1648

Llwyn Bleddyn Road, Rachub

Preliminary report and project design for post-excavation analysis, reporting, publication, and archiving

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

Llwyn Bleddyn Road, Rachub

Preliminary report and project design for post-excavation analysis, reporting, publication, and archiving

Project No. G2630

Report No. 1648

Event PRN 45936

Prepared for: Adra (Tai) Cyfyngedig

July 2022

Written by: Jane Kenney

Illustrations by: Jane Kenney

Cover photograph: Aerial view of the site (photo by Neil McGuinness)

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

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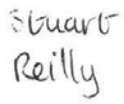
Reviewed by	Document Reviewer	Stuart Reilly		25/07/2022
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LLWYN BLEDDYN ROAD, RACHUB (G2630)

Preliminary report and project design for post-excavation analysis, reporting, publication, and archiving

Prepared for *Adra (Tai) Cyfyngedig*, July 2022

Report number: 1648
Historic Environment Record Event Primary Reference Number: 45936

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SUMMARY

Gwynedd Archaeological Trust carried out an archaeological mitigation in advance of the construction of a residential development on land next to Llwyn Bleddyn Road, Rachub, Gwynedd (centred on NGR SH 6198 6802). The work was commissioned by Adra (Tai) Cyfyngedig and took place between 22nd March 2021 and 1st February 2022.

The excavation revealed the remains of two timber roundhouses, two stone roundhouses and several Roman period structures. The stone roundhouses were associated with a stone-walled enclosure, possibly an animal pen and field walls, some of which may have been contemporary with the settlement. Fragments of two other field walls were found elsewhere on the site.

An elongated feature, possibly an earth oven, may be of Bronze Age date and other isolated pits of unknown date were scattered across the site. Much of the activity on the site was related to a post-medieval farm. The foundations of the farmhouse and an outbuilding survived. The farmhouse had slate-capped drains in the floor and a fireplace and ovens at one end. Some of the Roman period activity survived directly below the floor of the farmhouse.

A small furnace was found in the middle of one of the timber roundhouses and another furnace was close to the Roman period structures. Numerous spindle whorls were found in the roundhouses and Roman period activity. The Roman pottery assemblage includes black-burnished ware, a small number of samian ware sherds and sherds of amphorae, including a large sherd of a globular amphora. A possible stylus and a copper-alloy plaque were found within the Roman period activity and a long, thin iron object, nearly 1m long was recovered from the drain of one of the roundhouses.

This document provides a brief preliminary statement on the results of the archaeological excavations and a project design for the post-excavation phase of the works. The post-excavation phase includes the production of:-

- *a detailed archive report*
- *a publication report*
- *archiving of the site records and finds.*

It is estimated that it could take a year and a half to complete all the post-excavation work.

CRYNODEB

Cyflawnwyd Ymddiriedolaeth Archeolegol Gwynedd lleddfiad archeolegol ymlaen i adeiladwaith o ddatblygiad preswyl ar dir wrth ymyl lon Llwyn Bleddyn, Rachub, Gwynedd (ganoli ar NGR SH 6198 6802). Cafodd y gwaith eu dirprwyo gan Adra (Tai) Cyfyngedig a'i gynnal rhwng Mawrth 22ain 2021 a Chwefror 1af 2022.

Wnaeth y cloddiad datguddio gweddillion o ddau dŷ crwn pren, dau dŷ crwn cerrig ac amryw o adeileddau o'r cyfnod Rhufeinig. Roedd y tai cylch yn gysylltiedig gydag amgáu wal cerrig, bosib yn lloc anifeiliaid a waliau cae, rhai oedd yn efallai wedi bod mewn cyfoes gyda'r anheddle. Darganfod darnau o ddwy wal eraill rywle arall ar safle.

Roedd nodwedd hirgul, bosib popty daear, efallai yn ddyddiol i'r Oes Efydd a phydewau arwahanedig o ddyddiad anadbyddus ar wasgar ar draws y safle. Mae'r rhan fwyaf o'r gweithgareddau yn gysylltiedig i'r fferm ôl-canoloesol. Roedd gan y ffermdy draeanu â chapan llechi tu mewn i'r llawr gyda lle tân a phopty ar un pen. Roedd rhan o'r gweithgaredd cyfnod Rhufeinig dal yn bodoli syth o dan y llawr o'r ffermdy.

