

Great Orme Sewerage Works, Llandudno

Archaeological Watching Brief



Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

GREAT ORME SEWERAGE WORKS LLANDUDNO

Archaeological Watching Brief

Project No. G2439

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Prepared for: Conwy County Borough Council

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1 SUMMARY

Gwynedd Archaeological Trust was commissioned by Conwy County Borough Council to undertake an archaeological watching brief at the summit of the Great Orme, Llandudno. The watching brief monitored ground works associated with the installation of two new septic tanks to serve the CCBC Country Park Visitor Centre and also the Great Orme Summit Complex. The monitoring work took place on 17th and 23rd of November 2015.

No significant archaeology was seen in either trench. Some recent brick rubble probably related to alterations within the summit complex was seen in trench 2. Trench 1 revealed that the boulder clay on the Great Orme is unusual and very varied. It can appear to be composed of many layers and could be confused with spoil from mining.

2 INTRODUCTION

Gwynedd Archaeological Trust (GAT) was commissioned by Conwy County Borough Council (CCBC) to undertake an archaeological watching brief at the summit of the Great Orme, Llandudno (centred on NGR **SH766833**; Figure 1).

The watching brief monitored groundworks associated with the installation of two new septic tanks to serve the CCBC Country Park Visitor Centre and the Great Orme Summit Complex as the current provision is insufficient during the summer months. Tank 1 was located to the north of the main visitor car park and Tank 2 to the north of the Summit Complex building within the grassland (Figure 2).

The groundwork monitored by the watching brief commenced on 17th and were completed on 23rd of November 2015. The site contactor was *A Parry Construction Co. Ltd.*

The scheme was monitored by the Gwynedd Archaeological Planning Service (GAPS). A project design was prepared by GAT, summarising project methodology and background; which was sent to GAPS prior to the start of the watching brief (cf. Appendix 4 for a copy of the design).

The watching brief was completed in accordance with the guidelines specified in *Standard and Guidance Archaeological Watching Brief* (Chartered Institute for Archaeologists, 2014).

3 ARCHAEOLOGICAL BACKGROUND

The sewerage works are located at the summit of the Great Orme, Llandudno to the immediate north of the CCBC Country Park Visitor Centre and the Great Orme Summit Complex. The Great Orme is an area of regional and national archaeological and historical importance. The regional Historic Environment Record (HER) and National Monuments Record (NMR) hold details on several archaeological sites within close proximity of the proposed sewerage works (Figure 1).

The earliest archaeological remains within the immediate vicinity of the sewerage works is a deserted rural settlement (NPRN 91419). The settlement is comprised of a series of building platforms, rectangular building footings (now turf-covered) and enclosure banks. The building platforms and long huts are recorded as (PRNs 643, 4598, 4599, 4600, and 4601). They appear all to be rectangular and typical of medieval structures, despite one being listed on the HER as a Roman period hut circle. The whole elongated site appears to be a complex and long-lived deserted settlement, probably of medieval date. The settlement remains were constructed in the lee of a rocky cliff and steep bank, on the more sheltered north-facing slopes of the Great Orme. They look out across a well-preserved set of medieval strip-fields with cultivation ridges surviving (NPRN 409472/PRN 797, PRNs 15517, 15528 and 15529).

The ridge and furrow field system (NPRN 409472) was investigated by the Gwynedd Archaeological Trust in 2007 through a geophysical survey which identified a ditch (PRN 29827) and a stone pile (PRN 29828) (Hopewell 2007). A watching brief was carried out in November 2008 on the edge of the field system. This identified modern disturbance of the site but also revealed a pit (PRN 29826), possibly a fire pit or oven associated with small scale, prehistoric occupation (Kenney 2008).

The Great Orme Head Telegraph Station (NPRN 300829) was located beneath what is now the Great Orme Summit Complex. The original structure was built of timber and was constructed by the admiralty in 1800/1802 and was subsequently taken over by the telegraph in 1827 and rebuilt in 1841. The station closed in c.1863.

The Telegraph/Great Orme Hotel (NPRN 412156) was built on the site of the telegraph station in 1910. The hotel was taken over by the RAF in 1939 and used as a radar station. In 1952 the hotel was bought by British Middleweight boxing champion Randolph Turpin

and Mr Leslie T. Salts, who made alterations to the building, before re-opening it as "The Summit Complex" in 1953. In 1961 the hotel was transferred to Llandudno Urban District Council, who made further structural alterations to the building. The Summit Complex now includes the Summit Cafe (PRN 20731).

Most of the closest sites to the north-west of the present works are greens and bunkers related to a golf course over the centre of the Great Orme (PRNs 15175, 15176, 15177 and 15420), but some traces of ridge and furrow have also been recorded in this area (PRNs 15383 and 15422). There is also an old quarry marked on the 25 inch maps from 1890, but this is not yet on the HER.

