

**Results of Archaeological Works at
Plot Adjacent to No 2 Cromlech Road,
Great Orme, Llandudno**

NGR 277260 382904

Report Number CR63-2014



C.R Archaeology

Compiled by C. Rees & M. Jones
on Behalf of Ms. Lynda Johnston

Results of Archaeological Works at Plot Adjacent to No 2 Cromlech Road, Llandudno

Planning Reference Number:

0/38606

National Grid Reference:

277260 382904

Client:

Ms. Lynda Johnston

Report Authors:

Catherine Rees & Matthew Jones

Report Number:

CR63-2014

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13/03/2014

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1.0 Introduction

C.R Archaeology were instructed by Ms. Lynda Johnston to conduct archaeological works at the above site in compliance with planning conditions placed on the development (Planning Reference 0/38606).

Planning permission has been granted to erect a two storey dwelling with associated access, parking and services (Figure 2).

The development site is situated on the Great Orme, Llandudno (Figure 1). The development plot is located less than 25m to the south-east of the Scheduled Ancient Monument of Llety'r Filiast Neolithic Burial Chamber (SAM Ref No. Cn005). The landscape of the Great Orme itself is considered to be an area of very high archaeological potential. Numerous archaeological sites have been recorded on the Great Orme including Bronze Age and later mining activity, Medieval and later Prehistoric/Roman settlement.

The Great Orme headland has been designated a Special Area of Conservation, a Site of Special Scientific Interest and a Heritage Coast (www.greatorme.org.uk).

A specification was written in response to a brief set by Development Control Archaeologist Jenny Emmett of Gwynedd Archaeological Planning Services (dated 25th October 2013: Ref D1481) as a methodology for a programme of Archaeological Strip, Map and Record. This document is included as Appendix A.

No archaeological remains of any significance were uncovered during the works. A single rubbish pit containing material dating from the Early Twentieth Century was recorded. No material pre-dating this period was recovered during the works and it would seem likely that extra topsoil was brought in when the site was in use as a garden.

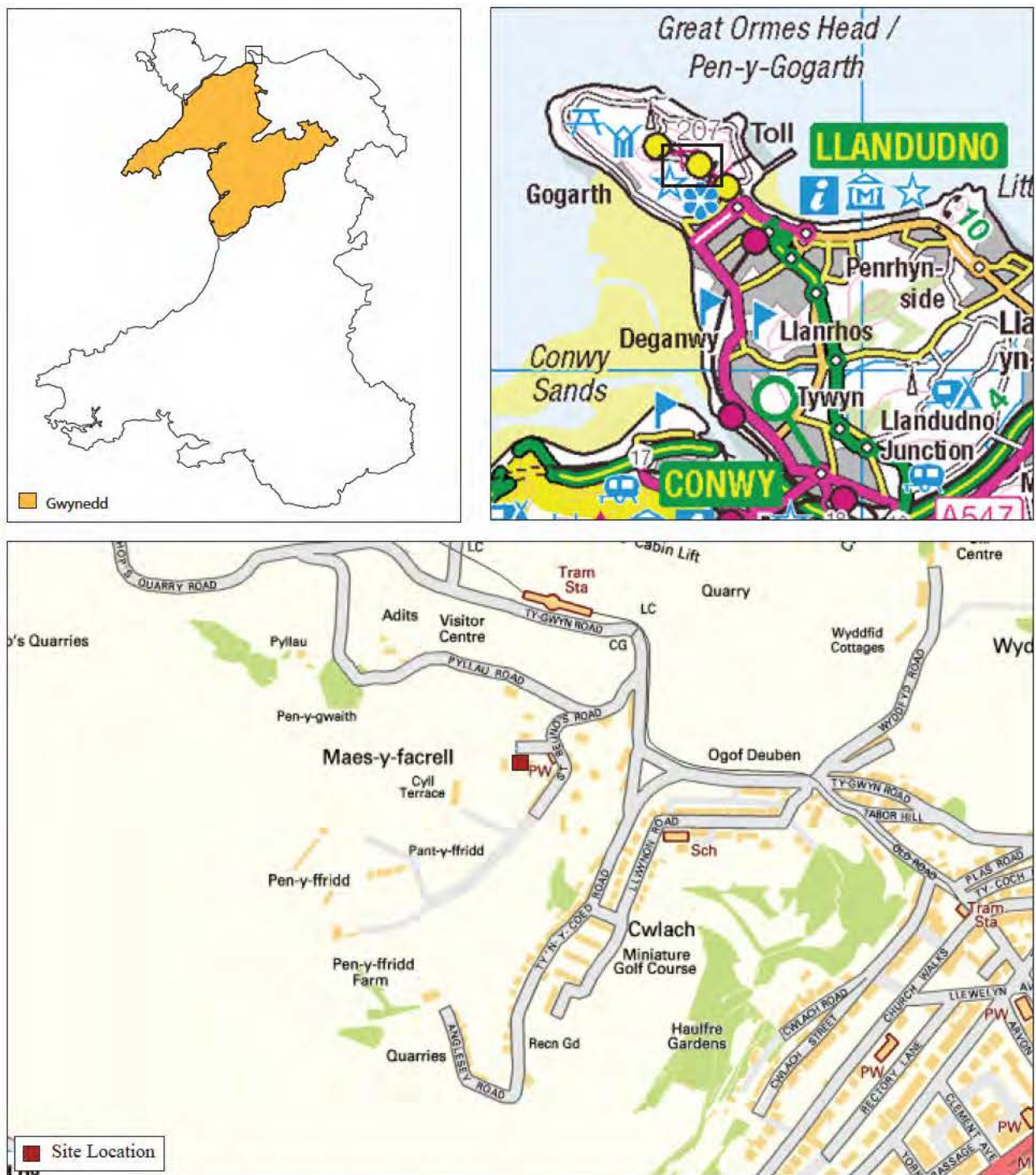


Figure 1. Site Location Map - Source: OS Open Data
(Contains Ordnance Survey data © Crown copyright and database right 2014)