Darganfuwyd ffwrnais fach yn ganol yn o'r tŷ crwn pren a ffwrnais arall roedd yn agos i'r adeiledd oes Rufeinig. Cafodd amryw o drolleni gwerthyd ei ddarganfod tu mewn i'r tai cylch a gweithgaredd oes Rufeinig. Roedd y casgliad crochenwaith Rhufeinig yn gynnwys nwyddau du-loyw, nifer fach o deilchion nwyddau samiaidd a darnau o amffora, gan gynnwyd darn mawr o amffora globylog. O fewn yn y gweithgaredd Rhufeinig, roedd yna bwyntil bosib, a phlac copor-aloi ac roedd yna wrthrych hir a denau haearn, bron 1m hir ei ddarganfod o ddrain gan un o'r tai cylch.

Darparu'r ddogfen hon datganiad rhagarweiniol byr o'r canlyniadau o'r cloddiad archeolegol a chynllun prosiect i'r cyfnod ôl-cloddiad o'r Gwaith. Mae'r cyfnod ôl-cloddiad yn gynnwys y cynhyrchiad o:-

- adroddiad archif manwl
- adroddiad cyhoeddiad

- archifo'r y cofnodion safle a gwrthrychau

Mae'n amcangyfrifed fod gallu cymryd blwyddyn a hanner i gwblhau cyd o'r gwaith ôl-cloddiad.

1. INTRODUCTION

Gwynedd Archaeological Trust has carried out a programme of archaeological mitigation in advance of the construction of a residential development on land next to Llwyn Bleddyn Road, Rachub, Gwynedd. The work was commissioned by Adra (Tai) Cyfyngedig and took place between 22nd March 2021 and 1st February 2022. The archaeological mitigation formed the final part of a staged process of archaeological works including a desk-based assessment and geophysical survey of the development footprint conducted in September 2019 (Evans and McGuinness 2019), and a topographic survey and trial trenching conducted in November 2019 (Evans 2019).

This document provides a brief preliminary statement on the results of the archaeological excavations and a project design for the post-excavation phase of the works. The post-excavation phase includes the production of:-

- a detailed archive report
- a publication report
- archiving of the site records and finds.

2. BACKGROUND

2.1. Topography and Geology

The development site is situated within a triangular field adjacent to Llwyn Bleddyn Road, centred on NGR SH 6198 6802. It covers a trapezoidal area of approximately 1.2ha, consisting of what was the southern half of a field of predominantly semi-improved pasture. A strip of land on the eastern side of the development area forms a narrow boggy valley within which runs a southeast-northwest orientated stream. The land slopes gently from south to north and lies between approximately 157m and 164m OD.

The area lies on the western edge of the settlement at Rachub, within the parish of Llanllechid. The greater part of the parish is mountainous, but includes part of the lower Afon Ogwen valley, which has significant amounts of cultivated land. The site is located towards the upper limits of the cultivated land, not far from the edge of the mountains. The hill of Moel Faban, on the edge of the uplands, directly overlooks Rachub.

The geology of the area consists of Llanberis Slates Formation and sandstone. This is sedimentary bedrock formed approximately 508 to 526 million years ago in the Cambrian Period (British Geology Viewer https://mapapps.bgs.ac.uk/geologyofbritain/home.html). Soils consist of Brown earths of the Denbigh Series made up of silty loam (Ball, 50-51). These soils are freely drained and slightly acid loams (Soilscapes www.landis.org.uk/soilscapes). The slate was quarried in the 19th and 20th centuries and is still quarried at the Penrhyn Quarry in Bethesda. Small slate quarries can be seen around the foot of Moel Faban, with the larger quarry of Bryn Hafod y Wern near Llanllechid. This is now a former slate quarrying landscape.

2.2. Historical and Archaeological Background

(Based on Evans and McGuinness 2019 and McGuinness 2019)

The landscape around Rachub and Llanllechid preserves extensive multi-period archaeological remains (Figure 1). These include prehistoric, Roman, and medieval settlements still visibly set within a landscape of contemporary field boundaries and enclosures.

