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# Glynllifon College Development

## Archaeological Assessment

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GAT Project No. 2092.4  
Report No. 834  
November 2009



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Report No. 834

Prepared for

Capita Symonds

November 2009

By

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# Glynllifon College Development Archaeological Assessment

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## Figures

Fig 1. Location of development area and archaeological and historical sites in the area

Fig 2. Figure 2: development area/archaeological and historical sites in the immediate area/location of test pits

Fig 3. Map of Glynllifon demesne 1751

Fig 4. Glynllifon demesne and Penbryn Bwlan 1790

Fig 5. Map of park and demesne lands at Glynllifon 1824

Fig 6. Part of Llandwrog Tithe map 1849

Fig 7. Ordnance Survey 1889

Fig 8. Ordnance Survey 1900

Fig 9. Ordnance Survey 1918

Fig 10. Location of Features



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# Glynllifon College Development Archaeological Assessment

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## Plates

Plate 1: Conifer plantation feature 1, from the south

Plate 2: Quarry feature 2, from the west

Plate 3: Boat house feature 4, from the east

Plate 4: Bridge feature 5, from the east

Plate 5: Quarry feature 6, from the west

Plate 6: Revetted trackway feature 7, from the southeast

Plate 7: Quarry feature 8, from the west

Plate 8: Test Pit 5

Plate 9: Test Pit 6

Plate 10: Test Pit 7

Plate 11: Test Pit 8

Plate 12: Test Pit 9

Plate 13: Soakaway 5

Plate 14: Soakaway 6

Plate 15: Soakaway 7

Plate 16: Soakaway 8



## **PROPOSED DEVELOPMENT AT GLYNLLIFON, LLANDWROG (G2092.4)**

### **ARCHAEOLOGICAL ASSESSMENT**

#### **SUMMARY**

*An archaeological assessment was carried out on a proposed development site at Glynllifon, Llandwrog, Gwynedd. The assessment identified several features in close proximity to the development area, including three small quarries, a small conifer plantation, a drain, a revetted pathway, bridge and boat house. The farmstead of Glynllifon College and a standing stone of probable Bronze Age origin are also close by. Despite no archaeological features being identified within the study area, these features are associated via their proximity, and their assessment and mitigation recommendations are covered in this report.*

*In addition to this, Gwynedd Archaeological Trust monitored the excavation of five geotechnical test pits and four soakaways at the southwestern end of the development site with the intention of identifying the depth of the bedrock and differentiating the layers of strata extant between the topsoil and the bedrock.*

*The watching brief during these works identified one test pit with archaeological activity: namely a stone filled drain of post-medieval date within test pit 9. No archaeological activity was recorded in any of the remaining pits.*

*Based on the results of the archaeological assessment and the watching brief during the geotechnical works, recommendations are made for a pre-determination geophysical survey of the development area.*

#### **1. INTRODUCTION**

Gwynedd Archaeological Trust (GAT) was asked by Capita Symonds to carry out an archaeological assessment in advance of proposed development at Glynllifon College. The development area is centred on SH44905579 and is located to the north of the farmstead and outbuildings at Glynllifon (figure 01). The development is described as a 'learning village' and is an extension of the facilities based at the college. This report consists of an archaeological assessment of the development area with recommendations for the mitigation of the impact of the works on the archaeology.

#### **2. DESIGN BRIEF AND SPECIFICATION**

A detailed brief has not been prepared for this scheme, but a project design was produced that conforms to the guidelines specified in *Standard and Guidance for Archaeological Desk-based Assessment* (Institute of Field Archaeologists, 1994, rev. 2001 and 2008) and this assessment follows that design.

A desk-based assessment is defined as 'a programme of assessment of the known or potential archaeological resource within a specified area or site on land, inter-tidal zone or underwater. It consists of a collation of existing written, graphic, photographic and electronic information in order to identify the likely character, extent, quality and worth of the known or potential archaeological resource in a local, regional, national or international context as appropriate' (*Standard and Guidance for Archaeological Desk-based Assessment*, IFA 2008, 2).

The aims of the assessment are:

- to identify and record the cultural heritage within the defined study area;
- to evaluate the importance of what has been identified;
- to recommend ways in which impact upon the cultural heritage can be avoided or minimised.

To comply fully with the aims expressed above it can be necessary to undertake a programme of Field Evaluation following the Desktop study and Field Visit. This is because some sites cannot be assessed by desktop or field visit alone, and additional fieldwork is therefore required. This typically takes the form of geophysical survey or trial excavation, although measured survey is also a possible option. A full programme of assessment and evaluation may therefore consist of:

- Desktop study
- Field walkover

- Initial report
- Field evaluation
- Draft report
- Final report

This phase of the project concerns the first three phases only, and recommendations will be made for any field evaluation required.

### **3. METHODS AND TECHNIQUES**

#### **3.1 Desk top study**

The desktop study comprised the consultation of maps, documents, computer records, written records and reference works that form part of the Historic Environment Record (HER) located at Gwynedd Archaeological Trust (GAT), Bangor. Other information held by the HER was consulted including Cadw's register of listed buildings, the 1:2500 County Series Ordnance Survey maps, and the National Archaeological Record index cards. The Register of Outstanding and Special Historic Landscapes and the Register of Parks and Gardens was checked, and also the location of World Heritage Sites.

The archives held by the Gwynedd Record Office, Caernarfon were consulted, particularly for information from the relevant tithe maps and Glynllifon Estate maps. The National Library of Wales was also consulted for estate maps. Aerial photographs held by the National Monuments Record, Aberystwyth, were examined. Secondary sources were examined, including the Inventories of the Royal Commission on Ancient and Historical Monuments for Wales, and works held within the regional libraries. Indices to relevant journals, including county history and archaeology society journals and national society journals such as *Archaeologia Cambrensis* were checked.

Appendix I contains a list of sites, buildings and find spots listed in the GAT HER, the National Monuments Record (NMR) and Cadw's register of listed buildings around the study area. These sites are located on figures 1 and 2. The numbers marked on these figures are PRNs (Primary Record Numbers) identifying the sites on the HER, NPRN (National Primary Record Numbers) identifying the sites on the National Monuments Record and listed building record numbers.

#### **3.2 Field Search**

The field search was undertaken on the 13<sup>th</sup> August 2009. The development area included two large fields, with steady undulating topography divided by a wire fence. The field search involved walking the study area and assessing the sites identified during the desk-based study. Any additional sites noted on the ground were also assessed. The weather was favourable for the field search, however the utilisation of the development area for the grazing of a dairy herd made access to the fields difficult.

#### **3.3 Test Pits**

The watching brief took place between the 28<sup>th</sup> and 29<sup>th</sup> of September 2009. The aims of the watching brief were to monitor the excavation of five geological test pits and four soakaways.

One 8-tonne backhoe excavators with 0.60m wide toothed bucket were used throughout the watching brief.

The work was undertaken by *Strata Survey* and involved the excavations of five geological test pits to establish the composition of the underlying soil and geology (see Appendix II). A total of four soak away pits were opened across the site to establish the water permeability of the geology (see Appendix II).

#### **3.4 Report**

The available information was synthesised to give a summary of the archaeological and historic background and of the assessment and recommendations, as set out below. The features, their evaluation and recommendations are listed separately, and a summary of the overall assessment of the area is given at the end. Moreover, the potential direct and indirect effects of the proposed works on the historic garden, and recommendations are detailed at the end.

The criteria used for assessing the value of features was based upon those used by the Secretary of State for Wales when considering sites for protection as scheduled ancient monuments, as set out in the Welsh Office circular 60/96. The definitions of categories used for impact, field evaluation and mitigation are set out in Appendix III.

## **4. ARCHAEOLOGICAL RESULTS**

### **4.1 Geological and topographic description**

Glynllifon is a mansion house with extensive parkland and pleasure grounds. It lies on the coastal plain between the western foothills of the Snowdonia massif and Caernarfon Bay. The Afon Llifon, which runs through the estate, starts from below the slopes of Moel Tryfan, winds across the coastal plain and enters the sea about 2.5km south-west of Glynllifon.

Glynllifon lies on Lower Cambrian slates, conglomerates and sandstones. To the south the Cambrian slate belt, with its high quality stone used for roofing slates, runs through the Nantlle Valley (Roberts 1979). Glacial drift overlies the bedrock.

The development area consists of two fields running northwest to southeast separated by a wire fence. When combined these fields form a trapezoid shaped area, located to the north of the farmstead belonging to the agricultural college, Coleg Meirion-Dwyfor (figure 2). The study area undulates steadily and is situated on an elevated plateau, defined on its western edge by a steep downward slope covered in woodland. The development area is currently utilised as grazing, and its limits are defined on all sides by wire fencing and woodland.

### **4.2 Archaeological and historical background**

Glynllifon lies within the parish of Llandwrog, in the historic cantref (hundred) of Uwch Gwyrfa, and the former cwmwd (commote) of Arfon, in the old county of Caernarvonshire (Carr 1977, 71). The mansion of Glynllifon itself is listed in the Royal Commission Inventory (1960) as one of the principle monuments in this parish, but finds and upstanding remains suggest the area was occupied throughout much of the prehistoric and historic periods.

#### **4.2.1. Prehistoric**

There was clearly prehistoric activity in this area, although most surviving sites are concentrated on the uplands to the east of Glynllifon. A Neolithic burial chamber (PRN 101) lies about 7.5 km to the south-west, near the coast at Bach-wen. It appears that the estate wanted its own burial chamber as a small cromlech stands in the Park but this appears to be of 18<sup>th</sup> or 19<sup>th</sup> century date (RCAHMW 1960, 187). The cromlech is listed (grade II, listed building number 20497) and the listing records that although there is a tradition that this structure was built by the Second Lord Newborough before 1832, as a mock druidical altar, it is more likely to be the work of F G Wynn in about 1900. A standing stone (NPRN 309,943/PRN 12,904/SAM C356) probably dating to the Bronze Age but only first depicted on the 1918 third edition county ordinance survey map, stands approximately 2m in height, 0.8m in thickness, and 0.7m in width stands to the immediate west of the farmstead and approximately 15m south of the southern limit of the development area.

The standing stone of Maen Llwyd (PRN 1313), further south in the Park, near the drive to Plas Newydd, is genuine and impressive as it stands about 3m high. A mid Bronze Age food vessel was found near its base and the stone was probably erected in the Bronze Age. Another stone (PRN 2265), 1.7m high, stands near Bodfan over 1km west of Glynllifon (RCAHMW 1960, 198) and this is also probably Bronze Age but a small stone (PRN 5529) standing within the current study area is much more doubtful and will be discussed below. A burial urn was found in a mound on a hilltop near Benallt, Bethesda Bach (PRN 596) and another cairn on the lower slopes of Mynydd Cilgwyn (PRN 1387) also produced pottery that was taken to Glynllifon but has since been lost (RCAHMW 1960, 198). The Inventory lists two Bronze Age burnt mounds on the hill slope nearby (PRN 1388 and 1389) (RCAHMW 1960, 198) and others have been found in the area since (PRNs 2350, 2341 and 2342). Two axe-hammers of probable Bronze Age date were found in the Glynllifon Park (PRNs 5768 and 5769) (RCAHMW 1960, xliii, xlv) as well as a stone with a hole in it of unknown date (RCAHMW 1960, xlv, xlv). About a kilometre west of Glynllifon a loopless bronze palstave (PRN 2267) of Bronze Age date was found near Rhos-Maelan (RCAHMW 1960, liii).

There was considerable settlement in the Iron Age in this area. The known roundhouse settlements survive on the edge of the uplands around Mynydd Cilgwyn and up the Nantlle Valley (RCAHMW 1960, 190-197), but this distribution is largely due to differential survival. Settlements probably existed on the lowlands but their remains have been removed by more intensive agriculture. The recovery of the lower stone of a rotary quern (PRN 2286) of probable Iron Age date from near Glynllifon supports this (RCAHMW 1960, lviii).

The major Iron Age site in the area is Dinas Dinlle (PRN 1570); a hillfort is built on an isolated hill near the sea. The fort was defended by two earth ramparts, but coastal erosion has caused much of the site to be lost. The interior contains traces of circular huts and there may be a Bronze Age barrow in one corner. Occupation of the site extended into the Roman period as finds include a ring with an intaglio of victory, coins of Gallienus, the Tetrice, Carausius and Allectus and a fragment of black ware indicating occupation in the 2nd and 3rd centuries AD (RCAHMW 1960, 190).

#### **4.2.2 Roman period**

There must have been considerable Roman influence in this area only about 7.5km south of the fort of Segontium in Caernarfon, but the known archaeological evidence is slight. As well as occupation at Dinas Dinlle continuing into the Roman period it probably also continued on many of the roundhouse settlements in the area but Roman military sites are not common near Glynllifon. It has been suggested that the modern A499 running immediately west of Glynllifon follows the line of a Roman road but this has not yet been proven (Hopewell 2007, 24). The Roman road from Caernarfon to Pen Llystyn must have passed just to the east of the estate. Two lines have been proposed, one to each side of Groeslon, but the exact route in this area is not known (Hopewell 2007, map 28). There is a supposed Roman signal station (PRN 5572) south of Llanllyfni but the HER gives no information about this. Slate may have been quarried in the Nantlle Valley in the Roman period and used to roof the fort of Segontium (Cadw 1998b, 102). As well as the Roman coins found in Dinas Dinlle coins of the Tetrice (AD 270-3) were found at Llwyn y Gwalch, near Dolydd (PRN 1457).

#### **4.2.3. Medieval**

Evidence of medieval settlement in the area is slender, although there is no reason to suppose it was not well settled. There is a medieval township recorded at Dinlle (PRN 7325) and some of the field systems on the hills are probably of medieval date (e.g. PRN 4362), although only one long hut of medieval style has been recorded (PRN 6734) (RCAHMW 1960, 197). The Drws y Coed Copper Mine (PRN 20535) in the Nantlle Valley is believed to have been worked in the thirteenth century. Ffynnon Edliw (PRN 2266) is a holy well situated about 270m west of the gates of Glynllifon. A spring has been enclosed with masonry to form a pool, but its date is not known (RCAHMW 1960, 198).

