imperative that:

- All texts and supporting images that may comprise a final report or publication must form the core of the deposit.
- Any supporting graphics that are embedded into a final report but which are also available in higher resolution or uncropped must be included as separate items.
- All raw (unprocessed) data relating to various specialist survey activities should be included where possible.
- If unprocessed data is not available in digital form, and provision cannot be made to scan it electronically, it can be supplied to NMRW as hardcopy. Adobe Portable Document Format (PDF/A-1a or PDF/A-1b) files are accepted. However, any constituents that go to make up the PDF file (e.g. TIFF files, Microsoft Word document) should be documented and supplied as well.

Duplication must be avoided wherever possible:

- Do not provide data items in more than one file format if their content is identical, unless the original format is known to be at risk or not currently accepted by NMRW.
- When submitting digital images do not include duplicate, near duplicate or extraneous images. NMRW reserves the right to weed and delete such files.
- Where a document exists in several versions, only supply the final (non-draft) version with the assemblage.
- Written correspondence (electronic or scanned hardcopy) relating to the project should not be included *unless* it represents a primary aspect of the project's brief or adds value to the assemblage.
- No material should be included that may be interpreted as being defamatory or libellous to any living person.

Information required

In addition to the digital materials deposited, it is also necessary to supply documentation for the deposited archive. There are three categories of documentation that should accompany a digital resource:

- Archive information Form
- File information Form; and
- Technical documentation (where appropriate)

These are available electronically on application to Gareth.edwards@rcahmw.gov.uk in MS Excel format and should be returned to NMR in that format, in a folder named 'metadata'. Examples of completed forms are included as appendices to these guidelines. If producers already have similar metadata, covering the required data elements in an acceptable format, this can be supplied, but only through prior agreement with RCAHMMW.

Archive Information

We require general information about the archive and the background to its production, together with information on the site or sites involved, and a summary of the archive's contents. This form is relevant to both hard copy and digital archives, or combinations of

both. **Appendix A** gives an example of a completed form. All fields are mandatory unless otherwise marked. One form should be completed for each archive.

File Information

- **Appendix B** gives an example of a completed form used to record basic file details for each item in the archive. All fields are mandatory unless otherwise marked.
- A form should be completed for each group of file types (e.g. Autocad files, .TIFFS, etc.) and the header to the form gives the general information about these, each individual file should then be listed and described below this. (See **Appendix B** examples below).
- All data files must have a logical, single unique file reference which is recorded exactly consistently in the form (see **File and Directory Naming** below).
- Ensure you complete and submit this electronically.

Technical Documentation

Technical documentation is information about items, or groups of items, within the archive which will enable the data to be understood and reused by others (for instance, it may constitute a text document describing all the data tables in a database, detailing how they relate to each other). Technical documentation also encompasses documentation relating to third party material that may be embedded within the resource being deposited. Technical documentation (if applicable to your data) should be submitted with the archive in electronic form only.

Technical documentation can be highly specialised in nature and its format or elements will vary depending upon the type of data to which it refers. As a basic requirement, technical documentation, where necessary, must be sufficient to allow archive items, or groups of items, to be accessed, understood and reused by future users of the archive.

NMRW does not use or record formal data elements for technical documentation. A copy of depositors' technical documentation is stored with the archive and supplied to users when requested. It is the depositor's responsibility to ensure that the technical documentation is accurate and complete – NMRW will not verify or validate complex technical documentation.

A good source of practical advice for provision of technical documentation is the Archaeology Data Service (ADS) series of *Guides to Good Practice*. General guidelines relating to technical documentation for archaeological excavation and fieldwork are available at: <http://guides.archaeologydataservice.ac.uk/g2gp/Main>⁴. The guide covers technical metadata under the relevant chapters on each data type. Where producers are unsure if technical documentation is required or need further information, they should take specialist advice.