The earliest known sites date from the Bronze Age, though a broken stone hammer/macehead found at Wern (GAT HER PRN[1] 1635) is probably of Neolithic date. Another holed stone was found with a stone ball north of

[1] Gwynedd Archaeological Trust Historic Environment Record Primary Record Number

Llanllechid (GAT HER PRN 5794), which may also be Neolithic. There are several Bronze Age funerary cairns on Moel Faban, including a cairn cemetery (GAT HER PRNs 306-308) of three cairns on the summit and two other funerary cairns on western slope (GAT HER PRNs 310-311). Close to these is an area of clearance cairns (GAT HER PRN 309), which could also be Bronze Age. On the side of Bwlch ym Mhwll-le, the steep glacial channel north of Moel Faban, is a large burial cairn (GAT HER PRN 316, CN343). There are also burnt mounds, probably of Bronze Age date on Moel Faban (GAT PRNs 312 and 3661), and another burnt mound (GAT HER PRN 7385) was found near Tan y Foel (just off Figure 1).

The many roundhouse settlements or hut groups in the area are assumed to date from the Iron Age, with some used into the Roman period, but few have been excavated and none have been excavated to modern standards. Dating evidence is therefore rare, but where a settlement includes rectangular buildings as well as circular it is generally assumed that this is due to Roman influence. About 310m to the north-west of the development lies the Coed Uchaf enclosed hut group (PRN 294, SH61606840), which is a Scheduled Monument (Scheduled Monument Number Cn176). This consists of an oval enclosure formed of a bank of stones and earth 2.5m thick, with an entrance 3m wide. Within the enclosure are the remains of three buildings, two circular and one rectangular and the settlement is associated with walled fields (RCAHMW 1956, 148). Two hut groups also with associated fields are located near Cobri (PRN 1190, SH 61676875, Cn287). One of these hut groups includes a rectangular building as well as and two circular ones. To the south of this are the remains of another block of cultivated fields with the remains of three round huts. Three hut circles lie on the eastern side of the Ogwen Valley (GAT HER PRNs 5743, 5744, 5745), and hut circles with remains of contemporary fields are found at Ffos Coetmor, south-west of Moel Faban (GAT HER PRN 288, Cn263). An enclosed hut circle settlement, (GAT HER PRN 293, Cn211) lies to the east of Rachub, at the foot of Moel Faban, overlooking the present site. There are other enclosed hut groups in the wider area, including the Rhiw Goch enclosed hut group (GAT HER PRN 295, Cn056), about 1.3km to the north of the site (not on Figure 1).

One of the most significant features of this area is the survival of prehistoric field systems in association with roundhouse settlements. There is an extensive system of terraced fields and associated huts and hut groups east of Llanllechid (Scheduled Monument Cn121, including GAT HER PRNs 261-3, 264-74, 277, 293, 59876). A field system including a roundhouse settlement (GAT HER PRN 287, Cn210) extends over part of Moel Faban. A roundhouse settlement with terraced fields to the west of it (GAT HER PRN 296) was recorded on the northern edge of Rachub. The terraces now appear to be levelled for a play area, but traces of the settlement may survive in a paddock between a house and some garages. Roundhouse settlements are widely found along the margins of the uplands, as well as at higher altitudes throughout this area, but these are the best-preserved areas of early field systems. During a field walk over survey in 1995 an area of previously unknown preserved late prehistoric or Romano British enclosed field system (GAT HER PRN 5891) was identified on the western side of the stream that runs along the eastern edge of the development area (Davidson 1995; Roberts 1996). This suggests field systems in very close proximity to the site, and the identification of a series of lines of boulders within the site in the evaluation phase suggested a continuation of these fields.

In addition to the settlement sites there are two hillforts in the area. Pen Dinas (GAT HER PRN 223, Cn120) stands overlooking the river Ogwen on its western bank, and there is another small hillfort, Pen y Gaer (GAT HER PRN 261) about 1km south-east of the development site. Pen y Gaer also has remains of a field system that would have surrounded it (GAT HER PRN 55835).