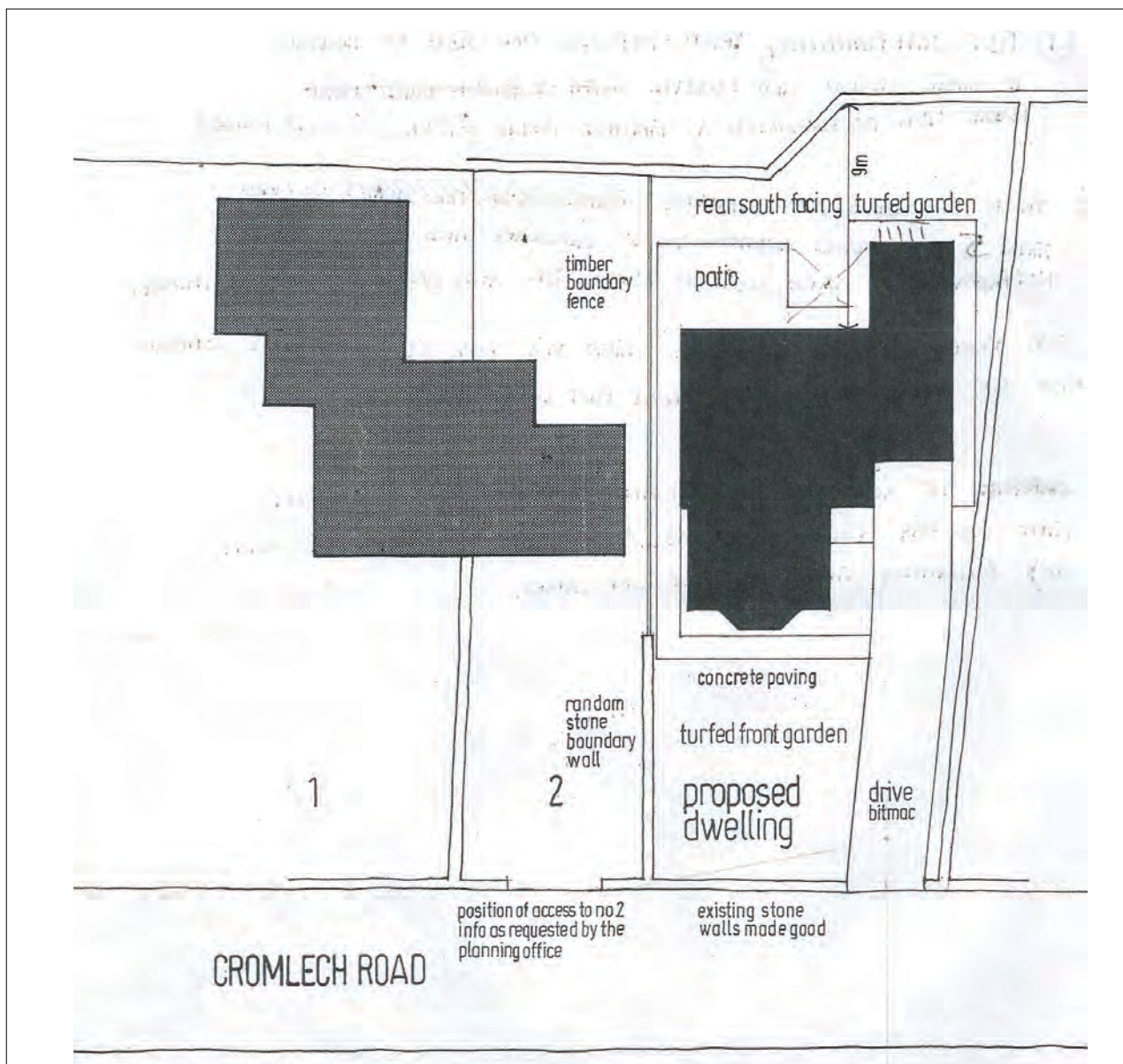


Figure 2. Proposed Site Development Plans

2.0 Project Aims

This scheme of works aimed to strip the development area down to the archaeological horizon/natural in order to assess the survival, character and date of any archaeological remains and to excavate/record any archaeological remains uncovered.

It aimed to fulfil the mitigation criteria for archaeological works as specified in a brief prepared by GAPS on the 25th October 2013.

3.0 Scheme of Works – Methodology

The methodologies employed conformed during this project to The Institute for Archaeologists: *Standard and Guidance for Archaeological Watching Brief* (Revised 2008) and The Institute for Archaeologists: *Standard and Guidance for Archaeological Excavation* (Revised 2008).

3.1 Desk Based Research

A complete and coherent history of the site was compiled utilising information sourced from Conwy Record Office, Llandudno. A full map progression was undertaken along with a search of tithe records.

The Gwynedd Historic Environment Record was consulted and a search radius of 500m was examined.

These works were carried out in accordance with the IfA Standards and Guidance for Historic Environment Desk Based Assessment (IfA 1994 (Revised 2009)).

This material forms the historical background for this archaeological report. This report also includes the results of the Strip, Map and Record.

3.2 Archaeological Strip, Map & Record

Due to the high potential for archaeological remains a programme of Strip, Map and Record was implemented at the site. The topsoil and subsoil was removed from the development area (house footprint, areas of hard standing and service areas) using a mechanical excavator with a toothless ditching bucket down to the archaeological horizon/ underlying natural. A C.R Archaeology staff member was present during the stripping of the area. Due to the depth of top and subsoil on site and the volume of material removed during the stripping it was not possible to have the whole site open at any one time. The development area was machined down to the natural in strips of c.4m, and once each area was uncovered and recorded the soil from the neighbouring strip was placed on the cleared area. A total of 5 strips were cleared and each was photographed separately.

Where archaeological features were visible, or there was any subsoil which had not been removed cleanly by machine areas of the site were hand cleaned. When archaeological remains/potential archaeological remains were encountered the features were marked using spray paint and cordoned off to allow excavation by C.R Archaeology staff.

When archaeological remains were encountered then machine excavation ceased at this level until it was clear in plan than the full extent of the feature had been uncovered. No features were encountered which extended beyond the limits of the proposed development.

All archaeological features identified during the course of the excavation were trowel cleaned by hand. Investigation of such features were sufficient to determine their character, date, significance and quality.

C.R Archaeology notified Jenny Emmett of Gwynedd Archaeological Trust as the date of the commencement of works. A site visit was not arranged due to the negative results of the works with only a single early twentieth century pit uncovered.

Fieldwork was conducted by Matthew Jones of C.R Archaeology.

3.2.1 Recording

The record forms at C.R Archaeology are based on the English Heritage system and full written, graphic and photographic records were made in accordance with the English Heritage *Field Recording Manual*. Sample forms can be provided on request. The written record comprises completed *pro-forma* record sheets.

Plans, sections and elevations were produced on gridded, archive standard stable polyester film at scales of 1:10, 1:20 or 1:50, as appropriate. Representative measured sections will be prepared as appropriate showing the sequence and depths of deposits. A temporary benchmark (TBM) will be established on the site. Where possible plans, elevations and sections contain grid and level information relative to OS data. All drawings were numbered and listed in a drawing register, these drawing numbers were cross-referenced to written site records. A 'harris matrix' diagram will be created.

A high-resolution 14.2mp Sony Alpha digital camera was used to create a photographic record of the site. This was comprised of photographs of the archaeological feature and general photographs of the site following the stripping of sections of the site. All photographic records were indexed and cross-referenced to written site records. Details concerning subject and direction of view were maintained in a photographic register, indexed by frame number. Images from photography will be stored in a loss-less digital format in this case '*.TIF'.

3.2.2 Additional Mitigation/Contingency Measures

No additional mitigation or contingency measures were required.

3.2.3 Recovery, Processing and Curation of Artefactual Material

Due to the modern date of the single feature on site no artefactual material from the site was retained.

3.2.4 Archive Compilation

All records created during the fieldwork were checked for consistency and accuracy and form part of the *Primary Site Archive (PI)* (EH 2006). The archive contains all data collected. It is ordered, indexed, adequately documented, internally consistent, secure, quantified, conforming to standards required by the archive repository and signposted appropriately to ensure future use in research, as detailed in the English Heritage *Management of Research Projects in the Historic Environment* (MoRPHE) methodology.

The archive has been assembled in accordance with the guidelines published in, *Standards in the museum care of archaeological collections* (Museums & Galleries Commission 1994), *Guidelines for the preparation of excavation archives for long-term storage* (United Kingdom Institute for Conservation, 1990) and *Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation* (AAF 2007).

3.3 Timetable for Proposed Works

Groundworks commenced on Thursday 6th March 2014 and was completed within a single day. Additional time was allotted as necessary for archive research, report compilation and site archiving. Gwynedd Archaeological Planning Services were informed of the exact site days to allow monitoring of works.

3.4 Staffing

The project was managed by Matthew Jones (BA (Archaeology), MA (Archaeology)). All staff have a skill set equivalent to the IfA AIfA level. All projects are carried out in accordance with IfA *Standard and Guidance* documents.

3.5 Monitoring

The project was subject to monitoring by Gwynedd Archaeological Planning Services. The monitor was given prior notice of the commencement of the fieldwork.

They were notified in writing (via email) of the commencement dates for archaeological site work and were updated with the results of all works conducted as watching brief elements. This was initially as an email with attached JPEG photographs.

3.6 Health and Safety

A risk assessment was conducted prior to the commencement of works and site staff were familiarised with its contents. A first aid kit was located in the site vehicle.

All staff were issued with appropriate Personal Protective Equipment (PPE) for the site work. This consisted of:

- Safety Helmets (EN397)
- Hi-visibility vests (EN471)
- Safety footwear – steel toecap and mid-sole boots and Wellingtons (EN345-47)

All staff have passed at least a CITB health and safety test at least operative level and carry a Construction Related Organisation (CRO) White Card for Archaeological Technician (Code 5363).