The Great Orme Tramway (NPRN 34664) runs to the Summit Station near the current works. The tramway was opened for passengers on 31 July 1902 and it is shown on the 1913 25 inch map, which has the station merely marked as a tram shed. The Summit Station is now also a visitors' centre.

The closest scheduled ancient monument is a prehistoric hut circle (Cn234, PRN 639, NPRN 300813), but this is over 200m east of the present works. There are no listed buildings on the summit area of the Great Orme.

4 METHODOLOGY

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 (Institute for Archaeologists 2014, *Standard and Guidance for an Archaeological Watching Brief*).

A partial watching brief, with monitoring as and when appropriate, was recommended by GAT for this scheme. Monitoring by the archaeologist was deemed appropriate when the groundworks were to expose undisturbed ground. This applied only to the excavation of the trenches for the two new septic tanks. Works within the existing cess pit would not reveal any archaeology and were not watched. Existing pipes were to be used so there were to be no groundworks related to the pipes.

A 360 degree mechanical excavator with a toothless bucket was used to excavate the trenches, except after bedrock had been reached when a toothed bucket was used. The turf had previously been removed over the areas of the two trenches. The mechanical excavator removed the topsoil over an extended area around each trench and along an access route to each trench. It then dug down within the trench itself to locate the existing ceramic sewerage pipe, and in the case of trench 1 to remove a brick manhole. The trenches were then dug down below the pipes to take the septic tanks.

The trenches were monitored to a level at which it was clear no archaeology would be found. In the case of trench 1 this was watched to its full depth in the middle of the trench. The rest of the lower part of the trench still had to be dug out but it was clear that it was entirely within boulder clay and would not reveal archaeology. Trench 2 was watched down to a depth on 0.9m, at which point it was clearly entirely within fractured bedrock.

All attendances and identified layers were recorded using GAT pro-formas and photographed using a digital SLR camera set to RAW format. The out-lines of the trenches were recorded by a survey grade Global Positioning System (model: *Trimble GNSS/R6/5800*). A photographic record was created. No artefacts were recovered and no soil samples were taken.

5 RESULTS

5.1 Trench 1

Trench 1 was located to the west of the Summit Complex close to the north-eastern corner of the main visitor carpark (SH 76585 83365). Topsoil was stripped from the access route and around the area of the trench. The main trench (excluding topsoil stripped area) measured 3.3m by 2.7m. This was excavated to a maximum depth of 2.5m.

Under up to 0.35m of topsoil (101) and ploughsoil or colluvium (102) was a layer of pale-mid brown silt (103). This resembled the peri-glacial loess (fine wind-blown dust) that is often found as the substrate for soils in north-west Wales, and seemed to be undisturbed.

Below this was a very variable deposit (104) with layers and lenses of different textures and colours; pink clay, orange clayey gravel, very dark grey clayey, pale yellow-brown silt with numerous angular pieces of limestone, and some larger blocks of limestone. The deposit became more consistent with depth, comprising mainly pink clay but still some dark grey clayey gravel. This deposit was initially thought to be spoil from mining, but there is no mining recorded in the immediate area. The fact that it was sealed under the loess layer suggests a glacial origin. A similarly varied layer was seen during the watching brief at St Tudno's Road, where it was interpreted as boulder clay (Kenney 2005, p5). It appears that deposit (104) is the result of boulder clay, containing limestone and other minerals, being deposited over limestone. This has resulted in the varied decay of the rocks and minerals, with some being reduced to gravel.

The ceramic sewerage pipe and manhole had been dug through the ploughsoil (102) and into the underlying deposits.

5.2 Trench 2

Trench 2 was located to the north of the Summit Complex close to the Cable Car Station (SH 76694 83398). Topsoil was stripped from the access route and around the area of the trench. The main trench (excluding topsoil stripped area) measured 4m by 3m. This was excavated to over 0.9m, but was only watched to that depth.

The topsoil (201) and colluvium (202) together were only about 0.2m in depth, and generally directly overlaid shattered bedrock (205). In the south-western side of the current trench it appeared that a previous trench or pit [204] had been dug into this shattered bedrock. This was filled with brick rubble and mortar (203). The rubble

contained electrical wires and was clearly of modern origin. It is likely that the trench had been dug to bury rubble produced by alterations to the Summit Complex buildings at some time.

Only shattered bedrock was seen in the rest of the trench. This was loose and composed of small fragments in the top but became more coherent with larger pieces with depth. In section the *in situ* structure of the rock could be seen, with heavily eroded grykes and bedding planes, even where the stone was so eroded that it was loose and easily removed. This shows that the deposit was indeed undisturbed eroded bedrock.