⁴ Archaeological Data Service Website, ADS, 19/03/15

Formats and Conventions

Media Formats

Digital archive files will be stored, uncompressed on an archive server, but in order to transfer them to us, the NMRW currently accepts digital archive in the following common media formats: CD-R; CD-RW; DVD-R; DVD-RW; and external hard disk. Alternatively, archive can be delivered by attachment to email or made available for download via a secure web-based file sharing application such as OneDrive, where it may be convenient to package and compress complex archives using file compression software, (e.g. WinZip, GZip, etc.)

NMRW cannot routinely accept deposition of digital archive using: Iomega Zip discs; DLT, DAT, TK50 or QIC tape cartridges; CD-DA, CD+G, CD-I or CD-Text discs; unusual/outdated (e.g. 8" and 5.25") magnetic discs; or solid state storage devices. In limited circumstances we may be able to accept such formats for legacy data, but please contact us in the first instance.

NMRW would prefer to receive media formatted under (or for) the Microsoft Windows platform.

Avoid adhering gummed or sticky labels to the surface of CD-ROM. Use a water-based, non-permanent soft-pointed marker to write the Unit name, project code, site name and date on the CD-ROM rather than the CD Case or wallet.

File Formats

Wherever possible, depositors must supply digital material in file formats that are listed in **Appendix B**, Recommended Formats. If this is not possible, contact the NMRW Archive for advice. This appendix provides a list of required file formats for a range of data types relating to archaeological and architectural activities.

Where the original format used is bespoke, very newly developed and/or not widely accepted, it is essential that items are also supplied in a more common format to ensure they are useable and retrievable. Depositors therefore, may supply a single item in more than one format. Please indicate the duplication in the File Information Form (use the Description column), together with details of any data loss observed between format versions. Please consult with us for advice on surrogate digital formats.

File and Directory Naming

NMRW has a few special requirements for file and directory naming other than those imposed by popular operating systems. File directory names should be easily understood by those outside of the project, and whilst there are no formal requirements for the internal arrangement of, or maximum levels of nesting within, an archive's directory structures, levels of nesting should be kept to a minimum, should be logical, and should not contain duplicate files.

It is essential that:

- Each project directory should contain a folder named 'metadata' and this should contain the completed electronic copies of the metadata forms supplied by NMRW.
- The period character ('.') is not used in directory names, and is reserved for separating the file extension from the name.
- The space character should not be used in file or directory names (replace with the underscore character).
- Directory and file names may be upper, lower or mixed case.

- Filenames should be logical, unique, be kept as short as reasonably possible, and be entirely consistent with the file name as recorded in the File Information metadata.
- When naming files with consecutive numbers use the same number of characters throughout (i.e. for 1-100, use 001 to 100 otherwise this causes us difficulties).

Archive Ownership and Intellectual Property Rights

- NMRW requires that depositors transfer the physical ownership of archive material to the organisation via a signed Deposit Agreement to aid its successful curation, an electronic copy of this form is included as **Appendix C** of this document
- It is essential that the Intellectual Property Rights (including Copyright) of the archive are established, and any special conditions attached to material made clear at the time of deposition with NMRW.
- Intellectual Property Rights can be transferred to NMRW as part of the Deposit Agreement. If a depositor wishes to retain Intellectual Property Rights for the material they have created then this may be noted on the Deposit Agreement form, but depositors must allow NMRW to disseminate material as per their advertised terms and conditions.
- In the event of an organisation holding copyright ceasing to exist, notification of this should be made to NMRW, as soon as possible, with details of any new arrangements.