C.R Archaeology staff also complied with all Health and Safety Policy and specific on-site instructions provided by the client or their appointed Principal contractor or H&S coordinator.

3.7 The Report

This report clearly and accurately incorporates information gained from the programme of archaeological works. It presents the documentary evidence gathered in such a way as to create a clear and coherent record. The report contains a site plan showing the locations of photographs taken.

The report includes:

- A copy of the design brief and agreed specification
- A location plan
- Sufficient historical and archaeological detail to allow interpretation of the results and to support assessment of significance
- All identified features and significant finds plotted on an appropriately scaled site plan
- Full dimensional and descriptive detail of all identified finds and features
- A full bibliography of sources consulted
- An archive compact disc

A copy of the report in Adobe PDF format will be sent to the appropriate monitoring archaeologist for approval before formal submission. A bound paper copy and PDF digital copy of the report will be submitted as part of the formal submission. A digital Adobe PDF version and a bound paper copy of the final report and will be lodged with the Gwynedd Historic Environment Record within six months of completion of fieldwork.

3.7.1 Copyright

C.R Archaeology and sub-contractors shall retain full copyright of any commissioned reports, tender documents or other project documents, under the Copyright, Designs and Patents Act 1988 with all rights reserved; excepting that it hereby provides a licence to the client and the local authority for the use of the report by the client and the local authority in all matters directly relating to the project as described in the Project Specification.

4.0 Geological and Geographical Context

4.1 Topography

The Great Orme is a prominent feature in the landscape, the relatively undeveloped nature of which contrasts with the rest of the mainly developed Creuddyn Peninsula. A number of habitats are represented, such as wooded areas on the lower slopes, grasslands, cliff faces and rock exposures. The Great Orme can be seen for many miles around, from Anglesey and along the North Wales coast, and for many miles inland. Rising 209m (679ft.) from sea level, views from much of the site, but especially the summit, are extensive (www.conwy.gov.uk).

4.2 Geology

The bedrock is recorded as “Loggerheads Limestone Formation - Limestone. Sedimentary Bedrock formed approximately 331 to 335 million years ago in the Carboniferous Period. Local environment previously dominated by shallow carbonate seas. These rocks were formed in warm shallow seas with carbonate deposited on platform, shelf and slope areas; often rich in corals and shelly faunas. May include evaporites where seawater was trapped and salts concentrated by evaporation”. The superficial geology is not recorded (www.mapapps.bgs.ac.uk/geologyofbritain/home.html).

Soil formations are recorded in the “*Great Orme Country Park and Local Nature Reserve Management Plan 2011-2016*”. It states that “recent research into soil/plant interactions on the Great Orme (ITE/NERC 1995) reveals that patches and bands of post-glacial loess (a windblown, fine sand/silt) which are non-calcareous are present on the Great Orme, and in places obscure the underlying limestone. Where the loess is more than approximately 40cm deep over the limestone or boulder clay, heath has developed. Where loess thins out to 20-30cm, calcareous grass heath has developed. Where the loess thins further the influence of the limestone ensures that calcareous grassland occurs. Due to geographical and geological circumstances, the Great Orme's Head is of low agricultural quality in the national classification” (www.conwy.gov.uk).

5.0 Archaeological and Historical Background

Research was conducted at Conwy Archives and relevant information from this searches is included below. Where the exact location of find spots/sites are unknown this information is included only if it is felt relevant to provide an indication of the archaeology of the area.

A search of the Gwynedd Historic Environment Record was conducted on the 31st January 2014. An initial search covering a 500m radius from the central point of the development (SH277260 382904) was conducted. The main features mentioned in the text are shown on a map in Appendix B.

Prehistoric

An undated shell midden (PRN 13940) was uncovered in excavations carried out on Cromlech road.

Mesolithic

There were no Mesolithic remains within the 500m search radius.

Neolithic

A flint scrapper (PRN 5453) was picked up at Pyllau.

A Neolithic chambered tomb (NPRN 95269) is sited approximately 25m from the site. The site has a folk name Lletty'r Filiast (the tomb of the Grey hound Bitch). Excavation during the early 19th century recovered human bones which were attributed to 'Keridwen' a hag who according to folklore was the mother of bard of Taliesin (Smith 1875:16). A fragment of dark brown pottery was also recorded as being found along with some bones (RCAHMW 1937) although it is unclear as to whether these are the same bones from the excavation mention by Smith. Smith stated that the full results of the the earlier excavation can be sourced from the Journal of the British Archaeological association and in the course of compiling this history the journals editor was contacted and a search of the Bangor University Library was made but unfortunately this article could not be found. This problem appears to have been encountered by Kelly in his 1975 *Archaeologia Cambrensis* article where he quotes Smith as his source of early information rather than the earlier document (Kelly 1975: 179 & 216).

An early description of the site comes from a short comment in *Archaeologia Cambrensis* (Anon 1912: 146). This article describes a visit carried out by the group to the Great Orme and its environs thus “the chamber is made of four large upright stones supporting a large cap stone, and the entrance faces east” it also states that the ground about had been dug up and the mound itself had been displaced by the growth of a large bush. In an effort to preserve the site Lord Mostyn had placed an iron fence around the site. The site was compared to more well known long barrows although it was stated that this was a small example. Artefacts recovered from the site are recorded as some brown pottery and piece of bone both of which are now lost. The party then journeyed by train to the Summit Hotel where luncheon was served (Anon 1912: 146-147).

The RCAHMW survey carried out in 1937 gives a very similar description to the above article it records that the dimensions of the four uprights were four feet, and that three of them support the capstone. The mound is described as 6 feet (1.82m) high in its centre, 80 feet (24m) long and 45 feet (13.7m) wide. The fact that the chamber is no longer covered by the mound is put down to quarrying instead of natural damage as stated above. Artefacts recovered are as stated above but this article does forward the notion that some of the mound maybe natural stone outcropping. (RCAHMW.1937. 185-186).

Lynch's article of 1969 (Lynch 1969: 140) describes the tomb of being of a Portal Dolmen type in structure and in position. The mound is described as being slightly longer at 90 feet (27.4m) and not as wide being only 40 feet (12 m) but it is unclear as to whether this change in dimensions is down to further damage. It has been suggested that the chamber may have been damaged with the orthostats (up rights) out of their true position. A similar description is given in the 1995 Cadw guidebook (Lynch 1995: 19). There is no mention of the site in the 2000 publication *Prehistoric Wales* (Lynch 2000)

A watching brief was carried out by the Gwynedd Archaeological Trust in October 1990 in relation to the replacement of the earlier fence. Unfortunately this added little to our picture of the tomb or its environs with a shallow post hole of indeterminate date being identified. The remainder of the findings were summarised as “no other features of archaeological significance were identified” (Dutton 1990: 41).

A geophysical survey carried out by Jo Jones in the field surrounding the site which identified a possible earlier ditched feature under the site of the tomb and revealed that the mound itself could extend 15 meters to the north west and a further 10 meters to the east and west. It also suggests that the surviving mound is not a natural feature as was previously suggested (Jones 1996: 7).

In 2002 Gwynedd Archaeological Trust undertook a survey of Prehistoric Funerary and Ritual Monuments in West Conwy and Northern Gwynedd. In this document the lack of investigation and dating of the portal dolmen (specifically mentioning Lletty'r Filiast) is described as “most to be regretted” and it is stated that work is needed if only to understand the structures themselves (Smith 2002: 26).

Bronze Age

A large copper mine (NPRN 33779) with extensive evidence for Bronze Age activity is located to the north west of the site. Despite the presence of this internationally important mine to date there have been very few above ground features associated with the Bronze Age period found in the area and thus any which were uncovered would be of huge significance. It is thought that this lack of evidence may be as a result of the use of the site as a mine right up until the mid 19th century which may have removed earlier traces of activity.