The relationship between the sewerage pipe trench and the brick deposit (203) was not clear to see but the level of the top of the pipe trench elsewhere demonstrated that it must have cut through the brick deposit and have been partially infilled by bricks.

6 CONCLUSION

No significant archaeology was seen in either trench. Some recent brick rubble probably related to alterations within the summit complex was seen in trench 2. Trench 1 revealed that the boulder clay on the Great Orme is unusual and very varied. It can appear to be composed of many layers and could be confused with spoil from mining.

7 SOURCES CONSULTED

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

Conwy County Borough Council Environment Roads and Facilities drawing no. ETTR1302C-02

English Heritage 1991 *Management of Archaeological Projects*.

Hopewell, D., 2007. Great Orme St Tudno's Road: Proposed Parking Area: Geophysical Survey, unpublished GAT Report No. 692

Kenney, J., 2008. New Car Park, St Tudno's Road, Great Orme, Llandudno: an archaeological watching brief, unpublished GAT Report No. 757

National Monument Record; both exchange data held by Gwynedd HER and Coflein (the online record).

Regional Historic Environment Record (Gwynedd Archaeological Trust, Craig Beuno, Garth Road, Bangor LL57 2RT)

8 FIGURES AND PLATES

Figures

Figure 1. Location of trenches and nearby sites recorded on the HER and NMR (see appendix 1 for list of sites)

Figure 2. Detailed location and shape of trenches (based on drawing ETTR1302C-02)