Archive Information Form

Project Information		
Organisation Name		
Trowel Archaeology Ltd.		
Project Name		
Pen Caer Evaluation		
Project Code	HER Event PRN	Project Dates
TA0213	303897	June - July 2013
Project Manager		Type of Project (i.e. Watching Brief, Evaluation...)
Dai Rhaw		Evaluation and Excavation
Sponsor/Client		
Cadw		

Site Information		
Site Name (and Address if appropriate)		
Pen Caer Hillfort, Aberffug		
NGR	NPRN (NMRW site number, if known) or HER PRN	Site Classification (i.e. Hut Circle)
NS 598 651	NPRN 94568	Hill Fort

Archive Contents – Digital Material (please provide metadata on appropriate form)	
Method of Transfer and quantity	6 CDs
Size (specify if KB, MB or GB)	1.8 MB

File Information Form

Organisation/individual depositing the material	Name of project, Originator Project Code (if available)	Date form compiled
Trowel Archaeology Ltd.	Pen Caer Evaluation TA0213	29/06/2013
Operating system Vendor	Operating system Name	Operating system Version
Microsoft	Windows 2000	Version 4.0
Software Name (Vendor + application name + version)	File Extension	Total Number of files submitted of this type
AutoCAD2000	DWG	1
Hardware/Capture Devices : Make	Model	Type

Filename	Path (depositor's pathway structure)	Description of file's content	Linked file(s) <i>This field is optional</i>	Technical documentation files <i>This field is optional</i>	Notes <i>This field is optional</i>
TA0213-Report-001.dwg	TA0213/report_illustrations	Plan of outer rampart, Fig. 1 in finished report.	TA0213/report_illustrations/TA0213-Report-010.pdf	TA0213/report_illustrations/Technical_Documentation/Outer_Rampart_Plan.doc	Component of full finished plan, see file under 'Technical Documentation'.

Organisation/individual depositing the material	Name of project, Originator Project Code (if available)	Date form compiled
Trowel Archaeology Ltd.	Pen Caer Evaluation TA0213	29/06/2013
Operating system Vendor	Operating system Name	Operating system Version
Microsoft	Windows 2000	Version 4.0
Software Name (Vendor + application name + version)	File Extension	Total Number of files submitted of this type
Adobe Photoshop 12	.TIF	105
Hardware/Capture Devices : Make	Model	Type
Nikon	D80	Digital Camera

Filename	Path (depositors pathway structure)	Description of file's content	Linked file(s) <i>This field is optional</i>	Technical documentation files <i>This field is optional</i>	Notes <i>This field is optional</i>
TA0213-Photos-001.tif	TA0213/photography	Trench 3, from south-west, showing burnt layer.			.
TA0213-Photos-002.tif	TA0213/photography	Trench 3, from north, showing post hole.			.
TA0213-Photos-003.tif	TA0213/photography	Trench 4, from south, showing post hole.			.
Etc.....					

Notes for File Information Form

Please give as much detail as possible for each field for each file being deposited. If you do not have the information to complete all fields please indicate this e.g. 'Microsoft Fox Pro, Version information unknown'. Complete a different header section and begin a new list if the details relevant to the file(s) being listed change (e.g. if a set of files are produced through a different operating system or application)

- Filename** - Please provide the file name exactly consistent with that used for the file (do not use 'spaces' in file names if possible, use underscore/dash etc.)
- File extension** - Please indicate this clearly (upper or lower case)
- Path** - Please indicate pathway within the archive folder supplied to us, as designated by data manager
- Description of file content** – What you would expect to see when you open the file e.g. Elevation of West front showing blocked doorway
- Linked files** – Names of any files upon which this file depends for content, but which are not embedded in the file itself. Include path info if required.
- Technical Documentation Files** - Name of any file that documents the internal structure or content of this file and give technical information on its configuration or use.
- Notes** – Allows for input information not shown anywhere else.

REQUIRED FILE FORMATS

Appendix B

The following table lists all file formats that NMRW is currently capable of accepting. Other formats may be acceptable under certain circumstances, but producers must contact the NMRW Archive if you wish to submit data in formats other than those listed below.