Smith does mention that an article in the British Archaeological Association journal states that excavations carried out in the vicinity of the tomb found several rough baked sepulchral urns, possibly cremation urns which are attributed to the Roman period (Smith 1875:16). It is however quite possible that modern analysis of these vessels would assign them a Bronze age date.

Iron age

Three hut circles have been identified within the study area, which although undated, have been placed on typological grounds within the Iron Age history of the area. These sites are Penmynydd Uchaf (PRN 15406), Craig Rofft (PRN 15488) and Pyllau Road (PRN 5429). There are also a number of further sites believed to date from this period around the Great Orme but lack of excavation in most instances does not allow for in depth discussion.

Romano-British

A stray Roman coin (PRN 5456) dating from the late second to early third century was recovered from within the search area near the Lletty'r Filiast Neolithic tomb.

Early Medieval

There were no Early Medieval remains within the 500m search radius.

Medieval

Agricultural features from the Medieval period were identified within the 500m search area: cultivation ridges (PRN 15284, 15299 & 15312) and two earth banks (PRN 15286 & 15300).

Post-Medieval

The history of the area in the Post Medieval period is dominated by the Mostyns of Gloddaeth and the Pughs of Penrhyn. The area remained relatively isolated throughout most of the seventeenth and eighteenth centuries, becoming a centre of espionage during William III's campaign against the Irish (*Great Orme Country Park and Local Nature Reserve Management Plan 2011-2016*).

The industrial history of the Great Orme is dominated by the copper mines. Although records of mining activities before the nineteenth century are very sparse the first historical recorded exploitation of the copper ores is dated to 1692 when a lease was given to Sir Thomas Mostyn. However, at the height of the mines production, between 1839-1850, the mines employed up to 300 men and produced over a quarter of a million pounds worth of ore. In 1848 the abolition of import duties on copper combined with the discovery of large copper ore deposits in Australia, north America and Chile ushered in the end of the industry in Wales (ibid). The HER search identified forty-five post medieval sites within the search area which are associated with quarrying or mining activities.

The development of the town of Llandudno as a major seaside resort after 1840 had a profound impact on the land-use of the Great Orme. The Orme began to serve as a backdrop to the resort with major associated developments such as the golf course, Marine Drive, the tramway, the gardens at Happy Valley, the summit café and the cable car and more recently the ski slope (*Great Orme Country Park and Local Nature Reserve Management Plan 2011-2016*). There are numerous listed buildings associated with the development of Llandudno and the Orme as a tourist destination. These are not of direct relevance to the site and buildings in the immediate vicinity of the development plot will be discussed.

During the Second World War the Coastal Artillery School was relocated from the South of England to the Great Orme. The remains of this gunnery school can be found outside the 500m search area on the north-western corner of the headland, now a Scheduled Ancient Monument. Other remains include observation sites, pill boxes and gun emplacements. One of the earliest radar stations was also located on the summit of the Great Orme (ibid).

The only building of note within the immediate area is the Horeb Baptist Chapel which was built in 1860 and converted into a house in 1998. The building of this chapel is presumably what led to the development of Cromlech road.

Cartographic and Photographic Evidence

Tithe Map

The road system as it stands today is not shown on the tithe map and it is hard to determine the exact area that the plot covers. The most likely area is covered by Plot Numbers 373 to 377 - a selection of small enclosed fields owned by Charlotte Champhnays and Margaret Mostyn and occupied by a Thomas Rogers (figure 3).

This group of plots is described under the name Maes-y-Macrell (Maes-y-Facrell) and the use is recorded as pasture, arable and gardens. There is a long rectangular building shown on Plot 376 and although there is no homestead listed the 1851 Census lists Thomas Rogers, a gardener (53), as resident at Maes-y-Facrell along with his wife Elizabeth Rogers (71) and a lodger Elizabeth Wynne (62). Cromlech Road has yet to be built at this time.

Water Board Plan 1853

This document (figure 4) shows a similar layout as the tithe although the farm of Maes -y Feccrell is shown as a single plot with a second small, square building located to the east of the long rectangular building mentioned above. Cromlech Road has yet to be built at this time.

Ordnance Survey Maps

The 1887 Ordnance Survey Map (figure 5) shows Cromlech road much as it appears today. The plots either side of the development area have been developed and the land is included as the garden of Plot 2. There is a small structure in the north-west corner of the plot which is to become the development site and a right of way/path is dotted crossing the site and leading to a newly built house.

The only significant change to the immediate area is the addition of the Mission rooms at the eastern end of Cromlech road which is shown on the 1900 Ordnance Survey Map (figure 6). There are no further changes to the site until the 1964 Ordnance survey which shows that the small building in the north-west corner of the site has been removed.

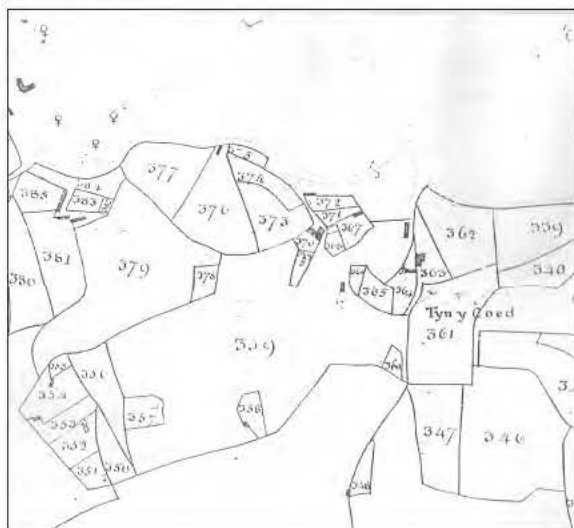


Figure 3. 1841 Tithe Map of Area

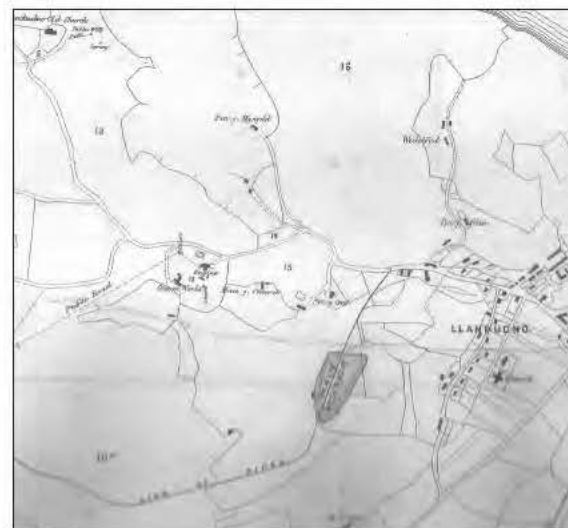


Figure 4. 1853 Water Board Plan of Area



Figure 5. 1887 Ordnance Survey Map



Figure 6. 1900 Ordnance Survey Map

6.0 Results of Archaeological Works

Three recognisable soil horizons were identified within the area stripped. The stripped area shown on figure 7. The upper layer (01) was composed of a mid brown-grey silty clay turf/top soil layer which was on average 0.30m thick. This layer was disturbed and contained artefactual material dating from the modern period with the earliest artefacts being of late nineteenth century date.

Context (02) was a subsoil layer identified beneath Context (01). It was only distinguished from the topsoil by the lack of vegetation and there was no noticeable change in soil composition. It was a mid brown-grey silty clay layer which like the topsoil contained modern material. The thickness of the subsoil was 0.09m - 0.15m.

The natural Context (03) was a friable orange-brown silt clay with sub-angular stone inclusions. The natural was reached at a depth of between 0.40 – 0.50m. To the north of the site the natural turns to a yellowy sandy clay.

A single isolated early twentieth century rubbish pit was uncovered during works. It contained rubbish including glass bottles of local manufacture. The pit was cut into the natural and sealed by the subsoil.