Plates

Plate 1. Location of trench 1 near Summit Complex, taken from the west

Plate 2. Trench 1 showing mixed boulder clay (104), taken from the north-west

Plate 3. Location of trench 2 near Cable Car Station, taken from the north-west

Plate 4. Brick deposit (203) in trench 2, taken from the south-east

Plate 5. Shattered bedrock (205) in trench 2, taken from the north-west

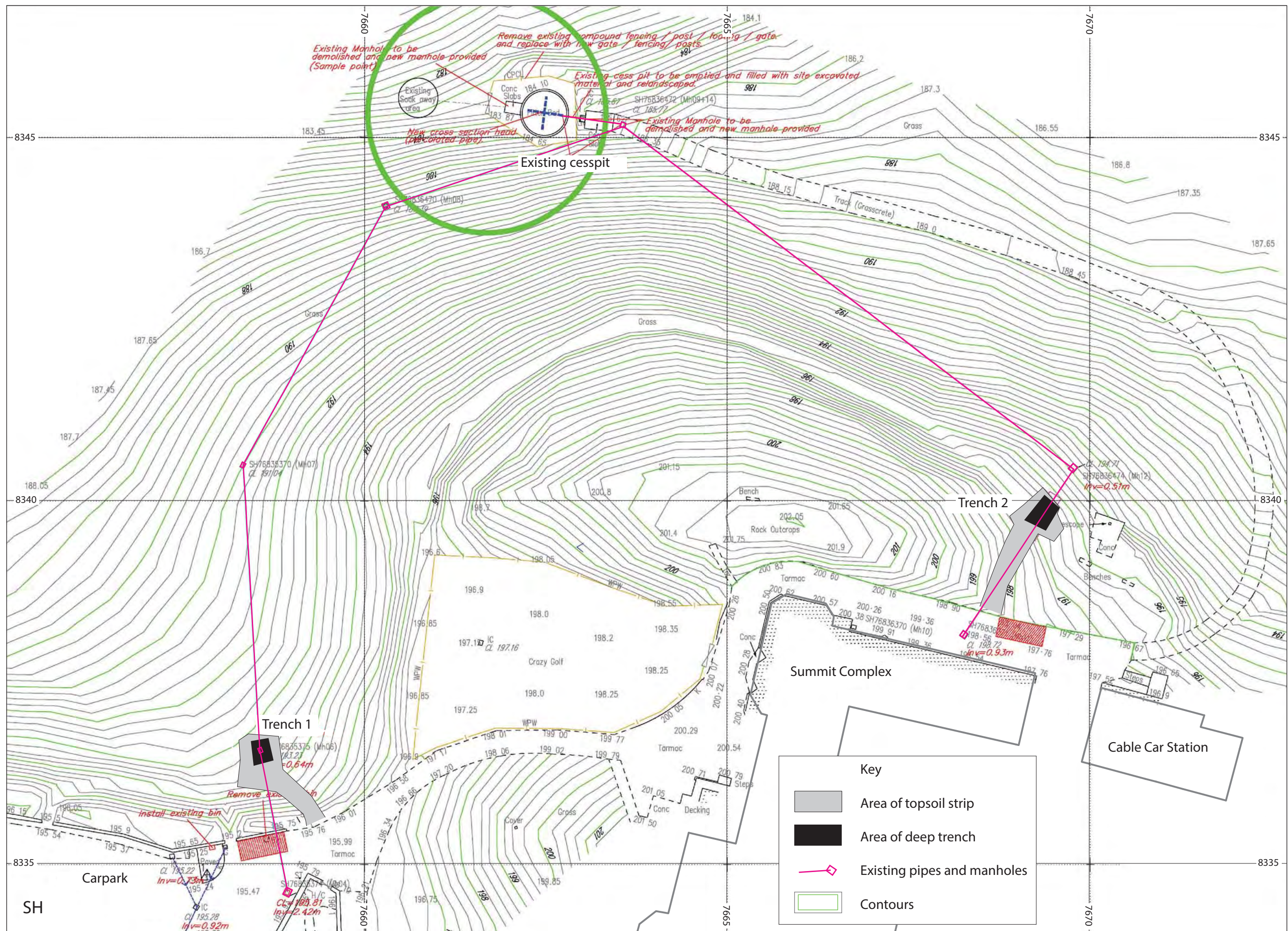




Plate 1. Location of trench 1 near Summit Complex, taken from the west

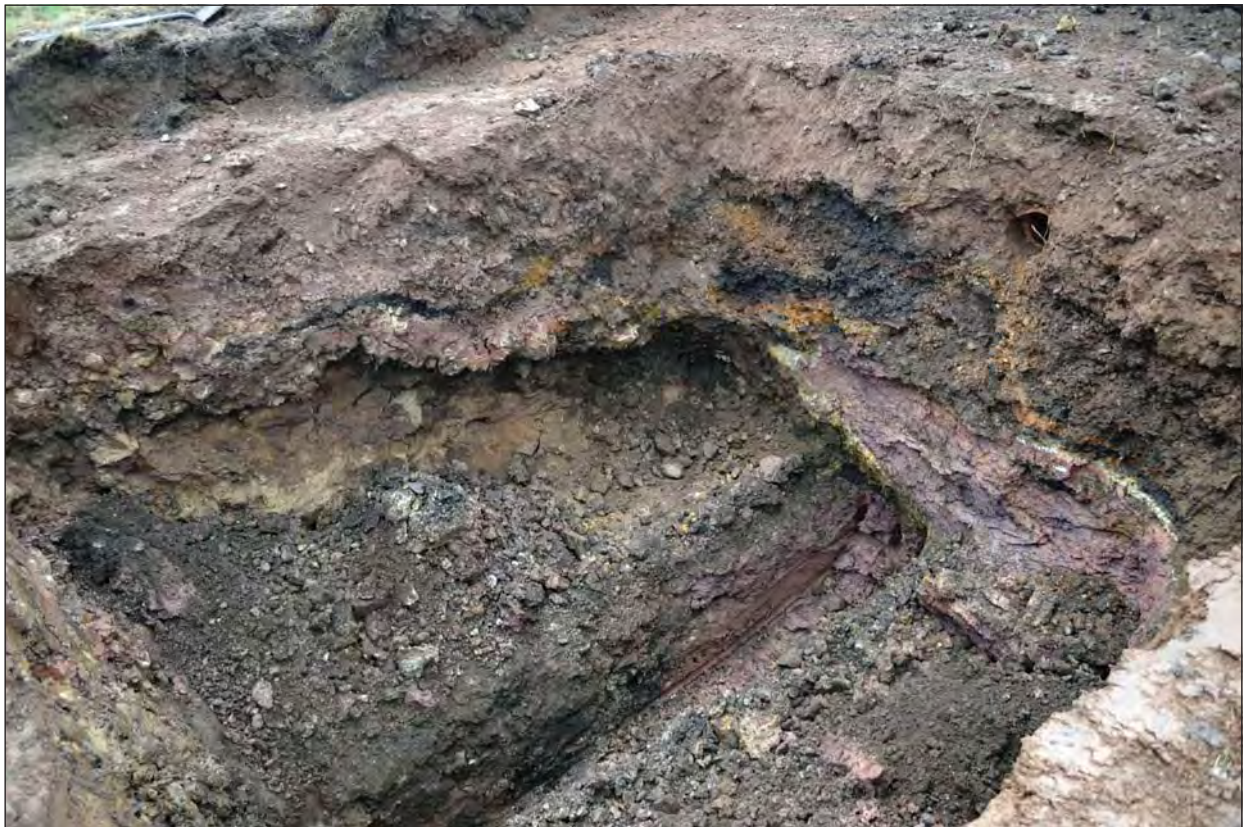


Plate 2. Trench 1 showing mixed boulder clay (104), taken from the north-west



Plate 3. Location of trench 2 near Cable Car Station, taken from the north-west



Plate 4. Brick deposit (203) in trench 2, taken from the south-east



Plate 5. Shattered bedrock (205) in trench 2, taken from the north-west

9 Appendix 1: Sites shown on figure 1

PRN	NPRN	Site name	Period	Grid reference
639		Hut Circle, Bryniau Poethion, Great Orme	Roman	SH76928335
643		Hut Platforms, Central Great Orme	Roman	SH76708350
797		Field System (Ridge and Furrow), Great Orme	Unknown	SH76808350
798		Hut Circle, N of Bishop's Quarries, Great Orme	Unknown; Post-Medieval	SH76458320
4579		Flint Tool, Findspot, SE of Bryniau Poethion	Prehistoric	SH76808330
4598		Hut Platform, N Side Great Orme	Unknown	SH76728349
4599		Hut Platform, N Side Great Orme	Unknown	SH76758345
4600		Hut Platform, N Side Great Orme	Unknown	SH76758343
4601		Hut Platform, N Side Great Orme	Unknown	SH76718349
5450		Bank, Bryniau Poethion, Great Orme	Unknown	SH76928330
15174		Circular Depression, Parc	Unknown	SH76358321
15175		Bunkers, Great Orme Golf Course	Modern	SH76478343
15176		Green, Great Orme Golf Course	Modern	SH76418343
15177		Green, Great Orme Golf Course	Modern	SH76398343
15337		Cultivation Ridges, Parc	Medieval	SH76348357
15379		Cultivation Ridges, Parc	Medieval	SH76408355
15380		Cultivation Ridges, Parc	Medieval	SH76488358
15381		Bunker, Great Orme Golf Course	Modern	SH76488355
15383		Cultivation Ridges, Parc	Medieval	SH76388342
15384		Cultivation Ridges, Parc	Medieval	SH76398359
15400		Cultivation Ridges, Parc	Medieval	SH76348322
15420		Green, Great Orme Golf Course	Modern	SH76448342