Although the present church at Llandwrog is modern, erected in 1860 (RCAHMW 1960, 182), it replaced a medieval church demolished in 1858 (PRN 6966) and described by Hyde Hall in the early 19<sup>th</sup> century (Hyde Hall 1952, 213). The circular churchyard and dedication to Saint Twrog suggests an early medieval foundation. Twrog was one of the 'Celtic' saints associated with Saint Beuno (Bowen 1977, 61).

The 1751 estate map (Gwynedd RO, XD2A/1580) (figure 3) marks a house near what is now the main gate as 'Bettws house and garden', this has an adjacent cowshed (beudy) and yard (buarth) and a nearby field is called Cae Tan y Bettws. The Bettws name is then applied to the woodland that covered part of the development area and the name appears on OS maps through to the present day. 'Betws' is a loan word from the Old English 'bed-hus' meaning an oratory. It is a common place name in Wales and first occurs at the beginning of the 13<sup>th</sup> century (Roberts 1992, 44). The name is suggestive of a chapel in this location, of which nothing but the name remained by the 18<sup>th</sup> century. On the 1790 estate map (National Library Ms Maps vol. 95 094/8/2) (figure 4) the house was still there but the name is applied to a farm to the south, so there must be some doubt about the exact location of the chapel site. Wherever it was located it would have lain next to one of the principle medieval routes from Caernarfon to Nefyn or Pwllheli (Williams-Jones 1977a, 78), along which, in 1284, Edward I marched to a tournament held at Nefyn to celebrate his conquest of Wales (Williams-Jones 1977b, 82, 84).

#### **4.2.4 Post-Medieval**

Glynllifon was the seat of one of the most important families in Caernarvonshire; the Glyns of Glynllifon, who, like many of the *uchelwyr* families, took their name from their seat (Parry 1977, 97). The line of Glynllifon claimed descent from the 9<sup>th</sup> century hero Cilmin Droed-ddu, but the earliest historically attested member of the family was Tudur Goch in the 14<sup>th</sup> century (National Library: Dictionary of Welsh Biography (online)). Hwlcyn Lloyd, another ancestor of the Glyns died defending Caernarfon Castle against an attack by Owain Glyndŵr's forces in 1403 (Williams-Jones 1977c, 93). As *uchelwyr*, minor nobility and large landowners, the



Glyns held important posts such as archdeacon of Bangor and Justice of the Peace (Parry 1977, 97; Williams-Jones 1977d, 101). The estate passed into the hands of the Wynn family of Bodfaen in about 1700 when Frances Glynnne, the heiress of the estate married Thomas Wynn (RCAHMW 1960, 185). The Wynn family represented the Borough of Nefyn in parliament for much of the period between 1713 and 1790 (exhibition in Glanrafon Mill, Glynllifon). In 1776 Sir Thomas Wynn was awarded a peerage and was made the first Lord Newborough. The peerage was granted in recognition of his military efforts including building Forts Belan and Williamsburg, the latter within Glynllifon Park (Gwynedd Council (on-line)).

Such an important family needed a house and estate to match their reputation. There are known to have been at least four houses on the site of the present mansion. An existing house was rebuilt in c.1600 and in 1751 another house was added on to this. The 18<sup>th</sup> century house was built in brick and destroyed by fire in 1836. Between 1836 and 1848 the house was entirely rebuilt in stone in the Renaissance style, and in 1890 this house was considerably extended (RCAHMW 1960, 186). A stable block built in 1849 is now used by the agricultural college, and a yard to the north-west of the stables was surrounded by buildings supplying a variety of services including gas works, tannery, smithy, cart sheds and slate mill (Cadw 1998, 207). The water mill to the south-west of the house is shown on maps from the 1820s (Cadw 1998, 207). The mill went out of use by 1900 but in 1915 a powerhouse was built on the back of it with a turbine driven by the water to generate electricity (exhibition in Glanrafon Mill, Glynllifon).

The park in which the house stands is likely to have been originally laid out in the middle of the 18<sup>th</sup> century at roughly the same time as the 1751 house was built (Cadw 1998, 209). The park is surrounded by a substantial stone wall (feature 11 (PRN 11,262 (see figure 11) built in the early 19<sup>th</sup> century by the second Lord Newborough (RCAHMW 1960, 187). There are five lodges at entrances through the wall, the most impressive being the Grand Lodge (feature 14 (PRN 12,575 (NPRN 31,379 (Listed building no. 20478 (see figure 11) at the main western entrance to the estate.

The first Lord Newborough built a lodge at the west gate, possibly in the 1790s (Cadw 1998, 209), but this seems to have been on a slightly different site to the present Grand Lodge. The 1790 map shows a double structure marking the gateway; however, this is to the east of the present lodge. An estate map of 1824 (Gwynedd RO XD2A/857) (figure 5) shows a single small building just to the north of the site of the present entrance but no lodges. The map of 1828 (Gwynedd RO XD2A/858) (figure 6) shows the present double structure in the current position with the entrance area in its current layout. The evidence is further confused by the tithe map (figure 7) that shows a single building to the south side of the drive. It appears from the map evidence that the first Lord Newborough built a double gateway structure but that this was demolished and the gate relocated as new driveways were built. The 1828 map has had additions made to it and if the tithe map can be trusted this suggests that the lodge was one of these additions and that it was not constructed until after 1849. The listed building record comments that the Classical detail of the present lodges and linking archway suggest that it is contemporary with the house built in the 1840s, with remodelling about 1900. The lion on top of the archway originally stood on the stable block and was moved in the late 19<sup>th</sup> century (Cadw 1998, 208).

The main road, the current A499, has had a slightly confused history. In 1751 it ran to the east of the present line but the 1824 map shows an added curve taking it west of farm buildings on the Llandwrog road. The remains of the straight road are indicated but it leads nowhere. The road was back on its present line by 1828.

There were numerous woodlands throughout the park. Hyde Hall (1952, 213) writing in the early 19<sup>th</sup> century describes Glynllifon as surrounded by 'fine wood and plantation'. There were also various ponds and reservoirs. Much of the Afon Llifon where it flows through the park was canalised and pleasure grounds were created on its banks. The pleasure grounds have Italianate water features, a hermitage, which for a short time had a resident hermit, and other follies (Cadw 1998, 210). Several drives ran through the park with bridges where they crossed the Afon Llifon. The routes of these drives altered as the layout of the park was changed. There were three walled kitchen gardens with several glasshouses (Cadw 1998, 215).

Fort Williamsburg (PRN 954) was built within the park in about 1761. The fort is stone-built and is roughly rectangular with angle bastions. It contains a barracks building, also known as the 'summer pavilion' (Cadw 1998, 209) and a small tower, but the Royal Commission considered that it was 'improbable that Williamsburg could have been put to any serious military use' and it seems to have been more a centre for social societies (RCAHMW 1960, 187-188).

In 1948 the estate was sold to a timber merchant and in 1954 the house and park were sold to Caernarvonshire County Council and the buildings later transferred to Coleg Meirion-Dwyfor (Cadw 1998, 210). The house is presently in separate ownership.

The development area lies to the south of the main drive and to the west of the river. Throughout the 19<sup>th</sup> century the land to the south of the main drive and the house was open park land, but in the 18<sup>th</sup> century there was a walled garden and a formal area of woodland with radiating paths to the south of the river. In 1751 the development area was wooded with the area divided into parcels with trees of differing density and presumably different types. By 1790 most of the trees near the river had been cleared. The main driveway had been straightened by 1790 but is shown as curving to the north in 1824. Most of the drives around the development area reached their current form by 1828 but the main drive was not on its current alignment until 1900. By 1828 the curving drive defining the development area had been constructed and the Grand Lodge was built with the semi-circular area in front of the entrance.

### **4.3 Statutory and non-statutory designations**

Glynllifon is registered by Cadw as a park of special historic interest, with grade I listing (register number PGW (Gd) 39 (GWY) (Cadw 1998a, 206) defined as ‘parks and gardens which by reason of their historic layout, features and architectural ornaments considered together make them of exceptional interest’ (Cadw 1998, xiii).

Cadw states (<http://www.cadw.wales.gov.uk/default.asp?id=109>) that grade I parks and gardens are of international importance. Within the park the house is a grade I listed building, the stables, Grand Lodge and Fort Williamsburg are grade II\* and numerous other buildings and structures are grade II. Included within the development area are two grade II listed bridges (record numbers 20445 and 20462).

Glynllifon does not lie within a landscape of either special or outstanding historic interest as defined by Cadw (Cadw 1998b and 2001), but it lies close to the Nantlle Valley registered for its prehistoric settlements and industrial heritage (Ref number HLW (Gw) 9: Cadw 1998, 104).

### **4.4 Aerial Photographs**

There are numerous aerial photographs, some made available by the Royal Commission on their Coflein website. These record changes in tree cover with the trees within the development area being much sparser by 1978 than in 1946, but showing few other details. The photographs taken in March 1973 are the most useful and the woodland edge scarp described below (feature 8) is visible. Otherwise, all features identified were done so during field evaluation or via cartographical sources.

### **4.5 Geotechnical test pits/soakaways**

A total of five test pits and four soakaways were opened across the site with the intention of identifying the depth of the bedrock and differentiating the layers of strata extant between the topsoil and the bedrock (see Appendix II). The watching brief identified one test pit with evidence of archaeological activity, Test Pit 9. This feature is best interpreted as a field drain.

The topsoil across the development site varied in depth from 0.28m (Test Pit 7) to 0.51m (Soakaway 7), but the average depth was 0.30m and the topsoil was generally a mid-brown clay-silt. No variations were noted apart from the intrusion of the feature in Test pit 9.

The deposits below the topsoil were glacial and/or alluvial in origin and appeared to be similar across the site. The only notable change was the deposit of large boulders within Soakaway 6.

The bedrock was often located at considerable depth below ground level, and was only really reached in Test Pit 7 at a depth of 1.10m and Soakaway 5 at a depth of 2.50m. At similar depths all test pits and soakaways showed evidence of gravely deposits, which are suggestive of fluvio-glacial deposits (outwash from glacial activity).

## 5. CATALOGUE OF FEATURES AND RECOMMENDATIONS

The features identified in the archaeological assessment lie within proximity to the development area. They are shown on figure 11 and described below with recommendations for further assessment and mitigatory measures, where appropriate. Due to the grade I listing of the park all existing park features, however minor, are categorised as at least C in importance, as they all contribute to the character of this internationally important parkland. The exception to this is when the actual nature of the feature is unknown and in such circumstances the feature has been labelled category E importance. For a comprehensive definition of the importance categorisation process see Appendix III.

### **Feature 1                      Conifer Plantation      PRN 31006      Plate 1**

SH 45680 55702

*Period: Post medieval*

*Category: C                      Impact: None*

A conifer plantation on the southern edge of the woodland which defines the western edge of the study area. The conifers were most likely planted in the 20<sup>th</sup> Century, and represent the land management implemented at this time. It is unlikely that the development will affect this feature, although it should be included in a survey prior to development.

***Recommendations for further assessment:*** *None*

***Recommendations for mitigatory measures:*** *Avoid/Basic record*

### **Feature 2                      Quarry      PRN 31007      Plate 2**

SH 45769 55880

*Period: Post Medieval*

*Category: C                      Impact: None*

A quarry approximately 12m in height is excavated into the natural escarpment to the west of the development area. The quarry runs approximately 10m into the hillside. This feature is depicted on the first (1889), second (1900) and third (1918) edition county series OS maps, and is labelled as 'old quarry' on all three. None of the earlier estate or tithe maps depicts the quarry, although it may have been viewed as being too insignificant to record. Indeed, it is likely that the quarry is of a post-medieval origin, however the possibility of a much earlier date is possible and therefore the feature should be avoided.

***Recommendations for further assessment:*** *None*

***Recommendations for mitigatory measures:*** *Avoid*

### **Feature 3                      Drain      PRN 31008**

SH 45788 55898

*Period: Post medieval*

*Category: C                      Impact: Unknown*

A cut drain with stone built edges runs west to east and disappears into the development area. The drain is 0.7m wide, 0.5m deep and has sides constructed of compacted medium sized cobbles. Undoubtedly this feature is a fieldrain, intended to serve the development area and is probably of a post-medieval date. The feature is not depicted on any maps, but this is hardly surprising as it would have been considered too insignificant to have been included. The effect of the proposed development upon the drain is unknown, as the degree to which the feature runs beneath the study area is also unknown. It is recommended that a watching brief take place during groundworks and if necessary a basic record of the feature be taken.

***Recommendations for further assessment:*** *None*

***Recommendations for mitigatory measures:*** *Watching brief and basic record*

### **Feature 4                      Boat house      PRN 31009      Plate 3**

SH 45754 56030

*Period: Post medieval*

*Category: B                      Impact: None*

A small building constructed of red-brick but with stone elements lies to the west of the development area, immediately next to a small lake. The building has a slate roof which is in disrepair, but still retains its windows and frames. The building is depicted on the third edition county series OS map (1918) and is labelled as a 'boat house'. When the 1900 and 1918 edition OS maps are compared, it can be seen that a vast majority of the land to the west of the study area was reclaimed from a large lake, and it appears that this building was constructed at this time. The feature is outside the study area and should not be affected by the development.

***Recommendations for further assessment:*** *None*

***Recommendations for mitigatory measures: Avoid***

**Feature 5                      Stone Bridge   PRN 31010   Plate 4**

*SH 45767 55994*

*Period: Post medieval*

*Category: B                      Impact: None*

A stone built bridge with arch spans the base of the quarry (feature 2) to the west of the development area. It appears that the bridge was intended to allow the drainage of water from the quarry, and is in a good state of preservation. The bridge is not depicted on any maps but is certainly of a post medieval date, probably 18<sup>th</sup> or early 19<sup>th</sup> Century. The bridge is outside of the study area and should not be affected by the proposed development.