Plates 1 – 6 are a sample of representative shots of the site showing the negative results, the underlying geology and the isolated modern pit.

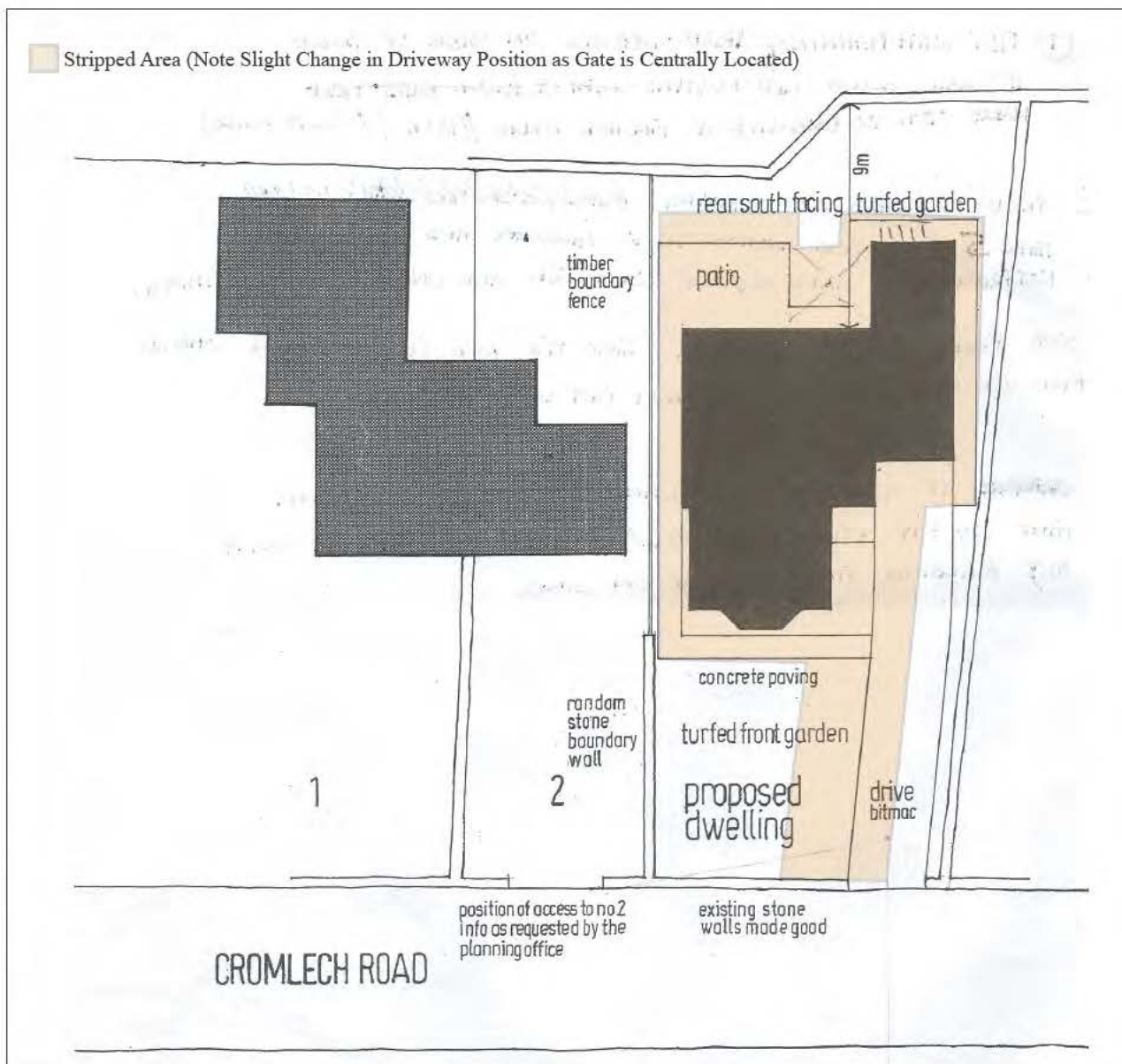


Figure 7. Area Stripped Under Archaeological Supervision



Plates 1 - 6.
Stripped Area at
Cromlech Road.

Sample Shots
Showing Natural,
Modern Rubbish Pit
& Sample Section

7.0 Conclusion

A single modern feature was uncovered during the course of the works at the site. A small number of artefacts of late nineteenth twentieth century date were also recovered from the top/subsoil during the works. The depth of top and subsoil on the plot, coupled with the complete absence of any earlier material, would seem to indicate that this material was brought in to improve the ground or accumulated when it was in use as a garden.

8.0 Bibliography

- AAF. 2007. *Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation*
- Anon. 1912. *Cromleach at Maes-y-fachrell, Great Orme's Head*. Archaeol Cambrensis 146-147
- Dutton, L. A, 1990. '*Llety'r Filiast Chambered Tomb*' in *Archaeology in Wales* 30, 41
- English Heritage. 2006. *Management Of Research Projects in the Historic Environment*
- Jones, J. 1996. *New Discoveries on the Great Orme*. Journal of the Great Orme Exploration Society
- Jones, S. 1999. *The Great Orme Management Plan*. Gwynedd Archaeological Trust Report 399.
- Kelly, R. 1974. *The probable sites of some disappeared chambered tombs in Caernarvonshire in the light of antiquarian references*'. Archaeol Cambrensis 123 175-9
- Lynch, F. 1969. *The Megalithic Tombs of North Wales in Megalithic Enquiries in the West of Britain; A Liverpool Symposium*. Liverpool University Press
- Lynch, F. 1995. *A Guide to Ancient and Historic Wales: Gwynedd*. HMSO
- Lynch, Aldhouse-Green & Davies. 2000. *Prehistoric Wales*. Sutton Publishing. Gloucestershire
- Smith, J. 1875. *The Archaeology of the Great Ormes Head, North Wales: Being a short account of the antiquities of that mountain*. Llandudno
- Smith, G. 2002. *Prehistoric Funerary and Ritual Site Project: West Conwy and North Gwynedd*. Gwynedd Archaeological Trust Report 449
- Smith, G. H. 2003. *Proposed Housing Development at No.1, Pyllau Road, Llandudno: Archaeological Assessment*. Gwynedd Archaeological Trust Report 474.
- Smith, G. H. 1994. *Watching brief: Llandudno Burial Chamber*

The Institute for Archaeologists. 1985 (Revised 2010). *Code of Conduct*

The Institute for Archaeologists. 1990 (Revised 2008). *Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology*

The Institute for Archaeologists. 2001. *Standard and guidance for the collection, documentation, conservation and research of archaeological materials*

The Institute for Archaeologists. 1994 (Revised 2008). *Standard and Guidance for Archaeological Watching Brief*

The Institute for Archaeologists. 2008. *Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives*

Walker, K. 1990. *Guidelines for the preparation of excavation archives for long-term storage*, United Kingdom Institute for Conservation (UKIC) Archaeology Section

Watkinson, D. & Neal, V. 2001. *First Aid for Finds*. London. United Kingdom Institute for Conservation of Historic & Artistic Works

Conwy Archive Material

1841 Tithe Map and Schedule

C.Maps&Plans55/2/1 1853 Waterworks Map of Llandudno

1887 First Edition Ordnance Survey Map

1900 Ordnance Survey Map

1920 Ordnance Survey Map

1958 Ordnance Survey Map

1964 Ordnance Survey Map

Websites (All websites were consulted on 26/02/2014)

www.conwy.gov.uk/upload/public/attachments/580/Great_Orme_Management_Plan_20112016.pdf

www.greatorme.org.uk

www.mapapps.bgs.ac.uk/geologyofbritain/home.html

Appendix A

Specification for Archaeological Works at Plot Adjacent to No 2 Cromlech Road, Great Orme, Llandudno

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Illustrations

Figure 1. Site Location Map

Figure 2. Proposed Development Plans

1.0 Introduction

C.R Archaeology have been instructed by Ms. Lynda Johnston to conduct archaeological works at the above site in compliance with planning conditions placed on the development (Planning Reference 0/38606).