15421		Cultivation Ridges, Parc	Medieval	SH76458349
15422		Cultivation Ridges, Parc	Medieval	SH76488345
15423		Trackway, Possible, Parc	Unknown	SH76348349
15424		Lazy Beds? Summit, Great Orme	Medieval	SH76708361
15425		Quarry, Former Site of, Parc	Unknown	SH76688356
15428		Field Bank, Parc	Unknown	SH76688358
15429		Trackway, Parc	Unknown	SH76648359
15517		Cultivation Ridges, Summit	Unknown	SH76658351
15528		Cultivation Ridges, Pant yr Eglwys	Medieval	SH76858353
15529		Cultivation Ridges, Pant Yr Eglwys	Medieval	SH76748358
15537		Cultivation Ridges, Bryniau Poethion	Medieval	SH76938332
15538		Cultivation Ridges, Pyllau	Medieval	SH76938317
15539		Green, Great Orme Golf Course	Modern	SH76368336
15541		Green, Possible, Great Orme Golf Course	Modern	SH76408327
15542		Tee, Possible, Great Orme Golf Course	Modern	SH76438325
15543		Shaft, Parc	Post-Medieval	SH76388329
15545		Field Bank, Parc	Medieval	SH76478318

15546	Field Bank, Parc	Medieval	SH76488320
15547	Cultivation Ridges, Parc	Post-Medieval	SH76398316
15548	Cultivation Ridges, Parc	Medieval	SH76438317
15550	Cultivation Ridges, Bishop's Quarry	Medieval	SH76638318
15551	Cultivation Ridges, Bishop's Quarry	Medieval	SH76548315
15552	Cultivation Ridges, Pyllau	Medieval	SH76758319
15553	Trials, N of Bishop's Quarry	Post-Medieval	SH76598320
15555	Brammock Rod Cutting, Pyllau	Post-Medieval	SH7692583153
15557	Platform, Pyllau	Unknown	SH76918320
15823	Great Orme, Landscape	Multi-Period	SH76808320
16031	Cultivation Ridges, Parc Farm, Great Orme	Post-Medieval	SH76358317
20731	Summit Cafe, Great Orme	Modern	SH76678338
29826	Pit, Great Orme	Prehistoric	SH76948351
29827	Ditch, Great Orme	Unknown	SH76898355
29828	Stone Pile, Great Orme	Unknown	SH76898357
32747	Circular Feature, Parc Farm	Unknown	SH76448356
32748	Field System, Parc Farm	Unknown, Post-Med?	SH76578356
91419	Deserted Rural Settlement, Great Orme's Head	Medieval	SH76778344
300813	Bryniau Poethion, Hut Circle	Prehistoric	SH76928335
300829	Great Ormes Head Telegraph Station	Post Medieval	SH76668338
308411	White Farm; Parc Farm, Great Orme	Post Medieval	SH7668183563
409472	Ridge and Furrow Field System, Great Orme	Prehistoric	SH76808350
412156	Telegraph Hotel; Great Orme Hotel	Modern	SH7665783345