***Recommendations for further assessment: None***

***Recommendations for mitigatory measures: Avoid***

**Feature 6                      Quarry   PRN 31011   Plate 5**

*SH 45790 55987*

*Period: Post medieval*

*Category: C                      Impact: None*

A quarry is excavated into the natural escarpment, with its dimensions being difficult to ascertain. The feature is depicted on the first (1889), second (1900) and third (1918) edition county series OS maps, and is labelled as 'quarry'. The fact that this feature is not labelled as 'old quarry' which is the case with feature 2 and feature 8, suggests it was excavated at a later date to them, and probably dates to the 19<sup>th</sup> Century. The quarry was almost certainly excavated for practical purposes, however the presence of the footbridge (feature 5) and the revetted trackway (feature 7) around the limits of this feature, suggests it may have been incorporated into the ornamental garden design once it had gone out of use. The quarry is outside of the development area and should be avoided.

***Recommendations for further assessment: None***

***Recommendations for mitigatory measures: Avoid***

**Feature 7                      Revetted Trackway   PRN 31012   Plate 6**

*SH 45774 55961*

*Period: Post medieval*

*Category: C                      Impact: None*

A revetted trackway is terraced into the hillside running northwest to southeast across the southern edge of the quarry (feature 6). The trackway is depicted on the first (1889), second (1900) and third (1918) edition county series OS maps but is not represented on any earlier estate or tithe maps. It is not clear whether the track was constructed as access to the quarry, or was created once the quarry went out of use as an ornamental path. Indeed, it is certainly possible that the track was utilised for both these reasons. The track dissipates upon reaching the edge of the study area and is not depicted as crossing the area on any of the cartographical sources, however it may well have done and evidence of it should be watched for during groundworks, although it seems likely that ploughing in the study area will have destroyed any trace.

***Recommendations for further assessment: None***

***Recommendations for mitigatory measures: Watching brief during groundworks***

**Feature 8                      Small Quarry   PRN 31013   Plate 7**

*SH 45748 55836*

*Period: Post medieval*

*Category: C                      Impact: None*

A quarry is excavated into the natural escarpment to the west of the study area, and is approximately 20m in height. The quarry is depicted on the first (1889), second (1900) and third (1918) edition county series OS maps, and is labelled as 'old quarry' on all three. The feature is probably of a post-medieval date, but there is a possibility it is earlier in origin, and despite not being depicted on earlier cartographical sources, could well have been considered too insignificant to include. The quarry is outside of the study area, and should not be affected by the proposed works.

***Recommendations for further assessment: None***

***Recommendations for mitigatory measures: Avoid***

**Feature 9                      Glynllifon College Farm   PRN 11,362 (see figure 10 for listed building details)**

SH 45840 55550

Period: Post Medieval

Category: A Impact: None

The farmstead at Glynllifon is comprised of nine listed buildings, as well as modern barns and ancillary buildings. The 1751 estate map (figure 3) is the first map to show the presence of small buildings on the site of the current farm, however it is not depicted in its current recognisable form until the 1889 first edition county series OS map. The complex of buildings includes a dovecote and attached range, a former cowhouse, cart-sheds, hay-barns, farmyard ranges, and a former office. The farmstead can be seen as a single unit in respect to this assessment, and as such lies outside of the development area and will not be directly affected by the programme of works. However, the setting and aspect of the buildings will be affected when considered in the form of an essential view (see section 8) and thus sympathetic design is recommended.

**Recommendations for further assessment:** None

**Recommendations for mitigatory measures:** Avoid and sympathetic design

#### **Feature 10 Standing Stone PRN 12,904 NPRN: 309,943**

SH 45770 55574

Period: Bronze Age

Category: A Impact: None

A standing stone measuring 2m in height, 0.8m in thickness, and 0.7m in width stands immediately west of the farmstead (feature 9). It is not depicted on any maps until the third edition county series OS map (1918), but is very probably a genuine Bronze Age standing stone. The stone lies outside of the development area and will not be affected by the proposed programme of works, however the proximity of this feature to the study area highlights the need for a watching brief during groundworks to check for other prehistoric remains.

**Recommendations for further assessment:** None

**Recommendations for mitigatory measures:** Avoid

## **6. SUMMARY OF ARCHAEOLOGICAL POTENTIAL**

All of the features listed above fall outside of the development area and should not be physically affected by the proposed programme of works. However, due to the utilisation of ploughing and agricultural practice within the study area it is certainly possible that features of archaeological value have been disturbed and are no longer identifiable. The features which have been highlighted mostly typify earthworks and land management attributed to the 18<sup>th</sup> and 19<sup>th</sup> Centuries.

The direct and indirect affects of the proposed development upon the setting and character of the historic garden are discussed in section 8.

## **7. RECOMMENDATIONS**

The features highlighted all lie outside of the proposed development area, and it is recommended that they are avoided by the programme of works. If the works are to deviate outside of the pre-designated area, either by design or to enable access/store of materials, then the threat to these features and subsequent mitigatory recommendations will change. A watching brief during groundworks is recommended to observe for any continuation of the drain and trackway (features 3 and 7) through the designated area, as well as to watch for features of archaeological value currently obscured by the agricultural practice.

**Table summarising recommendations**

<b>Feature</b>	<b>Description</b>	<b>Category</b>	<b>Impact</b>	<b>Recommendations for further assessment</b>	<b>Recommendations for mitigatory measures</b>
<b>1</b>	Conifer Plantation	C	None	None	Avoid
<b>2</b>	Quarry	C	None	None	Avoid
<b>3</b>	Drain	C	Unknown	None	Watching brief and basic record
<b>4</b>	Boat House	B	None	None	Avoid

5	Stone Bridge	B	None	None	Avoid
6	Quarry	C	None	None	Avoid
7	Revetted Trackway	C	None	None	Watching brief during groundworks
8	Small Quarry	C	None	None	Avoid
9	Glynllifon College Farm	A	None	None	Avoid and sympathetic construction
10	Standing Stone	A	None	None	Avoid

## 8. IMPACTS OF THE DEVELOPMENT ON THE HISTORIC GARDEN

The gardens at Glynllifon are designated as grade I in the *Register of Parks and Gardens in Wales* (Cadw 1998, 207), with the primary reasons for grading being ‘an outstanding, extensive eighteenth-and nineteenth-century park and pleasure ground with a complete enclosing wall, containing landscaping, planting and many decorative features, including a vista with fountains focused on a cascade, grottoes and intricate water features’ (Cadw 1998, 207).

The proposed development must be considered both from its effects upon the archaeological features within and in proximity to the development area, and from its effects upon the historic setting of the house, ancillary buildings and grounds when seen as an integrated unit, and can be viewed as direct and indirect impacts.

### 8.1 Direct Impacts

The direct impacts upon the historic garden are difficult to determine at this stage due to the development being within its preliminary phase, and detailed plans are unavailable. The development area is currently grazing-land with no trees, however if the woodland or parkland trees (feature 1) in the vicinity were to be felled to enable construction to take place, the character of the park would be directly affected. It has already been noted that ‘the farmland was clearly once mostly parkland but is losing its character with the passage of time - park trees die and are not replaced’ (Cadw 1998, 208). It is therefore strongly recommended that parkland trees in particular are preserved, and if any trees are to be felled due to the programme of works it is recommended that native deciduous tree species be replanted in as close a proximity as possible.

The direct effect of the development upon the parkland pathways should also be considered with the approval of any programme of works, especially if any of the tracks are to be altered in any way to allow access for heavy plant and materials.

The surrounding area is rich in archaeological sites, particularly of the prehistoric period, and the development area must be considered of medium to high potential for the discovery of archaeological remains which are not visible on the surface. Recommendations for further archaeological works are presented in para. 9.0.

### 8.2 Indirect Impacts

Before any programme of works is approved, the indirect effects of the development upon the historic garden should be considered. The subjects of vista and aspect are of importance, in particular when seen as the view from and to the current buildings from the study area, and indeed the view into the parkland from outside the grounds. Once more, it is difficult to fully assess the effects of the proposed development upon the aspect due to the lack of detailed information regarding the proposed project, for example the height of the new buildings will undoubtedly determine their visibility. The view from the farmstead (feature 9) will undoubtedly be affected, however the current essential view from the buildings is limited due to the natural undulation of the designated development area, furthermore this natural undulation and woodland restricts any essential view into the estate across the study area prior to development. So long as the height of the development is limited, the new buildings should have an acceptable affect upon the essential setting of the estate.

The style and character of the new development will have an indirect effect upon the setting of the buildings already in existence at the park, in particular the farmstead (feature 9) which is in close proximity to the study area. At this stage no information is available as to the design of the proposed buildings, however it is recommended that new buildings are constructed in a manner which mitigates impact of views to and from the farmstead, either by design and/or siting.

## **9. CONCLUSION & RECOMMENDATIONS**

The assessment has identified features of interest in close proximity to the development area. The subsequent monitoring of the test pits did not reveal any new archaeological features of significance. However, the test pit sampling was at a very low rate, and there is potential for the survival of archaeological features below the relatively deep topsoil which have not yet been located.

It is therefore recommended that a programme of archaeological evaluation be undertaken as a pre-determination strategy.

The most cost-effective method is magnetometer survey, and it is recommended that this be undertaken within the development area. It may be necessary to follow this with a programme of trial excavation or other intrusive field evaluation techniques. The nature of any further evaluation and the sampling rate required will be identified from the results of the magnetometer survey.

When this evaluation has been carried out and when more detailed designs for the development are received it will be possible to recommend mitigatory measures to minimise the impact of the development on the archaeological and historical features, as well as on the historic garden.

## **10. ARCHIVE**

The archive consists of photographic copies of historic maps, notes made in the field and 49 digital images taken on the field visit. The paper archive is currently held by GAT (project code G2092). The digital archive, including the photographs, will be held by the National Monument Record, Aberystwyth.

A database of new PRN sites has been produced to allow these to be efficiently input into the HER.

A copy of this report will be deposited in the Gwynedd Regional HER and a copy will be provided to the National Monument Record, Royal Commission on the Ancient and Historic Monuments of Wales, Aberystwyth.

## **11. REFERENCES AND OTHER SOURCES CONSULTED**

- Bassett, T.M. and Davies, B.L. (eds), 1977. *Atlas of Caernarvonshire*. Gwynedd Rural Council, Caernarfon
- Bowen, E.G., 1977. 'The Celtic Saints', in Bassett and Davies (eds) 1977, 60-63
- Cadw, 1998. *Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales. Part 1: Parks and Gardens*. Cadw, Cardiff
- Cadw, 1998. *Register of Landscapes of Outstanding Historic Interest in Wales*. Cadw, Cardiff
- Cadw, 2001. *Register of Landscapes of Special Historic Interest in Wales*. Cadw, Cardiff
- Carr, A.D., 1977. 'Medieval Administrative Districts', in Bassett and Davies (eds) 1977, 68-74
- Gwynedd Council: The history behind Glynllifon.  
([http://www.gwynedd.gov.uk/gwy\\_doc.asp?cat=2915&doc=8255](http://www.gwynedd.gov.uk/gwy_doc.asp?cat=2915&doc=8255)).
- Hopewell, D., 2007. Roman Roads in North-West Wales. Unpublished GAT report **668**

Hyde Hall, E., 1952. *A Description of Caernarvonshire (1801-1811)*. Caernarvonshire Historical Society, Caernarfon

IFA, 2008. *Standard and Guidance for Archaeological Desk-based Assessment* (1994, rev. 2001 and 2008).

National Library: Dictionary of Welsh Biography <http://yba.llgc.org.uk/en/s-GLYN-LLI-0850.html>

Parry, T., 1977. 'The Uchelwyr', in Bassett and Davies (eds) 1977, 96-99

RCAHMW, 1960. *An Inventory of the Ancient Monuments of Caernarvonshire. Volume II: Central*. HMSO, London

Roberts, B., 1979. *The Geology of Snowdonia and Llŷn: an outline and field guide*. Adam Hilger Ltd, Bristol

Williams-Jones, K., 1977a. 'Twelfth and thirteenth century mottes and trackways', in Bassett and Davies (eds) 1977, 78-81

Williams-Jones, K., 1977b. 'Edwardian Castles and Boroughs', in Bassett and Davies (eds) 1977, 82-85

Williams-Jones, K., 1977c. 'The Glyndŵr Movement', in Bassett and Davies (eds) 1977, 92-95

Williams-Jones, K., 1977d. 'Justices of the peace in the Tudor and Early Stuart Age', in Bassett and Davies (eds) 1977, 100-103

Institute of Geological Sciences, 1971. Sheet 108, Flint, drift edition

#### **Gwynedd HER, Bangor**

First edition 25 inch County Series Ordnance Survey map sheets Caernarvonshire XX.3 and XX.7 (1889)

Second edition 25 inch County Series Ordnance Survey map sheets Caernarvonshire XX.3 and XX.7 (1900)

Third edition 25 inch County Series Ordnance Survey map sheets Caernarvonshire XX.3 and XX.7 (1918)

#### **Gwynedd Record Office, Caernarfon**

Tithe map of the parish of Llandwrog in the County of Carnarvon (lower part) 1849.

Tithe Apportionment Schedule for the parish of Llandwrog in the County of Carnarvon, 1843.