		File Format	Additional Documentation (if relevant/available)/Notes
Text	<i>Preferred</i>	Adobe Portable Document Format ISO Standard for Archiving (PDF/A) - .pdf Microsoft Word - .doc	<ul style="list-style-type: none"> Documents must not be locked to editing or password protected. HTML, XHTML – include any relevant CSS files XML – include relevant schema/DTD/XSLT
	<i>Accepted</i>	Adobe Portable Document Format - .pdf Microsoft Word - .docx OpenDocument Text - .odt TXT, HTML, XHTML, XML, SGML	
Images (see below for further details)	<i>Preferred</i>	Tagged Image File Format (Uncompressed) - .tif	<ul style="list-style-type: none"> Uncompressed .tif files are required as mandatory for any new work. We will only accept .jpg files from historic archives where .tiffs are not available. Captions must be included for all image files Images must be at least 1200 pixels along longest edge. Images must have a resolution of at least 72dpi.
	<i>Accepted</i>	Joint Photographic Expert Group - .jpg JPEG2000 - .jp2 Tagged Image File Format (Compressed) - .tif Portable Network Graphics - .png	
CAD (Vector Graphics)	<i>Preferred</i>	Scalable Vector Graphic - .svg Adobe Illustrator - .ai AutoCAD - .dxf	<ul style="list-style-type: none"> Relationships to other files Captions must be included for all graphics files
	<i>Accepted</i>	CorelDraw - .cdr AutoCAD - .dwg	
Spreadsheets	<i>Preferred</i>	Comma Separated Value - .csv Excel - .xls	<ul style="list-style-type: none"> Column/Rows should have clear labels describing their contents A key should be provided for any codes with the data Spreadsheets must not be locked to editing or password protected
	<i>Accepted</i>	Microsoft Office - .xlsx OpenDocument Spreadsheet - .ods	
Databases	<i>Preferred</i>	Microsoft Access - .mdb Delimited Text	<ul style="list-style-type: none"> A data dictionary should be included where available For delimited text the delimiters should be listed Databases must not be locked to editing or password protected
	<i>Accepted</i>	Microsoft Access - .accdb OpenDocument Database - .odb	
GIS	<i>Preferred</i>	ESRI Shapefile - .shp, .shx and .dbf ESRI Geodatabase - .xml	<p>Information should be provided on:</p> <ul style="list-style-type: none"> The purpose of the GIS The function of each layer Coordinate system used Method of capture Data source Scale/resolution Assessment of data quality Date of capture
	<i>Accepted</i>	Flat file data as Microsoft Excel, Comma Separated Values or Microsoft Access formats - .xls, .csv or .mdb MapInfo - .mid and .mif	
Geophysics	<i>Preferred</i>	Raw xyz data: .txt, .csv, .xyz Rendered Images: .tif	<p>For raw xyz data:</p> <ul style="list-style-type: none"> Location of the survey Conditions Instrumentation <p>For rendered images:</p> <ul style="list-style-type: none"> Details of data processing and interpretation
	<i>Accepted</i>	Rendered Images: .jpg, .png (see above)	
Video	<i>Preferred</i>	Mpeg-1, Mpeg-2	<ul style="list-style-type: none"> Shorter clips of submitted video films should also be submitted for dissemination purposes. Shorter clips should be web optimised where possible.
	<i>Accepted</i>	Mpeg-4	

Digital Images Guidance

Ensure that the images you are submitting are of the highest standard for your equipment and *at least* between 300 and 400 dpi (dots per inch)/ppi (pixels per inch).

Photographs must all be in uncompressed TIFF format when producing new photography (we will accept JPEG files only for existing archives, where no TIFF files are available).

Minimum file sizes for all digital images should be 1-2 MB but ideally images should be larger than this.

Image quality is also an important factor when selecting images to deposit. All photographs should be sharp and well exposed, and duplicates should be weeded.