10 Appendix 2: Detailed description of trenches

10.1 Trench 1

Location SH 76585 83365

Size of main trench (excluding topsoil stripped area): 3.3m by 2.7m

Maximum depth: 2.5m

Context	Depth below surface	Description
101	0-0.15m	Active topsoil. Dark brown friable loam.
102	0.15-0.35m	Ploughsoil/colluvium. Dark brown slightly clayey silt with few stones.
103	0.35-0.60m	Sub-soil/loess. Pale-mid brown silt with occasional angular small and medium stones.
104	0.6-2.5m+	Glacial till. Very variable with layers and lenses of different textures and colours; pink clay, orange clayey gravel, very dark grey clayey, pale yellow-brown silt with numerous angular pieces of limestone, with some larger blocks of limestone. The deposit becomes more consistent with depth with mainly pink clay but still some dark grey clayey gravel.
105	0.15m	Pipe trench fill. Redeposited boulder clay. Pipe is ceramic and runs through a brick manhole, which is built up tight against the edges of the pipe trench cut and is not in a separate cut.
106	0.15m	Sewerage pipe trench. Straight trench, difficult to see on surface because of mixed natural into which it is cut and with which it is backfilled.

10.2 Trench 2

Location SH 76694 83398

Size of main trench (excluding topsoil stripped area): 4m by 3m

Maximum depth: digging observed to 0.9m

Context	Depth below surface	Description
201	0-0.1m	Active topsoil. Dark brown friable loam.
202	0.1-0.2m	Colluvium/lower topsoil. Dark grey brown silt with c.75% small angular stones.
203	0.1-0.5m max	Brick rubble, much of it broken with mortar and other rubble. Includes electric wires and is clearly fairly recent.
204	0.1-0.5m max	Pit or trench filled with rubble. Only N side seen in T2. Fairly steep side but rather irregular because of broken rock it is dug through. Deeper at W end. Original function of trench uncertain but might have been dug specifically to bury rubble from an alteration within the summit complex.
205	0.2m+	Shattered bedrock. C.80% small and medium angular pieces of limestone in brown clayey silt matrix. Becomes denser, with larger pieces of stone lower down and <i>in situ</i> structure of heavily eroded grykes and bedding planes can be seen in section even where the stone is quite loose.
206	0.15m	Pipe trench fill. Dark brown silt with 80% angular stone,

		very similar to the higher parts of the shattered bedrock but darker in colour. Redeposited shattered bedrock. Pipe is ceramic and there is no manhole in this trench.
207	0.15m	Sewerage pipe trench. Straight trench, almost certainly cutting through the brick rubble (203) due to the level that the trench is cut from but this was not very clear in plan, probably due to redeposited brick rubble being used to fill the pipe trench.

11 Appendix 3: Photograph Register

File reference	Site sub-division	Contexts	Description	View from	Date	Originating person
G2439_0001.NEF	T1		Starting stripping topsoil, with Summit Complex in background	W	17/11/2015	Jane Kenney
G2439_0002.NEF	T1		Starting stripping topsoil, with Summit Complex in background	W	17/11/2015	Jane Kenney
G2439_0003.NEF	T1	104	Glacial deposits exposed in T1	NE	17/11/2015	Jane Kenney
G2439_0004.NEF	T1	104	Glacial deposits exposed in T1	N	17/11/2015	Jane Kenney
G2439_0005.NEF	T1	104	Section through glacial deposits in T1	N	17/11/2015	Jane Kenney
G2439_0006.NEF	T1	104	Section through glacial deposits in T1	W	17/11/2015	Jane Kenney
G2439_0007.NEF	T1	104	T1 dug to full depth	N	17/11/2015	Jane Kenney
G2439_0008.NEF	T1	104	T1 dug to full depth	NW	17/11/2015	Jane Kenney
G2439_0009.NEF	T2		Location of T2 near Summit Complex	NE	23/11/2015	Jane Kenney
G2439_0010.NEF	T2		Location of T2 near Summit Complex	N	23/11/2015	Jane Kenney
G2439_0011.NEF	T2		Location of T2 near Summit Complex	NW	23/11/2015	Jane Kenney
G2439_0012.NEF	T2	201, 202, 203, 204	Bedrock appearing in section	NW	23/11/2015	Jane Kenney
G2439_0013.NEF	T2	201, 202, 203, 204	Bedrock and brick rubble in section	SE	23/11/2015	Jane Kenney
G2439_0014.NEF	T2	204	Digging into bedrock	SE	23/11/2015	Jane Kenney
G2439_0015.NEF	T2	201, 202, 203, 204	SE facing section of trench	SE	23/11/2015	Jane Kenney
G2439_0016.NEF	T2	201, 202, 203, 204	NW facing section of trench	NW	23/11/2015	Jane Kenney
G2439_0017.NEF	T2		Trench dug into bedrock	SW	23/11/2015	Jane Kenney