XD2A/1580: Map of Glynllifon Demesne with schedule of lands (1751)

XD2A/857: Map of park and demesne lands at Glynllifon (1824)

XD2A/858: Map of Glynllifon Demesne in the parish of Llandwrog (1828-1840)

XD2A/859: Sketch plan of Glynllifon Estate within the walls (undated but shows pre-1840 house)

#### **National Library of Wales**

Ms Maps vol. 95 094/8/2: Glynllifon Demesne and Penbryn Bwlan (1790)

#### **National Monuments Record, Aberyswyth**

##### ***Aerial Photographs***

##### ***Verticals***

CPE/UK/1939, date 20<sup>th</sup> January 1947, frame 4067

3G/TUD/UK/193, date 10<sup>th</sup> May 1946, frame 6220

OS 73-017, frame 064, 20<sup>th</sup> March 1973

OS 73-020, frame 095, 21<sup>st</sup> March 1973

Forestry Commission 15/78, frames 219 and 221, 25<sup>th</sup> May 1978

##### ***Obliques***

Film number 965123, frames 57 and 58

Film number AP\_2005, frames 0465-68, 0474-5, 0479-83, 0714-5, 0719-21, 0732

Film number 2003/5099, frames 45-47



## APPENDIX I: Previously known sites in and around the development area

Table 1: GAT HER sites

PR N	NPR N	Site name	NGR	Status	Site type	Period	Notes
954	61273	Fort Williamsburg, Glynllifon	SH46035508	LB GII*	Fort	Post-Medieval	It was built c.1761 with additions in 1773-61. Together with the sister fort at Belan it formed a centre for the social & military activities of the first Lord Newborough.<1> Listed grade II* as a rare and remarkable British example of an C18 private fortification.<2> 1761. Additions 1773-6. Roughly square, angle bastions. Ditches. Escarp/walls. Ornamental gatehouse. HQ building of stone. Tower buildings, domestic.<3>
1436	61272	Plas Glynllifon, Llandwrog	SH45685538	LB GII*	House	Post-Medieval, 18 <sup>th</sup> century	Glynllifon lies towards the west coast of Gwynedd in a 19th-century park. The house is listed grade I and other features in the park are also listed: the stables, entrance arch and two lodges and Fort Williamsburg are grade II* while there are many other features in the extensive park that are grade II such as the unfinished mausoleum and the Mill Folly Grotto. The current classical stone house is three storeys high and was extended to the west in 1890. It has a main entrance to the south with an arcaded porch. It was built in 1836-48 to replace an earlier house which burnt down. This older house, however, was not the first on this site and records can trace buildings here back to 1600. The extensive walled 18th- and 19th-century demesne contains parkland and a pleasure ground along the Afon Llifon which reveal extensive landscaping, woodland, planting and decorative features including fountains and intricate water features. The 19th-century layout is largely preserved. Listed grade I as a fine neoclassical country house that is the focal building within an unusually complete example of a C19 estate and a major, surviving landscaped park.<2> 1836 main building. 3 storey, stone, central ped. portico with 6 ionic columns. Facade extends to west with 2 storey link to 3 storey pavillion.<3>
4412	60135	Parc Glynllifon, Penygroes	SH45505540C		Garden	Post-Medieval, 19 <sup>th</sup> century	
5499	60297	Gas Works & Smithy, Parc Glynllifon	SH45545543		Industrial Building	Post-Medieval, 19 <sup>th</sup> century	
5529	58889	Standing Stone (Poss),	SH454455		Standing stone	Prehistoric	Standing stone upwards of 1m high in field near house. Probably a rubbing stone. <1> Another 'stone' is marked to the NE near buildings, but nothing is known about this. <2>

		Glynllifon Park	30				
5530	58890	Enclosure, Bwlan Farm, Ne Of Llandwrog	SH45 4856 32C		Enclosure	Prehistoric	
5768	63196	Axe Hammer - Findspot, Glynllifon Park	SH46 0055 00		Findspot	Prehistoric	
5769	63197	Axe-Hammer - Findspot, Nr. Glynllifon	SH45 7055 40		Findspot	Prehistoric	
6316	26173	Caer Llwyn House, Llandwrog	SH45 1256 04		House	Post-Medieval	
6966	0	Llandwrog Parish Church	SH45 1056 07		Church	Medieval, post medieval and modern	<p>The site of a medieval church of nave and chancel with double transepts on both sides. It was demolished in 1858 when a new church designed by Henry Kennedy was built. There would appear to be little left in the way of archaeological potential outside the modern church. Some 18th century memorials and a font of 1703 remain from the earlier church.</p> <p>CEMETERY: The churchyard is curvilinear in form with a stone-walled boundary. It is raised up to 1 m above the surrounding ground levels. A linear wall bounds the road on the south side where the churchyard has been encroached. A road curves around the west and north-west sides. The south-east side has been encroached by property boundaries. There are outbuildings on the north side of the churchyard. There is a brick lych gate of the 19th century on the south side. The churchyard was used for burial until recently. The circumference of the churchyard was given as 143 yards in 1729 and 1776 (NLW LLANFAIR AND BRYNODOL P692, NLW B/TERR/569). The area to the north of the present north vestry of the church may contain the structural remains of the north chapel which was demolished in 1858.</p> <p>MEDIEVAL CHURCH: The medieval church cannot be traced within the churchyard or the present church built in 1858-64. A sketch by Hughes and North of the east end of the church made from an old daguerreotype shows a tower with a spire at the west end, which was added in 1834, the fifteenth century east window, a north and south transept and separate chapels on the north and south sides of the chancel (Hughes and North 1924, 243-5). There was a three light window in the east wall of the south chapel, which was probably 16th century in date. In the</p>

							<p>south wall of the chapel was a window of uncertain date and a chimney built into the southern end of the east wall. There was a square headed window in the east wall of the north chapel which may have been early 17th century in date.</p> <p>A terrier of 1729 records the dimensions of the body of the church as 22 yards 14 inches (approx. 19.2 m) in length and 6 yards 8 inches (approx. 5.6 m) in width. The dimension of the transepts were given as 11 yards (approx. 10 m) in width and 6 yards 8 inches (approx. 5.7 m) in width and those of the chapels as 5 yards 9 inches (approx. 4.7 m) in length and 4 yards 29 inches (approx. 4.4 m) wide (NLW Llanfair and Brynodol P692).</p> <p>A western gallery was added in 1834.</p> <p>The church was demolished in 1858 when the present church was built on the site (NLW B/F/266). The ground plan of the present church suggests that it was built on the foundations of the medieval nave, north and south transept, west tower and the south chapel. There is a remote possibility that some of the wall fabric was retained but this could not be ascertained from fieldwork. The north chapel site is probably covered by a modern vestry.</p> <p>MODERN CHURCH: The present large cruciform church with spire was built between 1858-64 by Henry Kennedy (NLW B/F/266, NLW B/C/60), and paid for by Lord Newborough.</p> <p>FITTINGS: Three memorials dating from 1709 to 1749 were moved to the present church and the font of 1703 was moved to the porch. The pulpit in the present church re-used earlier carved panels of the 15th and 16th century. A carved stone panel of the 16th or 17th century, now much weathered, has been reset over the door to a family vault in the present east wall.</p> <p>OTHER: The walls are of coursed stone blocks with modern dressings. Modern slate roof. The exterior is pointed with good stone definition. The interior is plastered.</p> <p>The church is stone floored, with under floor heating, and there are platforms of timber boards beneath the pews.</p>
111 73	0	Mill Folly Grotto, Glynllifon	SH45 8955 32	GII	Grotto	Post-Medieval	
111 89	0	Pandy And Leats, Glynllifon	SH46 1855 35A		Pandy	Post-Medieval	
112 27	0	Barn, Waun Y Gorlan, Glynllifon	SH45 9754 75		Barn	Post-Medieval	
112 28	0	Building Foundations, Glynllifon	SH45 2654 81		Building	Unknown	
112 32	0	Bridge, Glynllifon	SH45 6354		Bridge	Post-Medieval	

			72				
112 62	0	Estate Wall, Glynllifon	SH45 0655 18	GII	Wall	Post- Medieval	
113 62	0	College Farm, Glynllifon	SH45 8455 55	GII	Farm	Post- Medieval	
113 80	0	Pleasure Grounds, Glynllifon	SH46 0455 40		Pleasure Garden	Post- Medieval	
114 50	1681 0	Rose Cottage	SH45 1256 04	LB GII	Building	Post- Medieval	1835. 1 storey. Rubble. Low pitch thin slate roof. Coped end gables. Wood mullion transomed casements. Entrance date stone.
114 63	1683 0	School Cottages, 1, 2 & 3	SH45 1256 04	LB GII	Building	Post- Medieval	19th Century. Early to mid. 2 storey. Uncoursed rubble. Thin slate roof. Gabled advanced centre. Wood mullion transom casements.
116 81	2377 4	Glynllifon Bridges (2)	SH45 5055 31	LB GII	Bridge	Post- Medieval	19th century. Twin bridges. Each with brick lined arches. Faced ashlar. Moulded parapets. Quasi Gothic style with buttresses. Afon Llifon.
119 90	2617 0	Cae'r Eglwys	SH45 1256 04	LB GII	Building	Post- Medieval	1744 Remodelled. 2 storey. stone cottage. Remened thin slate roof. pointed Ent: Arch large slate limtels. Rear shop assition.
119 91	2617 3	Caer Llwyn Cottages 16	SH45 1256 04	GII	Building	Post- Medieval	19th century, possibly 1 storey and loft. 2 advanced portions. Rubble masonary, low pitch fairy thin roof. 3 wood mullion transery casements.
120 43	2626 3	Church Cottages 1,2	SH45 1256 04	GII	Building	Post- Medieval	19th century, 2 storey. Advanced wing fach side. Rubble Recessed wood mullions. Glazing bars. thin slate roof. Projecting faves.
120 97	2635 3	Crescent The, 1,2,3,4 & 5	SH45 1256 04	GII	Building	Post- Medieval	Mid 19th century, advanced side wings. Built on curve. Rubble. Thin slate roof. Recessed wood mullions, small panes.
122 01	2659 5	Harp Inn	SH45 1256 04	GII	Building	Post- Medieval	Early 19th Century. Some earlier work. 2-storey released centre. Splayed wings. Stone. Slate roof. Eaves soffit. Recessed sashes. Loggia with cast iron columns.
125 75	3137 9	Glynllifon,E ntrance Arch+Lodge	SH45 2355 38	GII	Building	Post- Medieval	Archway dated 1900, surmounted by lion and flanking eagles; 2 storey lodges, recessed sashes, ornamental iron gates.

125 76	3138 0	Glynllifon, Stables	SH45 6855 38	GII	Building	Post- Medieval	1849, building of 2 storeys, rectangular courtyard, domed cupola on ionic columns, weather vane, recessed sashes, glazing bars.
125 77	3138 1	Glynllifon, Workshops	SH45 4555 46	GII	Building	Post- Medieval	
126 46	3222 1	Llandwrog, Water Conduits	SH45 0856 06	GII	Well	Medieval ?	Mid 19th century stone. Waterpipe flanked by pilasters with cornice and pediment.
129 04	0	Standing Stone, Glynllifon	SH45 7755 88	SAM C356	Standing Stone	Bronze Age	The monument comprises an impressive standing stone, probably dating to the Bronze Age (c.2300 BC – 800 BC). It is a large narrow block of stone, standing 2m in height and measuring 0.8m in thickness and 0.7m in width. <2>
157 04	0	Llandwrog - Landscape	SH45 1056 10		Landscap e	Multi- period	A gentry-sponsored estate village, dominated by its large Victorian church, built on the site of an early Christian foundation. The Ty'n Llan (Harp) Hotel appears to date from the early nineteenth century, and follows the distinctive local hotel pattern, also exemplified on a much larger scale at the Oakeley Arms, Maentwrog, of a main range from which three parallel ranges extend towards the street. The row of Tai Unicorn on the road from Llandwrog to the main Caernarfon to Pwllheli road are believed to have been constructed in the early nineteenth-century, possibly after the second Lord Newborough assumed his majority in 1823, but the most other buildings, including the large Kennedy-designed church of 1860, are later. Key historic landscape characteristics: Planned settlement, with distinctive Tai Unicorn and cottage ornee styles.<1>
310 01	0	Paddocks	SH45 1755 28		Enclosur e	Modern	Paddock enclosure with wooden fencing.
310 02	0	Trackway	SH45 0655 16		Earthwor ks	Unknow n	A 4m wide trackway running northeast to southwest.
310 03	0	Paddocks	SH45 1055 12		Enclosur e	Post- medieval /modern	Areas of long grass defines one or more paddock enclosures no longer in use.
310 04	0	Ditch	SH45 1255 05		Earthwor ks	Unknow n	A shallow depression 2-3m long, runs northwest to southeast for 20m before turning south.
310 05	0	Conifer Plantation	SH45 0055 06		Garden	Post- medieval	Conifer plantation probably dating to the 20 <sup>th</sup> century within the Glynllifon park gardens.

Table 2. NMR sites

<b>NPRN</b>	<b>Name</b>	<b>NGR</b>	<b>Type</b>	<b>Status</b>	<b>Period</b>	<b>Eastings</b>	<b>Northings</b>
16810	Rose Cottage, Llandwrog; Bwthyn Rhosyn	SH4513556027	Cottage	LB2	Post Medieval	245135	356027
16830	School Cottages, Llandwrog	SH4511756013	Estate Cottage	LB2	Post Medieval	245117	356013
23774	Bridges Over The Llyfon On The Lawn Before Glynllifon	SH4567855317	Bridge	LB2	Post Medieval	245678	355317
26170	Cae'r Eglwys	SH4513356047	House	LB2	Post Medieval	245133	356047
26173	Caer Llwyn Cottages	SH4513255897	Terraced Housing	LB2	Post Medieval	245132	355897
26263	Tai'r Eglwys (Church Cottages)	SH4507756085	Cottages	LB2	Post Medieval	245077	356085
26353	The Crescent, Llandwrog	SH4509956109	Terraced Housing	LB2	Post Medieval	245099	356109
26460	Fort Williamsburgh	SH4603955071	Garden Feature	LB2*	Post Medieval	246039	355071
26526	Glynllifon Mansion, Llandwrog	SH4569655378	Country House	LB1	Post Medieval	245696	355378
26595	Harp Inn, Formerly The Ty'n-Llan Hotel	SH4509056050	Hotel	LB2	Post Medieval	245090	356050
31379	Glynllifon: Entrance Arch And Lodge	SH4523355379	Arch;Lodge	LB2*	Post Medieval	245233	355379
31380	Glynllifon Stable Courtyard, Llandwrog	SH4556055360	Stable	LB2*	Post Medieval	245560	355360
31381	Glynllifon Estate Workshops	SH4546955447	Outbuilding	LB2	Post Medieval	245469	355447
32202	Ffynnon Adliw, Enclosed Well	SH4490155385	Well		Medieval?	244901	355385
32221	Llandwrog, Water Trough Or Fountain House	SH4512056031	Conduit	LB2	Post Medieval	245120	356031
32595	Monumental Drinking Trough	SH4512256112	Trough	LB2	Post Medieval	245122	356112
86377	Glynllifon: Park, Grounds And Gardens	SH4569655378	Country House Garden	PGW1	Post Medieval	245696	355378
301410	Ysgol Llandwrog, Llandwrog	SH4517056030	School	LB2	Post Medieval	245170	356030
301426	Sea View,	SH4515656135	House	LB2	Post Medieval	245156	356135