Notes:

There are three main file formats used by digital cameras to create images; JPEG, TIFF and RAW, the most common being the JPEG file format. On some digital cameras it will be the only file format available, although more sophisticated digital cameras will allow you to choose between JPEG, TIFF and RAW. For new survey work, where cameras do not produce TIFFs directly, images should be output as RAW files and converted to uncompressed TIFF format. Images must not be produced as JPEGs and subsequently converted to TIFFs. As previously stated, we will accept JPEG files only for existing archives, where no TIFF files are available.

Uncompressed TIFF file format is the preferred choice for archiving images as it keeps the original quality of an image over time.

Do not submit RAW files, these are hardware dependent files and cannot be supported for future access.

The preferred settings outlined above have been chosen to allow content to be stored at an archive standard and also to allow reproduction at a scale suitable for printing and display purposes.

Most cameras give a quality option within the menu of Small, Medium and Large. In order to produce high quality images, you will need to set your camera on the Large or Medium option in order to give an image of 5-10 Megapixels.



ARCHIVES DEPOSIT AGREEMENT

Deposit		
Acc. No	Date	Ref
Depositor		
Name		
Address		
Postcode	Email Address	
Tel. No	Fax No	
Details of Deposit		
Title		
Description		
Quantity and Condition		
Provenance		
Restrictions and Copyright		
Details of Deposit Agreement		
<p>As the Owner/Depositor acting on behalf of the Owner (delete as appropriate) I certify that the above information is correct and that I have read and understood the terms and conditions of deposit on the reverse of this form. I hereby agree to:</p> <p><input type="checkbox"/> Gift the above item(s), with the copyright, to the Crown under the authority of the Archivist at the National Monuments Record of Wales, Royal Commission on the Ancient and Historical Monuments of Wales. The item(s) are offered as absolute and unfettered gifts to be placed within the public archive and made available to the public as per the terms and conditions overleaf.</p> <p><input type="checkbox"/> Deposit the above item(s) on loan to the National Monuments Record of Wales, Royal Commission on the Ancient and Historical Monuments of Wales under the authority of the Archivist under the terms and conditions overleaf, retaining copyright but allowing the Royal Commission to licence and administer the copyright on my behalf.</p> <p><input type="checkbox"/> Deposit the above item(s) on loan with the National Monuments Record of Wales, Royal Commission on the Ancient and Historical Monuments of Wales under the authority of the Archivist, as per the terms and conditions overleaf. I wish to retain copyright and be contacted each time an enquirer wishes to use the item(s) other than for private research.</p>		
Signature (Depositor)	Name (BLOCK CAPITALS)	Date
Signature (Archivist)	Name (BLOCK CAPITALS)	Date
<p>Royal Commission on the Ancient and Historical Monuments of Wales Plas Crug, Aberystwyth, Ceredigion SY23 1NJ Tel: +44 (0)1970 621200 Fax: +44 (0)1970 627701 E-mail: nmr.wales@rcahmw.gov.uk Website: http://www.rcahmw.gov.uk</p>		

TERMS AND CONDITIONS OF DEPOSIT

General

1. The deposited items are accepted upon the following terms except as may be expressly varied in writing by the parties hereto which variation should be appended to this agreement.
2. For the purpose of this agreement the Royal Commission on the Ancient and Historical Monuments of Wales (hereafter referred to as the RCAHMW) shall act through its Archivist with respect to any consent, notice, approval, requirement or any other action of the RCAHMW referred to under this agreement or through such other officer of the RCAHMW as may from time to time be determined and all notices and communications from the Depositor to the RCAHMW under this agreement shall be addressed to that Officer.
3. All deposited items may be examined, inspected or exhibited at the discretion of the RCAHMW with or without charge but the RCAHMW shall not by virtue of deposit be obliged to make items available for inspection or for any other purpose.
4. All copyright in any deposited item shall be retained by the Depositor where the Depositor is entitled. The Depositor may assign or gift the item and the copyright, where entitled, to the RCAHMW which agreement between the parties should be noted overleaf.
5. All deposited items may be made available or copied to third parties for the purposes of private research and study and copies of all items may be made available by RCAHMW for non-commercial purposes via the World Wide Web at the absolute discretion of the RCAHMW.
6. The RCAHMW shall store the deposited items in such conditions as it sees fit in its absolute discretion and shall not be liable to the Depositor in any circumstances for any loss or damage to the deposits from whatever cause howsoever arising.
7. The RCAHMW shall be at liberty to mark the records with any mark of reference or index.
8. The RCAHMW shall be at liberty to carry out any repair or conservation work as it shall in its absolute discretion determine and shall not be liable for any damage so caused.
9. The RCAHMW reserves the right to return items to Depositors if such persons can be traced following reasonable enquiry.