Planning permission has been granted to erect a two storey dwelling with associated access, parking and services (Figure 2).

The proposed development site is situated on the Great Orme, Llandudno (Figure 1). The development plot is located less than 25m to the south-east of the Scheduled Ancient Monument of Llety'r Filiast Neolithic Burial Chamber (SAM Ref No. Cn005). The landscape of the Great Orme itself is considered to be an area of very high archaeological potential. Numerous archaeological sites are recorded on the Great Orme including Bronze Age and later mining activity, Medieval and later Prehistoric/Roman settlement.

The Great Orme headland has been designated a Special Area of Conservation, a Site of Special Scientific Interest and a Heritage Coast (www.greatorme.org.uk).

This specification has been written in response to a brief set by Development Control Archaeologist Jenny Emmett of Gwynedd Archaeological Planning Services (dated 25th October 2013: Ref D1481) as a methodology for a programme of Archaeological Strip, Map and Record.

2.0 Project Aims

This scheme of works aims to strip the development area down to the archaeological horizon/natural in order to assess the survival, character and date of any archaeological remains and to excavate/record any archaeological remains uncovered.

It aims to fulfil the mitigation criteria for archaeological works as specified in a brief prepared by GAPS on the 25th October 2013.

3.0 Brief Historical Background

The following section is, through necessity, brief and is intended to merely place the site in context. A more detailed history of the site will form an element in the proposed works and will concentrate more specifically on the site itself. The content for this section has been summarised from the “*Great Orme Country Park and Local Nature Reserve Management Plan 2011-2016*” produced by Conwy County Borough Council (www.conwy.gov.uk).

The Great Orme is the location of some of the most important Palaeolithic sites in Wales - Kendrick’s Cave and Ogof Tan y Bryn which are approximately 12,000 years old. Numerous stone tools found in or near to caves on the Orme are indicative of a mobile human population utilising the area for thousands of years.

Permanent structures begin to appear in the area during the Neolithic period. Llety’r Filiast is the best preserved of these funerary monuments and is a megalithic burial chamber located close to the copper mines at Pyllau Valley. It is possible that this monument is contemporary with the earliest phases of copper exploitation at the mines.

The Great Orme Copper Mines are the largest prehistoric copper mines in the world and of huge international importance. Following almost 25 years of excavation over 5 miles of accessible tunnels have been recorded. Calculations suggest that over 2,000 tonnes of copper ore were mined over approximately a millennia. A vast number of prehistoric finds relating to this mining activity have been found, including 2,000 hammer stones used to break up the ore, and 30,000 animal bones used as tools. Settlement evidence for the Bronze Age miners is absent.

There is however evidence from the Iron Age date when a number of round houses and the promontory fort of Pen Dinas were constructed. The fort is built on precipitous cliffs with earth and stone ramparts, around a number of houses, sixty-five of which can be identified on the ground today. The influence of Roman colonialism is evident from coin and pottery finds. None are extensive or relate to rectangular structures identified as Roman in style.

Although there are no “dark age” archaeological remains on the Orme it is from this period that the name of the area is thought to derive. The Norse word “orma” means worm or sea-monster and it is believed to have been used due to the shape of the headland when visible from the sea.

The Medieval church of St. Tudno is believed to have an early foundation date, possibly as early as the sixth century. The current church dates from the twelfth century. Fine examples of ridge and furrow field systems survive around the church along with associated remains of the medieval long houses in which the tenants lived.

St. Tudno's lies at the centre of the Medieval township of Cyngreawdr, one of three recorded on the Orme. The other two townships were Gogarth and Yr Wyddfydd. By the fourteenth century Gogarth, belonging to the Bishop of Bangor, had emerged as the most important of the three. A manor house was built there, part of which, known as the Bishop's Palace still remains.

The history of the area in the Post Medieval period is dominated by the Mostyns of Gloddaeth and the Pughs of Penrhyn. The area remained relatively isolated throughout most of the seventeenth and eighteenth centuries, becoming a centre of espionage during William III's campaign against the Irish.

The industrial history of the Great Orme is dominated by the copper mines. Although records of mining activities before the nineteenth century are very sparse the first historical recorded exploitation of the copper ores is dated to 1692 when a lease was given to Sir Thomas Mostyn. However, at the height of the mines production, between 1839-1850, the mines employed up to 300 men and produced over a quarter of a million pounds worth of ore. In 1848 the abolition of import duties on copper combined with the discovery of large copper ore deposits in Australia, north America and Chile ushered in the end of the industry in Wales.

The development of the town of Llandudno as a major seaside resort after 184 had a profound impact on the land-use of the Great Orme. The Orme began to serve as a backdrop to the resort with major associated developments such as the golf course, Marine Drive, the tramway, the gardens at Happy Valley, the summit café and the cable car and more recently the ski slope.

During the Second World War the Coastal Artillery School was relocated from the South of England to the Great Orme. The remains of this gunnery school can be found on the northwestern corner of the headland, now a Scheduled Ancient Monument. Other remains include observation sites, pill boxes and gun emplacements. One of the earliest radar stations was also located on the summit of the Great Orme.

3.1 Topography

The Great Orme is a prominent feature in the landscape, the relatively undeveloped nature of which contrasts with the rest of the mainly developed Creuddyn Peninsula. A number of habitats are represented, such as wooded areas on the lower slopes, grasslands, cliff faces and rock exposures. The Great Orme can be seen for many miles around, from Anglesey and along the North Wales coast, and for many miles inland. Rising 209m (679ft.) from sea level, views from much of the site, but especially the summit, are extensive (www.conwy.gov.uk).

3.2 Geology

The bedrock is recorded as “Loggerheads Limestone Formation - Limestone. Sedimentary Bedrock formed approximately 331 to 335 million years ago in the Carboniferous Period. Local environment previously dominated by shallow carbonate seas. These rocks were formed in warm shallow seas with carbonate deposited on platform, shelf and slope areas; often rich in corals and shelly faunas. May include evaporites where seawater was trapped and salts concentrated by evaporation”. The superficial geology is not recorded (www.mapapps.bgs.ac.uk/geologyofbritain/home.html).

Soil formations are recorded in the “*Great Orme Country Park and Local Nature Reserve Management Plan 2011-2016*”. It states that “recent research into soil/plant interactions on the Great Orme (ITE/NERC 1995) reveals that patches and bands of post-glacial loess (a windblown, fine sand/silt) which are non-calcareous are present on the Great Orme, and in places obscure the underlying limestone. Where the loess is more than approximately 40cm deep over the limestone or boulder clay, heath has developed. Where loess thins out to 20-30cm, calcareous grass heath has developed. Where the loess thins further the influence of the limestone ensures that calcareous grassland occurs. Due to geographical and geological circumstances, the Great Orme's Head is of low agricultural quality in the national classification” (www.conwy.gov.uk).

4.0 Scheme of Works – Methodology

The methodologies employed will conform to The Institute for Archaeologists: *Standard and Guidance for Archaeological Watching Brief* (Revised 2008) and The Institute for Archaeologists: *Standard and Guidance for Archaeological Excavation* (Revised 2008).

4.1 Desk Based Research

A complete and coherent history of the site will be compiled utilising information sourced from Conwy Record Office, Llandudno. A full map progression will be undertaken along with a search of tithe records.

The Gwynedd Historic Environment Record will be consulted and a search radius of 500m will be examined.

These works will be carried out in accordance with the IfA Standards and Guidance for Historic Environment Desk Based Assessment (IfA 1994 (Revised 2009)).

This material will form the historical background for a full archaeological report. The report will include the results of the Strip, Map and Record.