	Llandwrog						
301427	Tir Iarll, Llandwrog	SH4514856118	House	LB2	Post Medieval	245148	356118
301428	Gwelfor, Llandwrog	SH4515256127	House	LB2	Post Medieval	245152	356127
301810	St Twrog's Church, Llandwrog	SH4512256077	Church	LB2	Medieval;Post- Medieval	245122	356077
302391	Bedd Gwernan Enclosure	SH45485631	Enclosure		Unknown	245480	356310
303832	Tan-Y- Groeslon, Llandwrog	SH45665622	Building	LB2	Post Medieval	245660	356220
304816	Vestry Cottage, Llandwrog	SH4514056105	Vestry	LB2	Post Medieval	245140	356105
308973	Reservoir East Of Fort Williamsburg	SH4630655107	Reservoir		Post Medieval	246306	355107
309943	Glynllifon Monolith, Probable Cattle Rubbing Stone	SH4577055574	Standing Stone	SAM	Unknown	245770	355574
400537	Pwll Crwn; Summerhouse In The Nursery, Glynllifon Park	SH4583554548	Summerhouse	LB2	Post Medieval	245835	354548
401152	Llandwrog	SH4512256077	Village		General	245122	356077
401184	Glynllifon Park, Earthworks Of Tree-Clumps South Of The Fort	SH4607954801	Tree Ring		Post Medieval	246079	354801
403747	Glynllifon Estate, Barn	SH4547955267	Hay Barn	LB2	Post Medieval	245479	355267
404152	Ty'n Rardd, Glynllifon, Llandwrog	SH4537455548	House	LB2	Post Medieval	245374	355548
404759	Cilgant, I The Crescent, Llandwrog	SH4508756099	Cottage	LB2	Post Medieval	245087	356099
405556	Glynllifon, Icehouse	SH4591055309	Icehouse		Post Medieval	245910	355309
406301	Estate Mill At Glynllifon	SH4550755309	Mill	LB2	Post Medieval	245507	355309

Table 3. Listed buildings

Number	Name	Eastings	Northings	Grade
20438	Bridge over Afon Llifon to south of Glynllifon House	245647	355326	II
20439	Fountain Pool adjacent to east side of house	245720	355378	II

20440	Children's Mill or Boat House	245587	355311	II
20441	Sluice, two sluice houses and linking footbridge adjacent to Children's Mill	245585	355327	II
20442	Stone Bridge on the main drive south of the Stables at Glynllifon	245513	355335	II
20443	Watermill to south-west of Stables including archway into mill yard and attached L-shaped range	245509	355312	II
20444	Stone-walled leat adjoining north-east side of Watermill at Glynllifon	245517	355293	II
20445	Stone Bridge to west of Watermill	245484	355307	II
20446	Hay-barn to south of Watermill	245483	355267	II
20447	Stable Courtyard at Glynllifon	245562	355359	II*
20448	L-shaped screen wall adjoining stables and workshops at west end of service drive to kitchen court	245561	355400	II
20449	Rubble-walled rear service drive to west of Glynllifon House	245594	355383	II
20450	Footbridge over service drive to west of Glynllifon House	245584	355390	II
20451	Fountain Pool to east of Stable Courtyard	245611	355360	II
20452	Rubble-walled trackway to north of service drive to west of Glynllifon House	245591	355402	II
20453	Inner arched entrance to courtyard between Palm House and Workshops	245554	355407	II
20454	Palm House including former Eagle House	245566	355417	II
20455	Gardener's Cottage and attached archway to south of Kitchen Gardens	245559	355437	II
20456	Machinery Workshops to north-west of Stables at Glynllifon	245528	355426	II
20457	Eastern Walled Kitchen Garden	245557	355425	II
20458	Western pair of walled former Kitchen Gardens at Glynllifon	245484	355521	II
20459	Workshops	245508	355444	II
20460	Engine House and Chimney adjoining Workshops	245472	355449	II
20461	Ty Rardd	245375	355552	II
20462	Bridge carrying former west drive over Afon Llifon	245352	355133	II
20463	Sundial to rear of Glynllifon House	245703	355417	II
20465	Magazine at Fort Williamsburg	245992	355102	II*
20466	Tunnel Passage at Fort Williamsburg	246018	355099	II*
20467	Outer Defensive Wall to Fort Williamsburg	246071	355020	II*
20468	Gatehouse at Fort Williamsburg	246044	355112	II*
20469	Armoury at Fort Williamsburg including attached screen walls	246067	355061	II*
20470	Barracks at Fort Williamsburg	246080	355054	II*
20471	Footbridge over Afon Llifon to east of house	245818	355348	II
20472	The Mill Folly Grotto including stone bridge, south of the Afon Llifon	245891	355318	II
20474	Cascade at Glynllifon	245972	355331	II
20475	Stone Footbridge to north-east of the Fountain at the end of the vista	246085	355435	II
20476	Fountain at end of east vista	245968	355352	II
20477	Iron Footbridge over Afon Llifon	246141	355495	II
20478	Grand Lodge including Archway at main entrance to Glynllifon	245226	355370	II*
20479	Rubble Footbridge below the Hermitage	246212	355519	II
20480	Hermitage	246204	355533	II
20481	Iron Footbridge approximately 150m south-west of the high bridge over the East Drive	246264	355843	II
20482	Stone Bridge carrying East Drive over Afon Llifon immediately	246287	355862	II



	north of one of the iron footbridges			
20484	Cave on south-east side of Afon Llifon approximately 190m south-west of the bridge over East Drive	246250	355796	II
20485	Eastern Cavern north of the path near main east vista fountain	245965	355378	II
20486	Western Cavern north of the path near main east vista fountain	245917	355381	II
20487	Former Farm Office at Glynllifon College Farm	245869	355562	II
20488	Two parallel farmyard ranges to north-east corner of Glynllifon College Farm	245881	355560	II
20489	Cartsheds and attached range on south-east side of upper farmyard at Glynllifon College Farm	245877	355537	II
20490	Dovecote and attached range to left at south-east corner of farmyards at Glynllifon College Farm	245853	355502	II
20491	Pair of Hay-barns in centre of upper farmyard at Glynllifon College Farm	245855	355535	II
20492	Former Cowhouse to south-west side of upper farmyard at Glynllifon College Farm	245834	355506	II
20493	Tall Barn between upper and lower farmyards at Glynllifon College Farm	245834	355538	II
20494	Parallel Farm Ranges and linking arched entrance into lower farmyard at Glynllifon College Farm	245813	355548	II
20495	L-shaped Range of farm buildings, including walled enclosure to south, at Glynllifon College Farm	245807	355529	II
20496	Northern Range to lower farmyard, including attached cross-range to east, at Glynllifon College Farm	245835	355564	II
20497	Cromlech	245712	355200	II
20498	Fountain near south-west corner of Glynllifon House	245631	355367	II
20499	Ionic Column on former East Drive	245953	355405	II
20500	Pair of Stone Bridges beside Iron Bridge and below Hermitage	246168	355538	II
20501	Rubble Footbridge uphill from Hermitage	246254	355524	II
20502	Rubble Footbridge between Iron footbridge and Cave	246261	355809	II
20503	Fountain pool including iron pipe in Coed y Terrace wood south-west of the Farm	245784	355481	II
22406	Ysgol Llandwrog	245170	356030	II
22408	Cemetery Walls and Gates	245201	356002	II
22416	Sundial at the Church of St Twrog	245092	356077	II
22417	Church of St Twrog	245121	356077	II*
22418	Lych-gate and churchyard wall at the Church of St Twrog	245090	356071	II*
22420	No.1 (Sea View)	245157	356137	II
22421	No.2 (Tir Iarll)	245148	356120	II
22422	No.3	245153	356128	II
22423	Vestry Cottage & Former Vestry	245140	356105	II
22424	Tan-y-groeslon	245667	356222	II
22425	Nos.3 & 4 Ffrwd	245620	356154	II
22426	Cottage/outbuilding at Tan-y-groeslon	245661	356208	II
22427	Horse Drinking Trough	245120	356030	II
22428	Horse Drinking Trough	245122	356112	II
22444	The Nursery	245820	354490	II
22446	North Lodge	245762	356196	II
3684	Glynllifon	245662	355388	I
3685	Tyn Llan (Harp Hotel)	245088	356052	II
3772	No.1 Tai'r Eglwys (Church Cottages)	245075	356081	II

3773	No.2 Tai'r Eglwys (Church Cottages)	245079	356090	II
3774	No.1 Cilgant (The Crescent)	245089	356097	II
3775	No.2 Cilgant (The Crescent)	245094	356104	II
3776	No.3 Cilgant (The Crescent)	245102	356109	II
3777	No.4 Cilgant (The Crescent)	245107	356112	II
3778	No.5 Cilgant (The Crescent)	245115	356112	II
3779	Caer Eglwys	245133	356048	II
3780	Bwthyn Rhosyn (Rose Cottage)	245136	356027	II
3781	No.1 Tai'r Ysgol (School Cottages)	245117	356006	II
3782	No.2 Tai'r Ysgol (School Cottages)	245117	356014	II
3783	No.3 Tai'r Ysgol (School Cottages)	245115	356020	II
3784	No.1 Cae'r Llwyn Cottages	245132	355876	II
3785	No.2 Cae'r Llwyn Cottages	245134	355885	II
3786	No.3 Cae'r Llwyn Cottages	245132	355893	II
3787	No.4 Cae'r Llwyn Cottages	245132	355902	II
3788	No.5 Cae'r Llwyn Cottages	245131	355910	II
3789	No.6 Cae'r Llwyn Cottages	245127	355920	II
3790	Bridge over Afon Llifon to south-east of Glynllifon House	245714	355314	II
3791	Tower at Fort Williamsburg	245998	355099	II*

## **APPENDIX II: Results of the geotechnical test pits/soakaways**

Identified deposits and features were recorded photographically and by notes and sketches. The archive is held by GAT under the project number (**G2092.4**).

Each test pit will be described separately. For their individual locations see Figure 1.

Test Pit 05 (Figure 01; Plate 01)

Size: 2.50m x 0.77m Depth 2.90m

### **Description**

The topsoil was extant to a depth of 0.31m and was followed by a thick deposit of light brown sandy silt with occasional small stone to a depth of 0.50m. Below this there was deposit of clay silt with occasional small angular stones to a depth of 0.38m. This rested on a bed of compact stones with a similar clay silt soil matrix this was excavated to a depth of 1.71m

### **Interpretation**

No archaeological remains were identified in the test pit.

Test Pit 06 (Figure 01; Plate 02)

Size: 2.80m x 0.77m Depth 3.00m

### **Description**

The topsoil was extant to a depth of 0.36m and was followed by a thick deposit of light brown sandy silt with occasional small stone to a depth of 0.40m, a similar deposit but with a higher frequency of stone followed for a depth of 0.82m. This rested on brown clay silt with a high frequency large sub- angular stones leading down to shale type natural with a depth of 1.42m.

### *Interpretation*

No archaeological remains were identified in the test pit.

Test Pit 07 (Figure 01; Plate 03)

Size: 2.20m x 0.77m Depth 2.80m

### **Description**

The topsoil was extant to a depth of 0.28 and was followed by a thick deposit of light brown sandy silt with occasional small stone to a depth of 0.32m, a similar deposit but with a higher frequency of stone followed for a depth of 0.50m. This rested on brown clay silt with a high frequency large sub- angular stones leading down to shale type natural with a depth of 1.90m.

### **Interpretation**

No archaeological remains were identified in the test pit.

Test Pit 8 (Figure 01; Plate 04)

Size: 1.80m x 0.77m Depth 3.00m

### **Description**

The topsoil was extant to a depth of 0.40m and comprised a dark a brown humic topsoil; three glacial deposits followed this: a light brown silt clay, 0.52m thick and an light grey sandy silt, 0.48 thick and a brown gravel natural with a silt soil matrix with a depth of 1.60m .

### *Interpretation*

No archaeological remains were identified.

Test Pit 09 (Figure 01; Plate 05)

Size: 2.50 x 0.60m Depth 2.45m

### **Description**

The topsoil was extant to a depth of 0.41. A single feature was observed cut into the layer below the top soil. The fill of this feature was made up of large and medium sized stones to a depth of 0.40m and width of 0.52m. The stones were in a soil matrix very similar to the top soil, suggesting the feature was cut from the present ground surface.

This was followed by a thick deposit of light brown sandy silt with occasional small stone to a depth of 0.42m. Below this was a clear layer of light grey sand silt to a depth of 0.22m, a deposit with a similar make up but with a higher frequency of stone (weather rock) followed for a depth of 1.39m.

### *Interpretation*

The feature is best interpreted as a stone filled field drain of post-medieval date, however the size of the inspection trench was too small to allow this to be confirmed with certainty, and it may be a stone-filled pit. It's location immediately below the topsoil would suggest it cannot be earlier than post-medieval in date.

### The Soakaways

A series of "soakaway" tests were conducted across the development area in tandem with the test pits. The soakaways were of similar size to the geotechnical test pits and the procedure involved removing the topsoil and subjecting the underlying subsoil to a water permeability test.

SA 5 (Figure 01; Plate 06)

Size: 2.40m x 0.47m Depth 2.50m

#### **Description**

The topsoil was extant to a depth of 0.38m and comprised brown loam; this was followed by a light-brown sandy silt, 0.56m deep. Following this was a light brown gravely silt with evidence of bed rock pushing through at its base, to a depth of 1.56m.

#### *Interpretation*

No archaeological remains were identified in the soakaway

SA 6(Figure 01; Plate 07)

Size: 2.10m x 0.45m Depth 2.10m

#### **Description**

The topsoil was extant to a depth of 0.35m and comprised a brown loam, followed by three glacial deposits: a light brown compacted sandy gravels, 0.51m thick, below this there a layer of large boulders with a brown clay matrix with a depth of 0.86m. The natural was made up of compact grey gravels with light brown soils to a depth of 0.38m.

#### **Interpretation**

No archaeological remains were identified in the soakaway

SA 7(Figure 01; Plate 08)

Size: 2.40m x 0.40m Depth 2.21m

#### **Description**

The topsoil was extant to a depth of 0.51m and comprised a brown humic topsoil; three glacial deposits followed this: an orangey gravel, 0.18m deep and a compact clay deposit with a depth of 0.48m, below this there was a brown gravel-sand 1.04 deep.