12 Appendix 4: Project Design

GREAT ORME SEWERAGE WORKS, CONWY

PROJECT DESIGN FOR AN ARCHAEOLOGICAL WATCHING BRIEF (G2439)

Prepared for Conwy County Borough Council, October 2015

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1. INTRODUCTION

Gwynedd Archaeological Trust (GAT) has been asked by *Conwy County Borough Council* to provide a project design for undertaking an archaeological watching brief at the summit of the Great Orme, Llandudno (centred on NGR **SH766833**). The watching brief will monitor ground works associated with the installation of two new septic tanks to serve the CCBC Country Park Visitor Centre and also the Great Orme Summit Complex as the current provision is insufficient during the summer months. Tank 1 will be located to the north of the main visitor car park and Tank 2 to the north of the Summit Complex building within the grassland (Figure 01).

The work will conform to the guidelines specified in *Standard and Guidance for an archaeological watching brief* (Chartered Institute for Archaeologists, 2014).

The scheme will be monitored by the Gwynedd Archaeological Planning Service (GAPS) and a copy of this design must be approved by GAPS prior to the start of the archaeological watching brief.

2. ARCHAEOLOGICAL BACKGROUND

The proposed sewerage works are located at the summit of the Great Orme, Llandudno to the immediate north of the CCBC Country Park Visitor Centre and the Great Orme Summit Complex. The Great Orme is an area of regional and national archaeological and historical importance. A brief examination of the regional Historic Environment Record (held at the Gwynedd Archaeological Trust, Bangor) and Coflein revealed several archaeological sites within close proximity of the proposed sewerage works (Figure 01).

The earliest archaeological remains within the immediate vicinity of the sewerage works is a deserted rural settlement (**MPRN 91419**). The settlement is comprised of a series of building platforms, rectangular building footings (now turf-covered) and enclosure banks marking the site of a complex and long-lived deserted settlement, probably of medieval date. The settlement remains were constructed in the lee of a rocky cliff and steep bank, on the more sheltered north-facing slopes of the Great Orme. They look out across a well-preserved set of medieval strip-fields with cultivation ridges surviving (**NPRN 409472**).

The ridge and furrow field system (**NPRN 409472**) was investigated by the Gwynedd Archaeological Trust in November 2008. The excavation identified modern disturbance of the site but revealed an ancient pit, possibly a fire pit or oven associated with small scale occupation.

The Great Orme Head Telegraph Station (**NPRN 300829**) was located beneath what is now the Great Orme Summit Complex. The original structure was of timber build and was constructed by the admiralty in 1800/1802 and was subsequently taken over by the telegraph in 1827 and rebuilt in 1841. The station closed in c.1863.

The Telegraph/Great Orme Hotel (**NPRN 412156**) was built on the site of the telegraph station in 1910. The hotel was taken over by the RAF in 1939 and used as a radar station. In 1952 the hotel was bought by British Middleweight boxing champion Randolph Turpin and Mr Leslie T. Salts, who made alterations to the building, before re-opening it as "The

Summit Complex" in 1953. In 1961 the hotel was transferred to Llandudno Urban District Council, who made further structural alterations to the building.

3. METHODOLOGY

3.1 Watching Brief

(Reproduced from 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 **partial** watching brief recommended by GAT for this scheme, to be completed during ground works associated with the installation of two new septic tanks to serve the CCBC Country Park Visitor Centre and also the Great Orme Summit Complex (as defined in paragraph 1.0).

The **watching brief** will consist of the following:

- Observation of non-archaeological excavation works.
- A drawn, written and photographic record of any archaeological structures and deposits that may be revealed.
- Preparation of full archive report.

The watching brief will monitor:

- Ground works associated with the installation of two new septic tanks to serve the CCBC Country Park Visitor Centre and also the Great Orme Summit Complex.

- *Note: GAT recommends that a toothless bucket is used for topsoil/subsoil removal.*

3.2 Basic watching brief methodological procedures

3.2.1 Watching Brief

All attendances and identified features will be recorded using GAT pro-formas and photographed using a digital SLR camera set to RAW format. 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*).