4.2 Archaeological Strip, Map & Record

Due to the potential for archaeological remains a programme of Strip, Map and Record will be implemented at the site. The topsoil and subsoil will be removed from the development area (house footprint, areas of hard standing and service areas) using a mechanical excavator with a toothless ditching bucket down to the archaeological horizon/ underlying natural. A C.R Archaeology staff member will be present during the stripping of the area and once the area has been stripped no machinery may track over the site until the area has been signed off by GAPS.

Where archaeological features are visible, or should any subsoil not have been removed cleanly by machine and may be obscuring any potential remains, areas of the site will be hand cleaned. If archaeological remains/potential archaeological remains are encountered then the features will be marked using spray paint and cordoned off to allow excavation by C.R Archaeology staff.

If archaeological remains are encountered then machine excavation will cease at this level until it is clear in plan than the full extent of any features have been uncovered within the stripping area. If the features extend beyond the limits of the proposed development, but still lie within the overall plot, and it is felt to be beneficial to extend the width of the strip an additional area of up to 1m on either side of the feature will be exposed.

Any archaeological features, structures or remains identified in the course of the excavation will be trowel cleaned by hand. Investigation of such features, structures or deposits will be sufficient to determine their character, date, significance and quality. If features yield suitable material for dating/environmental processing then samples will be taken for processing off site. The size of these samples will depend on the size of the feature but for smaller features a sample of up to 95% will be taken. For larger features a sample of up to 40 litres will be taken. In the event of a significant discovery GAPS will be informed of the discovery and a mitigation strategy agreed before works will progress.

Where bedrock/natural is reached or when modern destruction of any remains is evident further monitoring will not be necessary. This must be confirmed with Gwynedd Archaeological Planning Services before C.R Archaeology ceases monitoring.

C.R Archaeology will notify Jenny Emmett of Gwynedd Archaeological Trust as the date of the commencement of works and if any significant archaeological features are uncovered. A site visit visit will be arranged to allow for the inspection of works.

Fieldwork is to be conducted by Matthew Jones of C.R Archaeology. Additional staff can be brought in as required and all staff members will have experience equivalent to AIfA level and cv's can be provided on request.

4.2.1 Recording

The record forms at C.R Archaeology are based on the English Heritage system and full written, graphic and photographic records will be made in accordance with the English Heritage *Field Recording Manual*. Sample forms can be provided on request. The written record shall comprise completed *pro-forma* record sheets.

Plans, sections and elevations will be produced on gridded, archive standard stable polyester film at scales of 1:10, 1:20 or 1:50, as appropriate. Representative measured sections will be prepared as appropriate showing the sequence and depths of deposits. A temporary benchmark (TBM) will be established on the site. Where possible plans, elevations and sections will contain grid and level information relative to OS data. All drawings will be numbered and listed in a drawing register, these drawing numbers being cross-referenced to written site records. A 'harris matrix' diagram will be created.

A high-resolution 14.2mp Sony Alpha digital camera will be used to create a photographic record of the site. This will be comprised of photographs of archaeological features and appropriate groups of features and structures. Included in each photograph will be an appropriate scale and north arrow. General photographs will also be taken in the event of a negative result.

All photographic records will be indexed and cross-referenced to written site records. Details concerning subject and direction of view will be maintained in a photographic register, indexed by frame number. Images from photography will be stored in a loss-less digital format in this case '*.TIF'.

4.2.2 Additional Mitigation/Contingency Measures

In the event of a significant archaeological discovery being made during the excavation C.R Archaeology will immediately inform both the client and the development control archaeologist. Consultation will take place between C.R Archaeology, GAPS and the client with regards to the most suitable course of action.

In the unlikely event that human remains are encountered site work will cease with immediate effect. The coroner, client and monitoring body will be informed immediately. The company will abide by the requirements of Section 25 of the Burial Act 1857. Any arrangements regarding the discovery of human remains will be at the discretion of HM Coroner whose instruction/permission will be sought. All human remains are to be preserved *in situ*, covered and protected. They will only be removed in exceptional circumstances and with the appropriate Ministry of Justice licence, environmental health regulations, Coroner's permission and, if appropriate, in compliance with the Disused Burial Grounds (Amendment) Act 1981 or other local Act, with adequate security provided in such cases.

Any artefacts recovered that fall within the scope of the Treasure Act 1996 will be reported to the landowner, GAPS and to HM Coroner.

4.2.3 Recovery, Processing and Curation of Artefactual Material

All recovered artefactual material will be retained, cleaned, labelled and stored according to *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials (IfA 2008)* and *First Aid for Finds (Watkinson & Neal 2001)*. The aim will be to create a stable, ordered, well-documented, accessible material archive forming a resource for current and future research (IfA 2008).

All artefactual material will be bagged and labelled with the site code and context number prior to their removal from site. The archive reference number will be clearly marked on all finds.

Each assemblage will be examined according to typological or chronological criteria and conservation needs identified. An assessment report of all post-medieval material will be produced by Matthew Jones and further specialists will be appointed as required. A list of specialists will be prepared prior to the post-excavation phase of works.

Any specialist conservation necessary will be undertaken by Cardiff Conservation Services, Cardiff University. This will be conducted in accordance with guidelines issued by the Institute for Conservation.

Following analysis all archaeological material recovered will be deposited in Llandudno Museum. Processed assemblages will be boxed according to issued guidelines and a register of contents compiled prior to deposition.

The works will be carried out in accordance with The Institute for Archaeologists: *Standard and Guidance for Archaeological Watching Brief* (Revised 2008).

4.2.4 Archive Compilation

All records created during the fieldwork will be checked for consistency and accuracy and will form part of the *Primary Site Archive (P1)* (EH 2006). The archive will contain all data collected, including records and other specialist materials. It will be ordered, indexed, adequately documented, internally consistent, secure, quantified, conforming to standards required by the archive repository

and signposted appropriately to ensure future use in research, as detailed in the English Heritage *Management of Research Projects in the Historic Environment* (MoRPHE) methodology.

The archive will be assembled in accordance with the guidelines published in, *Standards in the museum care of archaeological collections* (Museums & Galleries Commission 1994), *Guidelines for the preparation of excavation archives for long-term storage* (United Kingdom Institute for Conservation, 1990) and *Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation* (AAF 2007).

All materials contained within the *Primary Site Archive (P1)* that are subsequently identified by the *Assessment Report (P2)* as appropriate for analysis will be processed by suitable specialists and the resultant *Research Archive (P3)* will be checked and ordered according to *MoRPHE* criteria.

Any archive/artefactual material created/discovered during this archaeological project will be deposited in Llandudno Museum. Archive material will be deposited in accordance with the museum's terms and conditions for archive deposition.

4.3 Timetable for Proposed Works

It is envisaged that groundworks will commence on Thursday 6th March 2014 and will be carried out on a day rate basis and staff will attend site as necessary. Additional time will be allotted as necessary for archive research, report compilation and site archiving. Gwynedd Archaeological Planning Services will be informed of the exact site days to allow monitoring of works.

4.4 Staffing

The project will be managed by Matthew Jones (BA (Archaeology), MA (Archaeology)). All staff will have a skill set equivalent to the IfA AIfA level. C.Vs for all staff employed on the project can be provided on request. All projects are carried out in accordance with IfA *Standard and Guidance* documents.

4.5 Monitoring

The project will be subject to monitoring by Gwynedd Archaeological Planning Services. The monitor will be given prior notice of the commencement of the fieldwork. A projected time-scale and copy of the risk assessment can be provided on request to the monitoring body prior to the commencement of works.

They will be notified in writing (via email) of the commencement dates for archaeological site work and will be updated with the results of all works conducted as watching brief elements. This will be initially as an telephone call & email with attached JPEG photographs and if/when required further interim reports will be compiled.

4.6 Health and Safety

A risk assessment will be conducted prior to the commencement of works and site staff will be familiarised with its contents. A first aid kit will be located in the site vehicle.