#### *Interpretation*

No archaeological remains were identified in the soakaway.

SA 8(Figure 01; Plate 09)

Size: 2.10m x 0.32m Depth 2.30m

#### **Description**

The topsoil was extant to a depth of 0.32m and comprised a brown loam, followed by three glacial deposits: a light brown compacted sandy gravels, 0.49m thick, below this there was a dark brown clayey silt with a depth of 0.62m. The natural was made up of compact grey gravels with light brown soils to a depth of 0.87m.

#### *Interpretation*

No archaeological remains were identified in the soakaway

## **APPENDIX III: Definitions of categories used for impact, field evaluation and mitigation**

### **1 Categories of importance**

The following categories were used to define the importance of the archaeological resource.

*Category A - Sites of National Importance.*

Scheduled Ancient Monuments, Listed Buildings of grade II\* and above, as well as those that would meet the requirements for scheduling (ancient monuments) or listing (buildings) or both.

Sites that are scheduled or listed have legal protection, and it is recommended that all Category A sites remain preserved and protected *in situ*.

*Category B - Sites of regional or county importance.*

Grade II listed buildings and sites which would not fulfil the criteria for scheduling or listing, but which are nevertheless of particular importance within the region.

Preservation *in situ* is the preferred option for Category B sites, but if damage or destruction cannot be avoided, appropriate detailed recording might be an acceptable alternative.

*Category C - Sites of district or local importance.*

Sites which are not of sufficient importance to justify a recommendation for preservation if threatened.

Category C sites nevertheless merit adequate recording in advance of damage or destruction.

*Category D - Minor and damaged sites.*

Sites that are of minor importance or are so badly damaged that too little remains to justify their inclusion in a higher category.

For Category D sites, rapid recording, either in advance of or during destruction, should be sufficient.

*Category E - Sites needing further investigation.*

Sites, the importance of which is as yet undetermined and which will require further work before they can be allocated to categories A - D are temporarily placed in this category, with specific recommendations for further evaluation. By the end of the assessment there should usually be no sites remaining in this category. In this case several areas of unknown potential have been allocated to this category. These require environmental sampling which should be carried out during the pipeline works.

### **2 Definition of Impact**

The impact of the works on each site was estimated. The impact is defined as *none, slight, unlikely, likely, significant, considerable or unknown* as follows:

*None:*

There is no construction impact on this particular site.

*Slight:*

This has generally been used where the impact is marginal and would not by the nature of the site cause irreversible damage to the remainder of the feature, *e.g.* part of a trackway or field bank.

*Unlikely:*

This category indicates sites that fall within the band of interest but are unlikely to be directly affected. This includes sites such as standing and occupied buildings at the margins of the band of interest.

*Likely:*

Sites towards the edges of the study area, which may not be directly affected, but are likely to be damaged in some way by the construction activity.

*Significant:*

The partial removal of a site affecting its overall integrity. Sites falling into this category may be linear features such as roads or tramways where the removal of part of the feature could make overall interpretation problematic.

*Considerable:*

The total removal of a feature or its partial removal which would effectively destroy the remainder of the site.

*Unknown:*

This is used when the location of the site is unknown, but thought to be in the vicinity of the proposed works.

### **3 Definition of field evaluation techniques**

Field evaluation is necessary to fully understand and assess most class E sites and to allow the evaluation of areas of land where there are no visible features but for which there is potential for sites to exist. Various techniques are available depending on the nature of the site to be assessed. The investigation of deposits, such as peat, may require augering to test depth, extent and potential for preserving environmental data. Identifying the date and extent of an artefact scatter on ploughed farmland may involve fieldwalking to recover artefacts in a methodical manner. To achieve a similar result in upland and pasture areas the excavation of a grid of small test pits might be required. Such an approach could also be used to test the depth and nature of deposits.

Three principal techniques are more generally applicable to many situations, and these are topographic survey, geophysical survey and trial trenching.

Topographic survey involves the recording of earthworks and upstanding remains visible on the ground surface. It can be carried out with global positioning technology, an electronic theodolite, hand drawing with tapes, or a combination of any of these. It allows the creation of a plan, rendering the visible remains more understandable and aiding their interpretation and evaluation. It is of particular use over large areas where the relationships of features such as field boundaries and settlements can be identified.

Geophysical survey most often involves the use of a magnetometer, which allows detection of some underground features, depending on their composition and the nature of the subsoil. Other forms of geophysical survey, including resistivity survey and ground penetrating radar might also be of use.

Trial trenching allows a representative sample of the development area to be investigated at depth. Trenches of appropriate size can also be excavated to evaluate category E sites. Trenching is typically carried out with trenches of between 20 to 30m length and 2m width. The topsoil is removed by machine and the resulting surface is cleaned by hand, recording features. Depending on the stratigraphy encountered the machine may be used to remove stratigraphy to deeper levels.

### **4 Definition of Mitigatory Recommendations**

Below are the measures that may be recommended to mitigate the impact of the development on the archaeology.

*None:*

No impact so no requirement for mitigatory measures.

*Avoidance:*

Features, which may be affected directly by the scheme, or during the construction, should be avoided. Occasionally a minor change to the proposed plan is recommended, but more usually it refers to the need for care to be taken during construction to avoid accidental damage to a feature. This is often best achieved by clearly marking features prior to the start of work.

*Basic recording:*

Requiring a photographic record and full description prior to commencement of works.

*Detailed recording:*

This requires a full photographic record and measured survey prior to commencement of works.

Archaeological excavation may also be required depending on the particular feature and the extent and effect of the impact.

*Watching brief:*

This 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.

*Reinstatement:*

The feature should be re-instated with archaeological advice and supervision. This particularly applies to nineteenth century field walls parts of which may have to be dismantled. It is important for the landscape character of the area that these are rebuilt in the original style. In general, the presumption should be in favour of returning walls to their pre-impact state, i.e. tumbled walls are to be left tumbled and not rebuilt.

*Strip, Map and Sample:*

The technique of Strip, Map and Sample (SMS) requires the machine stripping of topsoil and ploughsoil within a defined area to layers capable of preserving archaeological features. The work is undertaken under archaeological supervision. Stripping and removal of the overburden is undertaken in such a manner as to ensure damage does not take place to surfaces that have already been stripped, nor to archaeological surfaces that have not yet been revealed.

A small team of archaeologists will be responsible for subsequently further cleaning defined areas where necessary and evaluating any potential archaeological features. The evaluation will identify significant archaeological features requiring excavation and recording. Isolated features can be recorded at this stage but complex sites which cannot be avoided will need to be excavated in detail and this will form a new phase of works.

It is not always easy to identify the nature of features without excavation, therefore although strip, map and sample includes the initial assessment of features, it does not include detailed excavation should the features prove to be archaeologically significant. If a site of archaeological significance is found during the strip, map and sample process then a new design and cost estimate will be required for that site.

The advantage the strip, map and sample technique is that all archaeological features will be found, so it removes all risk. It is best undertaken where the reinstatement of the topsoil is not immediately required, so that the easement does not have to be reinstated and stripped again for construction. This method typically results in the identification of a large number of features such as drains, ditches, former field boundaries, the holes caused by the removal of trees, and casual pits etc.

*Detailed excavation:*

Where the requirement for detailed recording or the results of the strip, map and sample evaluation suggest that full excavation of a feature or features is necessary this would be carried out to a project design based on best practice. This normally involves the full excavation of significant small features and the partial excavation of ditches and other large features. Detailed plans and sections will be drawn, a full photographic record will be made and detailed notes will be written describing each context. The main aims are to establish the date and function of features and to establish the stratigraphic relationships between features. On a complex site this can be a long and labour intensive process.

## **APPENDIX IV: Information on listed building consent taken from the Cadw booklet ‘Listed Buildings in Wales’**

<http://www.cadw.wales.gov.uk/upload/resourcepool/Listed%20Building%20Consent%20Booklet%2020057998.pdf>

### **Listed Building Consent**

#### ***What is listing?***

The National Assembly for Wales is required by law to compile lists of buildings of special architectural or historic interest (see the Cadw leaflet, *The Listing of Buildings in Wales: What is Listing?*). The lists are used to help planning authorities make their decisions with the interests of the built heritage clearly identified.

While listing of a building is not a bar to future change, it places on local planning authorities the requirement to ‘have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses’.

#### ***What is listed building consent?***

As well as providing a ready reference of buildings of importance, listing provides an added level of protection. This is in a form of a special planning procedure, known as listed building consent. Before a listed building can be altered, extended or demolished, it may be necessary to obtain listed building consent. It is a criminal offence to alter, extend or demolish a listed building in any manner that would affect its character as a building of special architectural or historic interest without listed building consent.

The need for consent applies to works to all parts of the building, interior or exterior, regardless of grade and whether or not the feature is mentioned in the official list description. It may also apply to associated buildings that are within the curtilage of the principal building. Curtilage buildings are ones which form part of the land attached to the listed building and have done so since before 1 July 1948; this will also include boundary walls. Consent is not required for routine repairs or maintenance or work of like-for-like repair.

#### ***Who gives listed building consent?***

Applications, for which there is no fee, are made to the appropriate local planning authority in whose area the building is situated, and which will provide an application form. The authority will examine the case against national guidelines issued by the Welsh Assembly Government, and in the light of its policies for the protection of the historic environment. In all cases, there will be a presumption in favour of preservation. The application must be publicized, and, in the case of demolition (which may include partial demolition), national amenity bodies notified. In the majority of cases, once the local planning authority has decided to grant consent, the authority must provide the Welsh Assembly Government with the opportunity to ‘call in’ the application for further consideration. If consent is refused an appeal may be made to the National Assembly.

#### ***How do I apply?***

Applications should be made on a form provided by the local authority. The need for the works must be justified. A properly documented application should show why works that would affect the character of a listed building are desirable or necessary. It must provide the local planning authority with full information, to enable it to assess the likely impact of the proposals on the building and its setting.

There is no provision for consent to be granted in outline. Where there is uncertainty about the need for consent, it would be advisable to contact the local planning authority before preparing detailed plans to avoid incurring unnecessary costs. In addition, it may be appropriate to consult or employ an architect or surveyor with conservation experience. The Royal Institute of British Architects, for example, will be able to supply lists of suitable architects or practices.

#### ***How does this all fit in with a grant of planning permission?***

Work involving extensions or change of use, may also need planning permission and building regulation approval. Listed building consent is additional to, and separate from, planning permission. The granting of planning permission will not mean that listed building consent will necessarily be granted. If other permissions are required, applications should be made concurrently.

#### ***What is Cadw’s role in the listed building consent process?***



Cadw is a division within the Welsh Assembly Government that carries out the Assembly's responsibilities in respect of the historic environment. It has no identity separate from the Assembly and will not take any action that may prejudice any future involvement of the Assembly in the planning process.

When a local authority is disposed to grant listed building consent, it must first notify the Welsh Assembly Government (i.e. Cadw) of the application<sup>1</sup>. If the planning authority decides to refuse consent, it may do so without any reference to Cadw. The notification process presents the opportunity for calling in the application for decision by the Welsh Assembly Government. Cadw has a period of twenty-eight days from receipt of the application in which to decide either to refer the application back to the local authority for determination or give notice that further time is required in which to consider whether the application should be called in. Cadw generally deals with over 90% of all applications within twenty-eight days.

### ***What is 'calling in'?***

A decision to 'call in' means that an application will be decided by the Welsh Assembly Government, and not by the local planning authority. It is the policy of the Welsh Assembly Government to be very selective about calling cases in. Applications considered for 'call-in' are those which raise issues of exceptional significance or controversy. In some cases, informal discussions between Cadw's conservation architects, the local planning authority and the applicant can resolve minor difficulties without resort to 'call-in'.

### ***What happens after 'call-in'?***

There are alternatives: either the applicant, or the local planning authority, may ask that the proposal be examined at a local public inquiry, conducted by an inspector appointed for that purpose; or, an application can be decided on the basis of written representations. An appointed inspector may also be asked to visit the site and to submit a brief report to assist in the decision-making.

At an inquiry the inspector will consider all the relevant facts and hear objections to the application before reporting to the Welsh Assembly Government. The inspector's report will recommend whether consent should be granted with or without conditions or refused.

### ***Is there any financial assistance?***

Grants for the repair of buildings of outstanding historic or architectural interest and for works to buildings in conservation areas may be available from Cadw. Relatively few listed buildings reach the criteria for 'outstanding'. These criteria are set out in Cadw's leaflet: Historic Buildings Grants and Conservation Areas Grants.

### ***What if I require further information?***

The local planning authority should be contacted for advice, in the first instance. Cadw's specialist staff will offer informal advice to the local authority if it seeks specific guidance to assist in its decision making process. Cadw staff cannot advise applicants directly.