- A photographic record will be maintained throughout, using a digital SLR camera set to maximum resolution in RAW format.
- Any subsurface remains will be recorded photographically, with detailed notations and a measured survey.
- All sections to be drawn at a minimum 1:10 scale
- All plans to be at a minimum 1:20 scale
- Artefacts recovered to be related to their contexts, by three-dimensional recording when closely dateable/typologically distinct items are found.

All features 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; any subsequent excavation will be detailed in an appropriate Further Archaeological Works Design.

Where appropriate, samples for specialist analyses will be taken.

3.3 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 nominated in a post-excavation project design.

Specific palaeoenvironmental strategies for any peat deposits (if encountered) will be discussed with the GAPS if encountered and input from a specialist will be sought during the archaeological excavation on an appropriate sampling strategy to be rationalised in a further archaeological works design.

3.4 Human Remains

Any finds of human remains will be left *in-situ*, covered and protected, and both the coroner and the GAPS 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.

3.5 Small Finds

The vast majority of finds recovered from archaeological excavations comprise pottery fragments, bone, environmental and charcoal samples, and non-valuable metal items such as nails. Often many of these finds become unstable (i.e. they begin to disintegrate) when removed from the ground. All finds are the property of the landowner; however, it is Trust policy to recommend that all finds are donated to an appropriate museum where they can receive specialist treatment and study. Access to finds must be granted to the Trust for a reasonable period to allow for analysis and for study and publication as necessary. All finds would be treated according to advice provided within *First Aid for Finds* (Rescue 1999). Trust staff will undertake initial identification, but any additional advice would be sought from a wide range of consultants used by the Trust, including National Museums and Galleries of Wales at Cardiff and ARCUS at Sheffield.

Unexpected Discoveries: Treasure Trove

Treasure Trove law has been amended by the Treasure Act 1996. The following are Treasure under the Act:

- *Objects other than coins* any object other than a coin provided that it contains at least 10% gold or silver and is at least 300 years old when found.
- *Coins* all coins from the same find provided they are at least 300 years old when found (if the coins contain less than 10% gold or silver there must be at least 10. Any object or coin is part of the same find as another object or coin, if it is found in the same place as, or had previously been left together with, the other object. Finds may have become scattered since they were originally deposited in the ground. Single coin finds of gold or silver are not classed as treasure under the 1996 Treasure Act.
- *Associated objects* any object whatever it is made of, that is found in the same place as, or that had previously been together with, another object that is treasure.
- *Objects that would have been treasure trove* any object that would previously have been treasure trove, but does not fall within the specific categories given above. These objects have to be made substantially of gold or silver, they have to be buried with the intention of recovery and their owner or his heirs cannot be traced.

The following types of finds are not treasure:

- Objects whose owners can be traced.
- Unworked natural objects, including human and animal remains, even if they are found in association with treasure.
- Objects from the foreshore which are not wreck.

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.

3.6. Further Archaeological Works

The identification of significant archaeological features during the controlled strip 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 which cannot be addressed within the provisions of this project design (e.g. burials, structures). This may include any features of demonstrable or likely prehistoric to medieval date and, for post-medieval features, any complex or unusual remains, including industrial activity. The requirement for an FAWD will be determined in conjunction with GAPS 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 GAPS

3.7 Monitoring Arrangements

The GAPS Archaeologist will need to be informed of the project start date and of the subsequent progress and findings. This will allow the GAPS 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.

3.8 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 data will be processed, 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.

4.0 PROCESSING DATA, ILLUSTRATION, REPORT AND ARCHIVING

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

- Non-technical summary
- Introduction
- Aims and purpose
- Specification
- Methods and techniques, including details and location of project archive
- Watching Brief Results
- Summary and conclusions
- 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 (GAPS) and to the client prior to production of the final report.

5.0 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 coincide with the topsoil strip and excavation of the septic tanks, which are scheduled to be undertaken between the 23rd November and 4th December. 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 GAPS.
- 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.

5.1 Historic Environment Record

In line with the regional Historic Environment Record (HER) requirements, the HER must be contacted at the onset of the project to ensure that any data arising is formatted in a manner suitable for accession to the HER. At the onset, the HER Enquiry Form provided by the HER, will be completed and submitted.

6.0 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 GAPS and client. The project archaeologist will be responsible for completing day record sheets 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 in para. 5.

7.0 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.

8. 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

9. REFERENCES

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

English Heritage 1991 *Management of Archaeological Projects*.



Gwynedd Archaeological Trust
Ymddiriedolaeth Archaeolegol Gwynedd

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