All staff will be issued with appropriate Personal Protective Equipment (PPE) for the site work. Initially this is anticipated to consist of:

- Safety Helmets (EN397)
- Hi-visibility vests (EN471)
- Safety footwear – steel toecap and mid-sole boots and Wellingtons (EN345-47)

Any further PPE required will be provided by C.R Archaeology

All staff will have passed at least a CITB health and safety test at least operative level and will carry a Construction Related Organisation (CRO) White Card for Archaeological Technician (Code 5363) or a Site Visitor card.

C.R Archaeology staff will also comply with any Health and Safety Policy or specific on-site instructions provided by the client or their appointed Principal contractor or H&S coordinator.

4.7 The Report

The report will clearly and accurately incorporate information gained from the programme of archaeological works. It will present the documentary evidence gathered in such a way as to create a clear and coherent record. The report will contain a site plan showing the locations of photographs taken.

As a minimum the report will include:

- A copy of the design brief and agreed specification
- A location plan
- Sufficient historical and archaeological detail to allow interpretation of the results and to support assessment of significance
- All identified features and significant finds plotted on an appropriately scaled site plan
- Full dimensional and descriptive detail of all identified finds and features
- A full bibliography of sources consulted
- An archive compact disc

A copy of the report in Adobe PDF format will be sent to the appropriate monitoring archaeologist for approval before formal submission. A bound paper copy and PDF digital copy of the report will be submitted as part of the formal submission. A digital Adobe PDF version and a bound paper copy of the final report and will be lodged with the Gwynedd Historic Environment Record within six months of completion of fieldwork.

Should the site yield a positive result a short article will be submitted to the Archaeology in Wales Journal and the site archive including copies of all photographs in RAW and Tiff format will be deposited the local museum.

4.7.1 Copyright

C.R Archaeology and sub-contractors shall retain full copyright of any commissioned reports, tender documents or other project documents, under the Copyright, Designs and Patents Act 1988 with all rights reserved; excepting that it hereby provides a licence to the client and the local authority for the use of the report by the client and the local authority in all matters directly relating to the project as described in the Project Specification.

5.0 Bibliography

- AAF. 2007. *Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation*
- Dutton, L. A, 1990. *'Llety'r Filiast Chambered Tomb' in Archaeology in Wales 30, 41*
- English Heritage. 2006. *Management Of Research Projects in the Historic Environment (MORPHE)*
- Jones, J. 1997. *The Search for Bronze Age Habitation Sites on the Great Orme, Llandudno*. Unpublished manuscript (held by Llandudno Museum)
- Jones, S, 1999. *The Great Orme Management Plan*. Gwynedd Archaeological Trust Report 399.
- Smith, G. H. 2003. *Proposed Housing Development at No.1, Pyllau Road, Llandudno: Archaeological Assessment*. Gwynedd Archaeological Trust Report 474.
- Smith, G. H. 1994. *Watching brief: Llandudno Burial Chamber*. File note held in Gwynedd HER Under PRN648 Further Information file
- The Institute for Archaeologists. 1985 (Revised 2010). *Code of Conduct*
- The Institute for Archaeologists. 1990 (Revised 2008). *Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology*
- The Institute for Archaeologists. 2001. *Standard and guidance for the collection, documentation, conservation and research of archaeological materials*
- The Institute for Archaeologists. 1994 (Revised 2008). *Standard and Guidance for Archaeological Watching Brief*
- The Institute for Archaeologists. 2008. *Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives*

Walker, K.1990. *Guidelines for the preparation of excavation archives for long-term storage*,
United Kingdom Institute for Conservation (UKIC) Archaeology Section

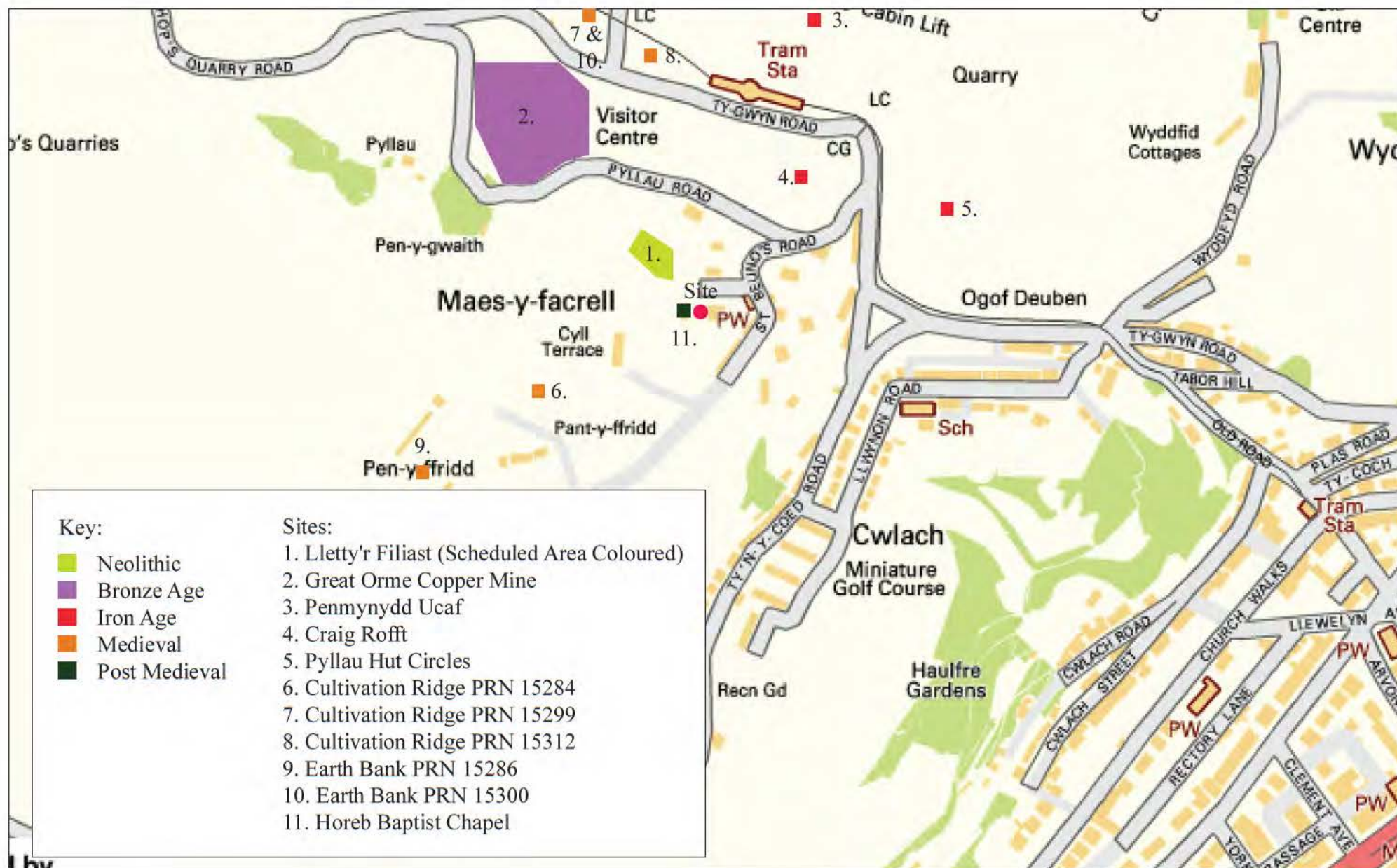
Watkinson, D. & Neal, V. 2001. *First Aid for Finds*. London. United Kingdom Institute for
Conservation of Historic & Artistic Works

Websites (All websites were consulted on 26/02/2014)

www.conwy.gov.uk/upload/public/attachments/580/Great_Orme_Management_Plan_20112016.pdf

www.greatorme.org.uk

www.mapapps.bgs.ac.uk/geologyofbritain/home.html



Appendix B. Site Location Map Showing Main Sites of Archaeological Interest Discussed in Text
Source: OS Open Data (Contains Ordnance Survey data © Crown copyright and database right 2014)