Withdrawal

10. All Depositors shall be entitled to remove temporarily deposited items for three months in any period of up to twelve months. All endeavours will be made to meet such requests without delay but Depositors should, whenever possible, give prior warning to the RCAHMW and the RCAHMW shall not by virtue of this condition be responsible to produce any deposited item earlier than 21 days following the receipt of written notice of withdrawal.
11. Deposited items may be withdrawn from the RCAHMW for periods longer than three months in any twelve months or absolutely but upon such withdrawal the Depositor shall be liable to the RCAHMW for the costs and charges accrued at the time of withdrawal in respect of the cost of cataloguing or producing a calendar of the deposited items, the cost of all conservation work carried out in connection with the deposited items and a charge in respect of the costs of storage. RCAHMW may, at its discretion, waive any or all of these costs and charges.

Confidential Items

12. If requested by the Depositor, deposited items which are confidential will only be made available for public inspection, research or other purposes with the agreement of the Depositor during the period of 30 years from the date of creation of the item or such longer period as may be agreed by the RCAHMW.

Cataloguing

13. Catalogues or calendars of deposited items prepared by the RCAHMW (if any) can be supplied to Depositors free of charge (2 copies) but otherwise shall be the property and the copyright of the RCAHMW and shall be made available to the public and others upon such terms as the RCAHMW may determine.

Insurance

14. If the Depositor wishes the items on deposit to be insured against any risks whatsoever the Depositor shall be responsible to take out such insurance and shall be responsible to discharge the costs thereof. In such circumstances while the items are deposited the RCAHMW's interest should be noted on the policy.

Depositor or Persons Claiming through the Depositor

15. For the purpose of this agreement the Depositor shall mean the person, persons or body upon whose authority records are deposited with the RCAHMW, or other person claiming to be the owner of the deposited items or the authorised agent of the owner as may be recognised under condition 16. The Depositor shall supply to the RCAHMW their full name and address to which all communications may be sent and shall promptly inform the RCAHMW of any change in their address and shall if requested by the RCAHMW produce to the RCAHMW any evidence certificate or other documentation which will establish their ownership of the deposited items.
16. The RCAHMW shall not be obliged to recognise persons claiming to be the Depositor as defined in condition 15 except where satisfactory evidence of such title or the validity of such claim has been shown to the satisfaction of the RCAHMW or such other solicitor or barrister instructed by the RCAHMW. Such persons claiming by virtue of acquisition of ownership from the original Depositor should inform the RCAHMW promptly of their acquisition of such title whereupon the RCAHMW shall when satisfied as aforesaid amend the list of Depositors accordingly.
17. Where for any purpose arising under these terms of acceptance or otherwise the RCAHMW wish to contact the Depositor in connection with any deposited item it shall be sufficient for the RCAHMW to write to the Depositor for the time being recognised by the RCAHMW in accordance with clause 16.
18. In the event of the RCAHMW being unable to contact the Depositor despite reasonable enquiry then in relation to all matters where the consent or agreement of the Depositor is required the Depositor shall be deemed to have given such consent or agreement and in the event of the RCAHMW wishing to terminate its retention of any deposited item the RCAHMW shall be at liberty to dispose of the deposited item as it sees fit including destruction in appropriate cases. It

should be noted that destruction will only be considered when all other possibilities have been exhausted, including offering the deposited items to another appropriate repository.