### **Note**

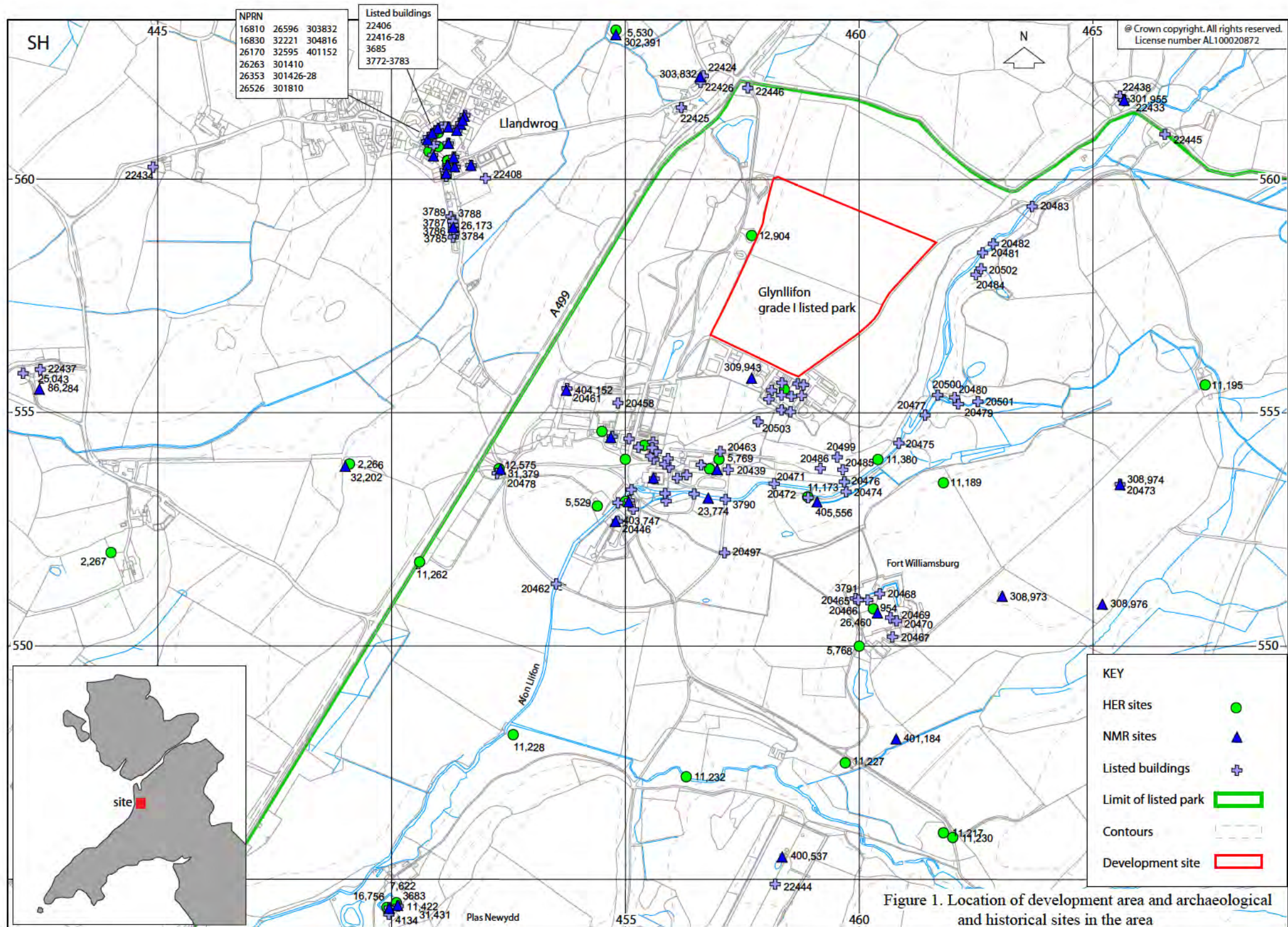
The procedures described in this leaflet derive from provisions contained in the Planning (Listed Buildings and Conservation Areas) Act 1990. They are intended only to give a broad outline and should not be considered as a definite interpretation of the law. Circulars 61/96 and 1/98 set out the relevant policies and procedures in more detail and should be consulted.

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<sup>1</sup> Delegation

The Assembly Government has delegated responsibility to some authorities for determining listed building consent applications for works to grade II listed buildings (other than demolition) without reference to Cadw. Your local authority will be able to confirm whether it has delegated authority.





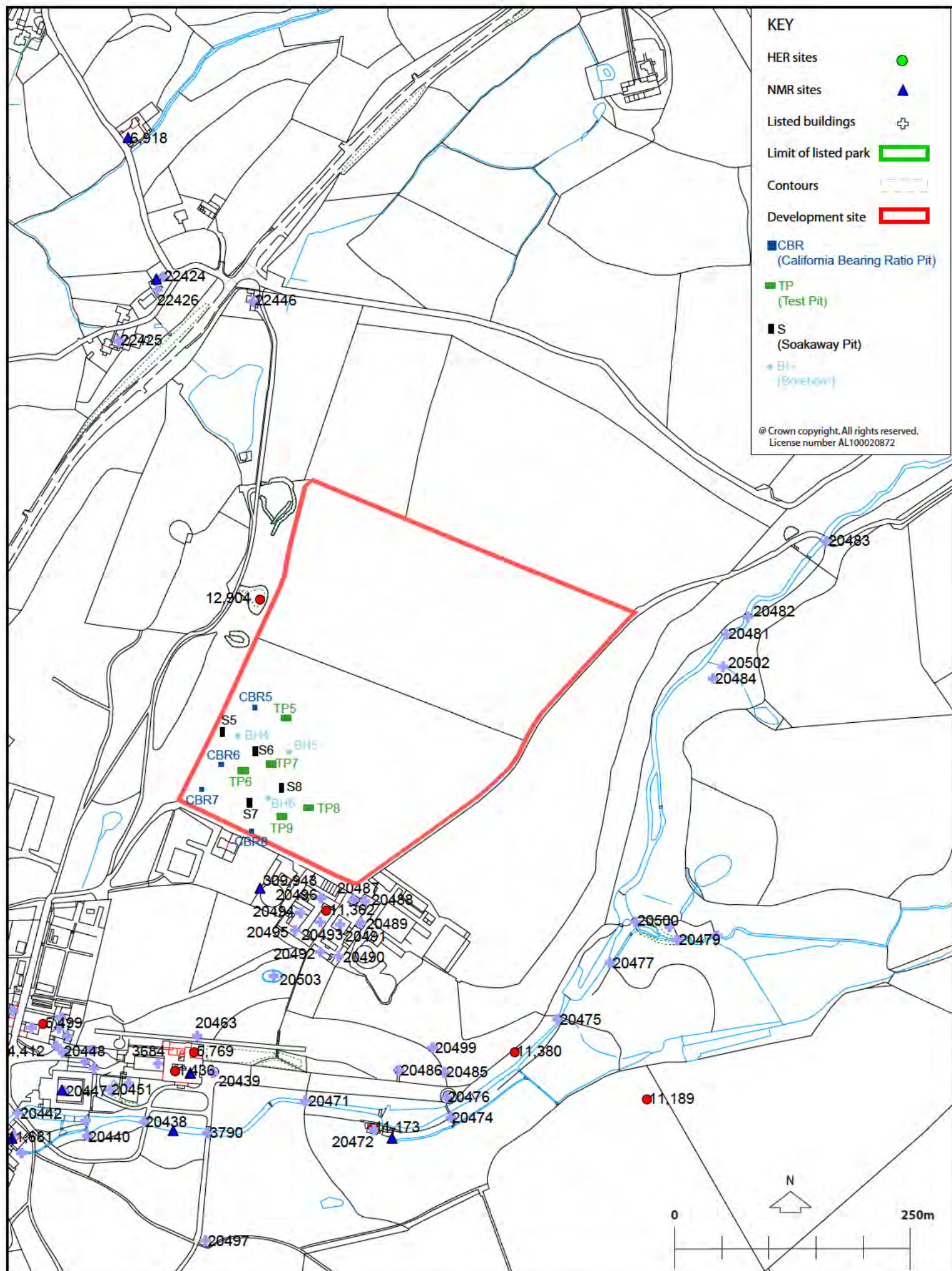


Figure 2: development area/archaeological and historical sites in the immediate area/location of Ground Investigation Areas monitored by Gwynedd Archaeological Trust.  
Development Area highlighted in RED.





Figure 3. Map of Glynllifon Demesne (1751) (XD2A/1580). Development area (fields 26 and 34) shown in inset.





Figure 4. Glynllifon Demesne and Penbryn Bwlan (1790)  
 (Ms Maps vol. 95 p32).  
 Development area shown approximately in red  
 and detail of development area as inset.

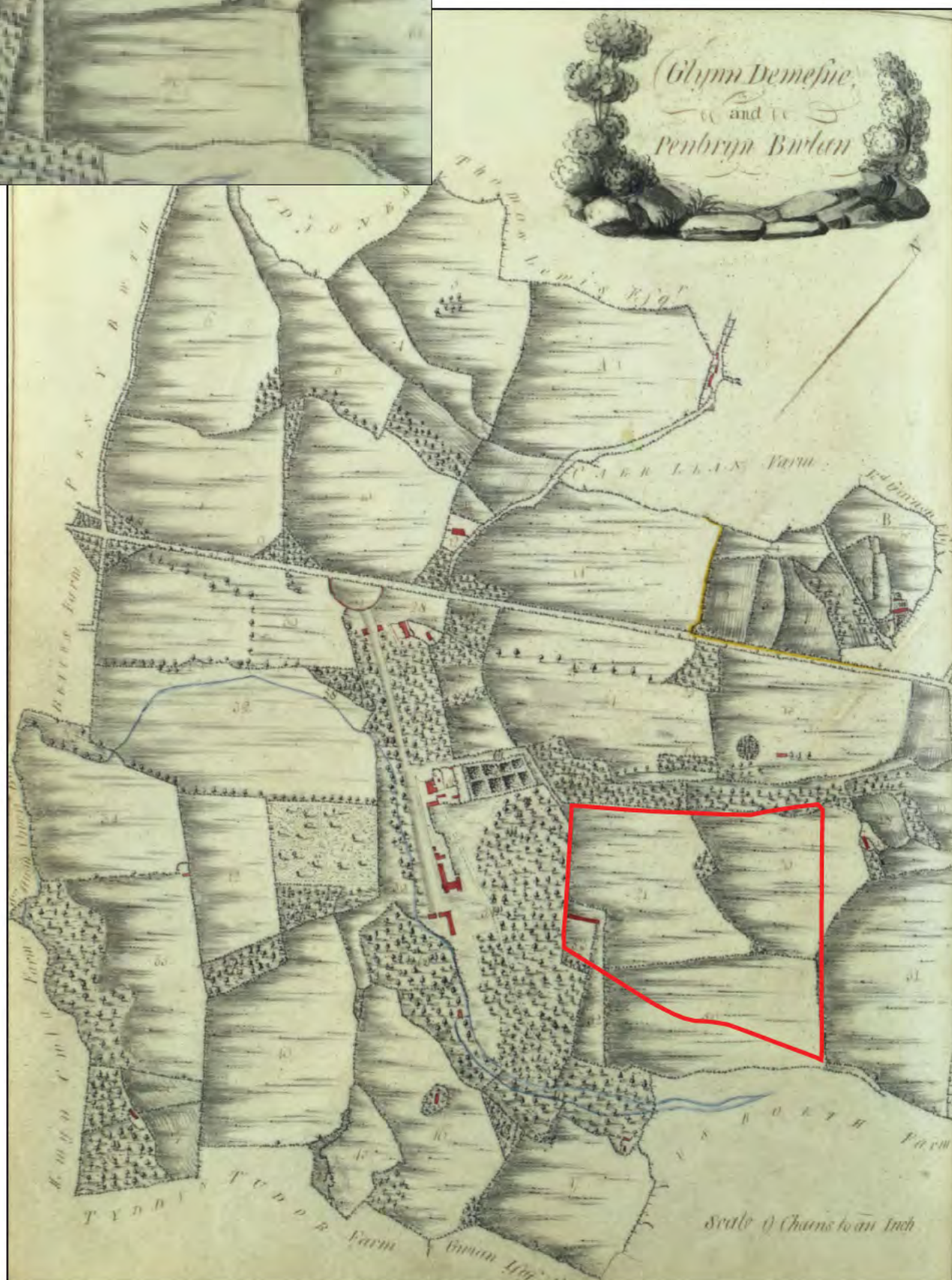






Figure 5. Map of park and demesne lands at  
Glynllifon (1824)  
(Gwynedd Record Office:XD2A/857).  
Development area shown approximately  
in red.



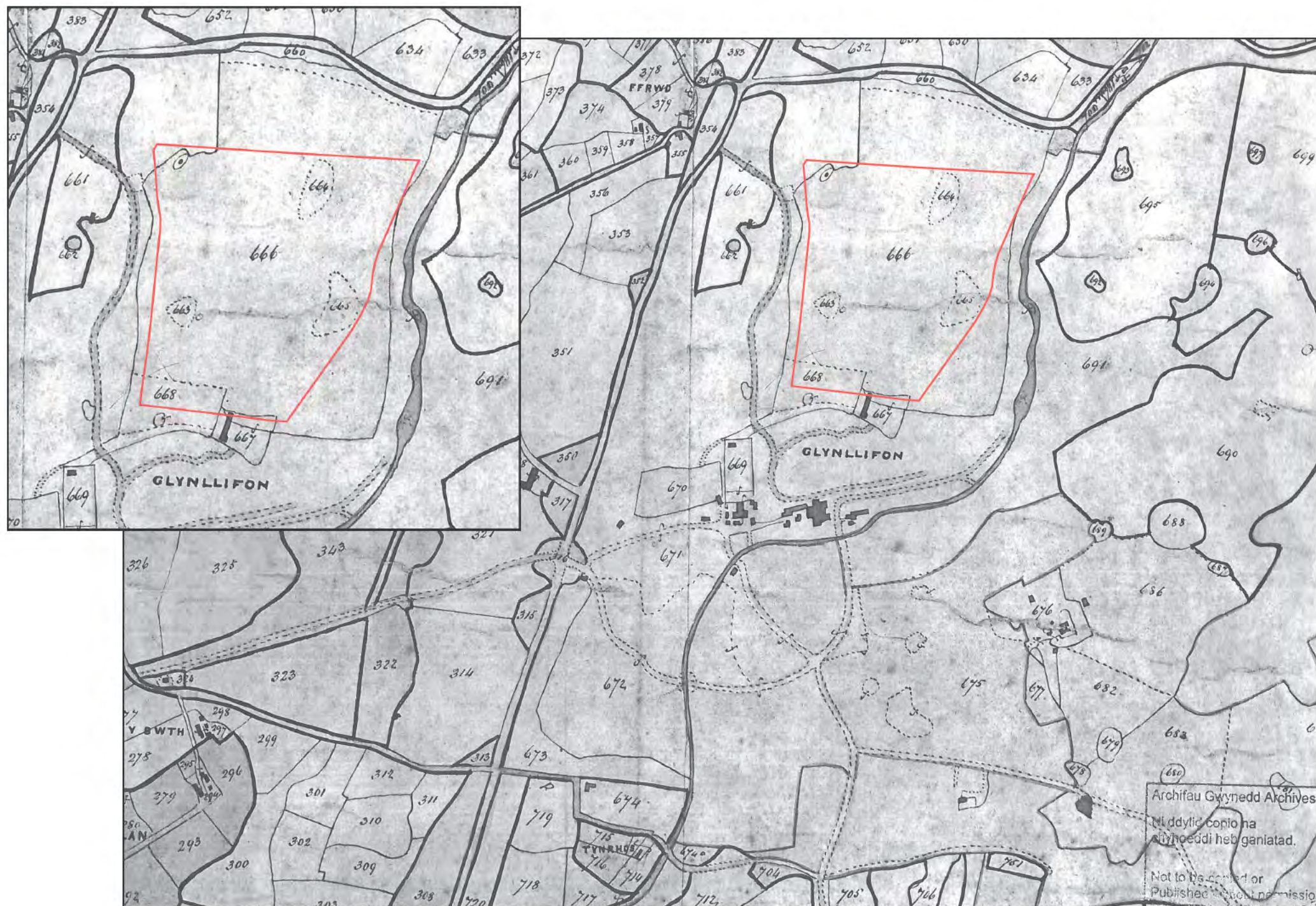


Figure 6. Part of Llandwrog tithe map (1849). Development area shown approximately in red and detail of development area as inset.