9 APPENDIX II

9.1 Reproduction of the watching brief metadata.

File reference	Project name	Project phase	Description	View from	Scale (s)	Type	Date	Originating person	Originating organisation
G2450_001.jpg	Rhug Estate Solar Panels	Watching Brief	Excavated trench by transformer close to the estate office	W	1x1m	Photograph	07/12/2015	Stuart Reilly	Gwynedd Archaeological Trust
G2450_002.jpg	Rhug Estate Solar Panels	Watching Brief	Excavated trench by transformer close to the estate office	E	1x1m	Photograph	07/12/2015	Stuart Reilly	Gwynedd Archaeological Trust
G2450_003.jpg	Rhug Estate Solar Panels	Watching Brief	Working shot of trench by second transformer during excavation	S	1x1m	Photograph	07/12/2015	Stuart Reilly	Gwynedd Archaeological Trust
G2450_004.jpg	Rhug Estate Solar Panels	Watching Brief	Working shot of trench by second transformer during excavation	S	None	Photograph	07/12/2015	Stuart Reilly	Gwynedd Archaeological Trust
G2450_005.jpg	Rhug Estate Solar Panels	Watching Brief	Terminal of trench by second transformer, after excavation	N	1x1m	Photograph	07/12/2015	Stuart Reilly	Gwynedd Archaeological Trust
G2450_006.jpg	Rhug Estate Solar Panels	Watching Brief	West facing section of trench	W	1x1m	Photograph	07/12/2015	Stuart Reilly	Gwynedd Archaeological Trust
G2450_007.jpg	Rhug Estate Solar Panels	Watching Brief	Excavation of trench by second transformer	N	1x1m	Photograph	07/12/2015	Stuart Reilly	Gwynedd Archaeological Trust
G2450_008.jpg	Rhug Estate Solar Panels	Watching Brief	East facing section of trench showing stratigraphy	W	1x1m	Photograph	07/12/2015	Stuart Reilly	Gwynedd Archaeological Trust
G2450_009.jpg	Rhug Estate Solar Panels	Watching Brief	View of trench showing concentration of pebble gravel	W	1x1m	Photograph	07/12/2015	Stuart Reilly	Gwynedd Archaeological Trust
G2450_010.jpg	Rhug Estate Solar Panels	Watching Brief	Trench from second transformer after excavation	S	1x1m	Photograph	07/12/2015	Stuart Reilly	Gwynedd Archaeological Trust
G2450_011.jpg	Rhug Estate Solar Panels	Watching Brief	Trench from second transformer after excavation	NW	1x1m	Photograph	07/12/2015	Stuart Reilly	Gwynedd Archaeological Trust
G2450_012.jpg	Rhug Estate Solar Panels	Watching Brief	Trench by second transformer during excavation	E	1x1m	Photograph	07/12/2015	Stuart Reilly	Gwynedd Archaeological Trust

File reference	Project name	Project phase	Description	View from	Scale (s)	Type	Date	Originating person	Originating organisation
G2450_013.jpg	Rhug Estate Solar Panels	Watching Brief	South facing section of trench by first transformer	S	1x1m	Photograph	07/12/2015	Stuart Reilly	Gwynedd Archaeological Trust
G2450_014.jpg	Rhug Estate Solar Panels	Watching Brief	Trench by first transformer after excavation	W	None	Photograph	07/12/2015	Stuart Reilly	Gwynedd Archaeological Trust



Gwynedd Archaeological Trust
Ymddiriedolaeth Archaeolegol Gwynedd

Craig Beuno, Ffordd y Garth, Bangor, Gwynedd. LL57 2RT
Ffon: 01248 352535. Ffacs: 01248 370925. email: gat@heneb.co.uk