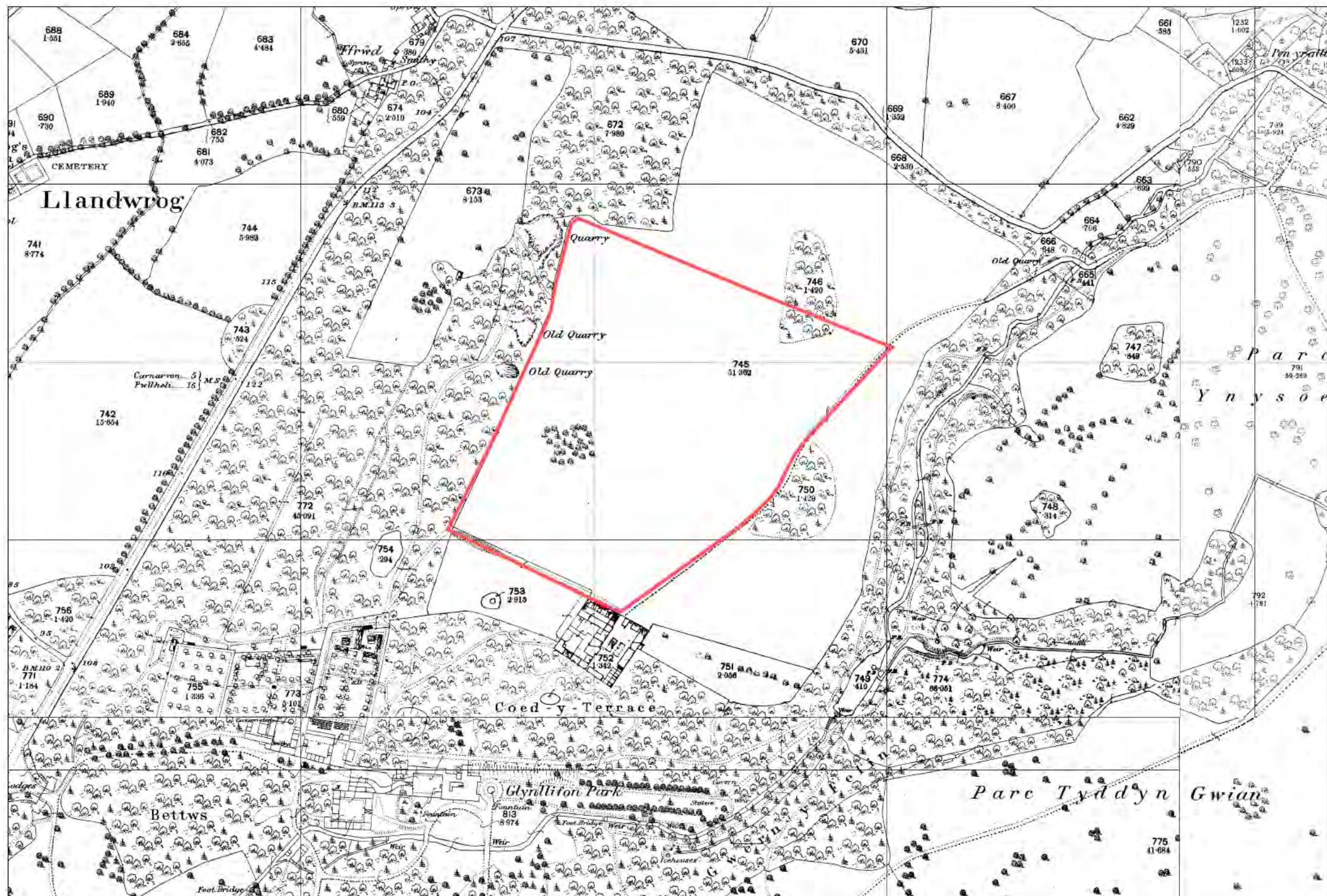


Figure 7. First edition 25 inch County Series Ordnance Survey map, 1:5000, sheets Caernarvonshire XX.3 and XX.7 (1889). Development area in red.



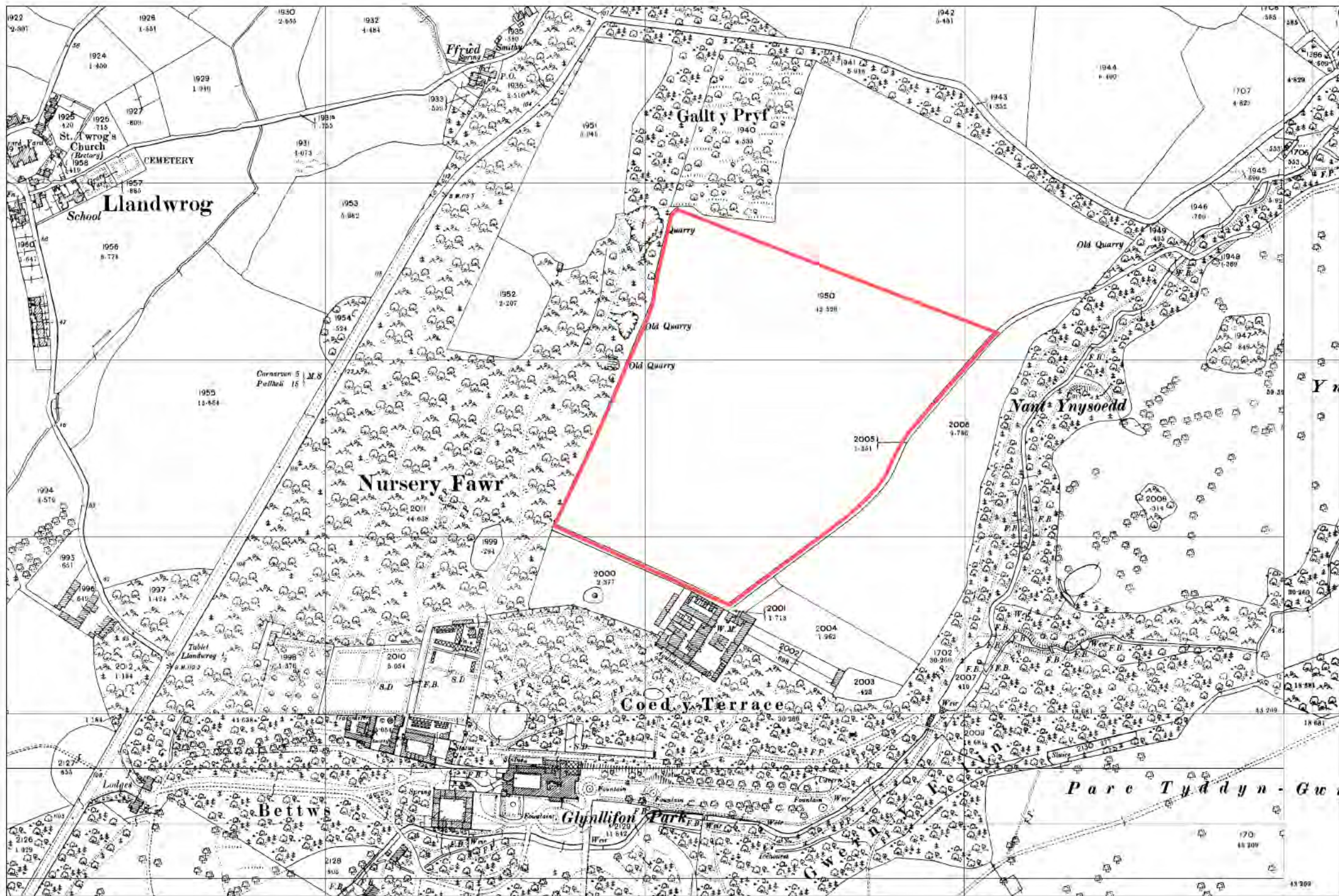


Figure 8. Second edition 25 inch County Series Ordnance Survey map 1:5000, sheets Caernarvonshire XX.3 and XX.7 (1900). Development area in red.



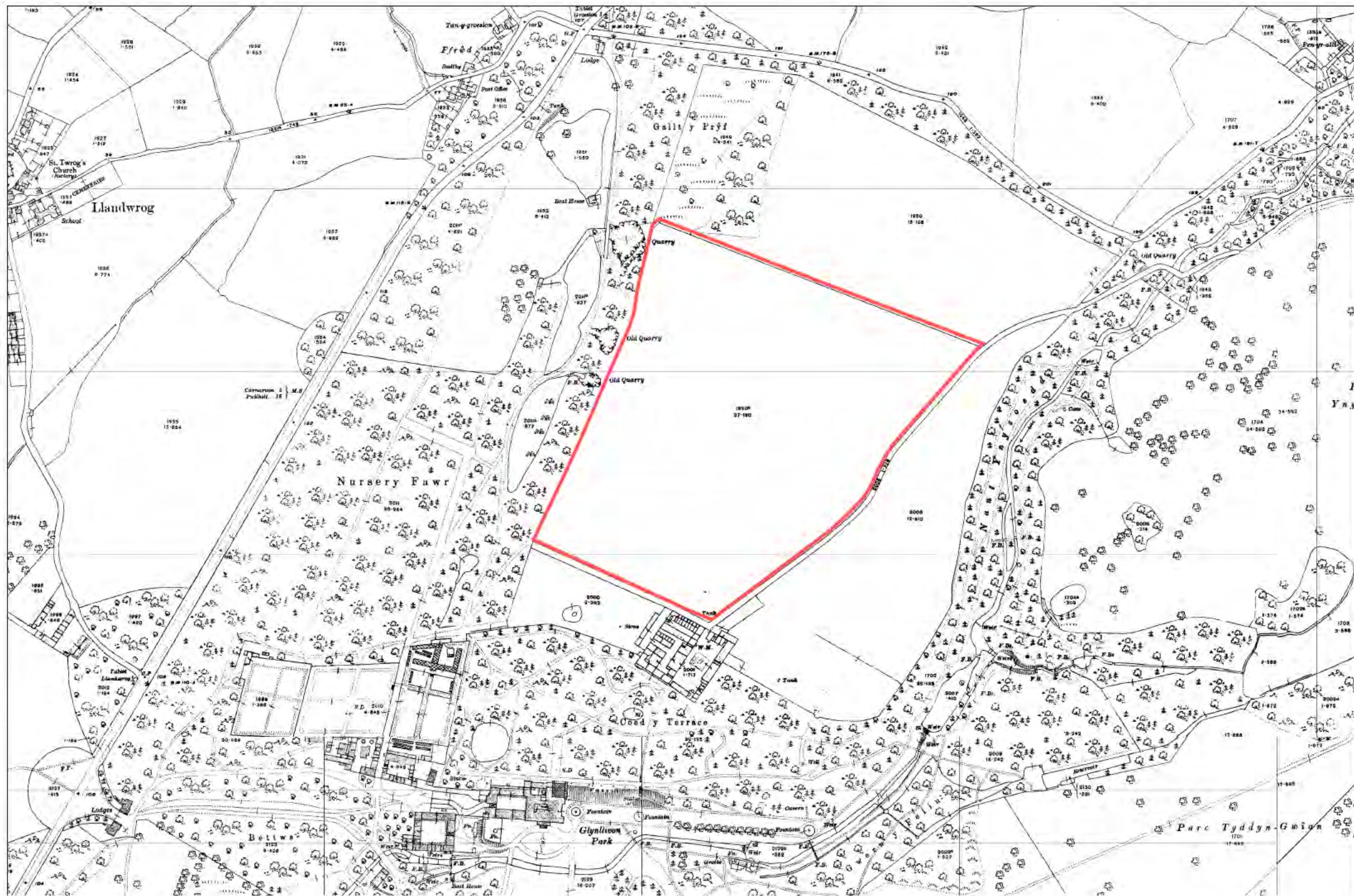


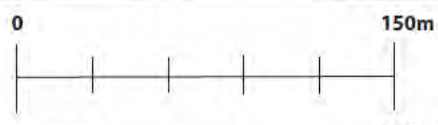
Figure 9. Third edition 25 inch County Series Ordnance Survey map, 1:5000, sheets Caernarvonshire XX.3 and XX.7 (1918). Development area in red.





KEY		1:3000
HER sites		
NMR sites		
Listed buildings		
Features identified in assessment		05
Linear features		08
Development site		

Figure 10: Location of Features







**Plate 1: Conifer plantation feature 1, from the south**



**Plate 2: Quarry feature 2, from the west**





**Plate 3: Boat house feature 4, from the east**



**Plate 4: Bridge feature 5, from the east**





**Plate 5: Quarry feature 6, from the west**



**Plate 6: Revetted trackway feature 7, from the southeast**





**Plate 7: Quarry feature 8, from the west**





Test Pit 5  
Plate 8



Test Pit 6  
Plate 9



Test Pit 7  
Plate 10



Test Pit 8  
Plate 11



Test Pit 9  
Plate 12





Soak Away 5  
Plate 13



Soak Away 6  
Plate 14



Soak Away 7  
Plate 15



Soak Away 8  
Plate 16





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