The area also has numerous medieval sites. There are several sites described as long huts, which are assumed to represent the *hafotai* (upland summer dwellings) of medieval farmers (Gresham 1954, Davies 1979, 25-27). None have been excavated in the area, and where they have been excavated elsewhere there is evidence that some were occupied into the post-medieval period. Just north of the development site are two long huts (GAT HER PRN 298 and 299). Both are stone built, with PRN 298 measuring 16m long and 5m wide and PRN 299 is 14m long and 5.3m wide (RCAHMW 1956, 150). PRN 298 has an associated enclosure. Several of these sites can be found amongst the prehistoric fields scheduled as Cn121, east of Llanllechid, where they are mostly seen as house platforms (GAT HER PRNs 275, 276, and 7530), rather than upstanding remains. These are found within the remains of lynchets and traces of ridge and furrow, and show that the prehistoric fields continued in use into the medieval period. Two more medieval deserted settlements (GAT HER PRNs 280 and 281) extend this activity across the hillside to the north-east. PRN 280 includes PRNs 7532 – 7534.

The scheduled area (Cn210) on the southern and eastern sides of Moel Faban also contains a medieval deserted rural settlement (GAT HER PRN 7556), and another medieval long hut and enclosure (GAT HER PRN 300) is located elsewhere on Moel Faban. Two possible medieval long huts (GAT HER PRNs 304, 15040) are located just to the east of Tan y Foel (PRN 15040 not shown on Figure 1). These survivals indicate that in areas not

subject to significant later agricultural improvement a substantial amount of relict medieval landscape pattern can be shown to have survived.

Two stones (GAT HER PRN 3665) on Moel Faban have markings traditionally assumed to be the result of sharpening arrows. The date of these is not known but they could be medieval.

A larger focus of medieval settlement is indicated by Llanllechid Parish Church (GAT HER PRN 7026), which, though completely rebuilt in the 19th century, is known from documents to have had a medieval foundation (Gwyn and Thompson 2000).

From the late 18th century, the Llanllechid area formed part of the slate quarrying landscape of the Ogwen Valley. The Bryn Hafod y Wern quarry at Llanllechid was in use by 1780 (NPRN[2] 400680) and there are other small quarries around the base of Moel Faban. Rachub itself was built as a planned village, extending a hamlet known as Achub. The 1840 Llanllechid tithe map has annotations showing that Caellwyngryydd was "new built upon", with regular streets laid out (Welsh Tithe Maps, https://places.library.wales).

While the Penrhyn Estate owned much of Llanllechid the Coetmor Estate, which included the development site, was owned by the Earl of Egmont (a very large landowner whose major estates were in Ireland), until it was sold to the Penrhyn Estate in the mid 19th century. The homestead of Cefn Bedw is shown on the tithe map, though this does not show individual fields. The former layout of nearby fields can be traced back to 1768 (Bangor University Archives, Penrhyn MSS 2203) and is shown on the Penrhyn estate map of 1855 (Bangor University Archives, Penrhyn MSS 2218). The layout of Cefn Bedw is shown clearly on the Penrhyn Estate Map of 1855, with two buildings indicated, another along with a sinuous field system, the form of which suggests a possible prehistoric origin to the fields. By the time of the first edition 25-inch Ordnance Survey map of 1889 the field boundaries can be seen to have gained much of their current form. Cefn Bedw and its associated fields had completely disappeared by 1889.

2.3. Previous Archaeological work

An archaeological assessment in advance of the construction of the Llanllechid Rising Main included the development site, as the proposed pipe route ran north-east south-west through the trapezoidal field (Davidson 1995; GAT Report No. 177). No additional information was recovered from the subsequent watching brief (Roberts 1996; GAT Report No. 212). An archaeological assessment in advance of development was carried out on land at Bron Arfon, immediately to the north-west of the development site in 2009 (Evans 2009; GAT Report No. 807). This was followed by an archaeological watching brief during the construction phase of this work (Evans 2015; GAT Report No. 1226); these identified little archaeological activity, perhaps due to the limited opportunities afforded by foundation trenches, and this area had been heavily improved to create paddocks.

As part of the development proposal application for the current development, a Scheduled Monument Setting Impact Assessment has been carried out by GAT (McGuinness 2019; GAT Report No. 1490). A desk-based assessment was carried out along with a geophysical survey (Evans and McGuinness 2019; GAT Report No. 1500). This report concluded that the development plot had been significantly improved agriculturally, although prominent glacial boulders still protruded from the ground. Six specific features, three probably prehistoric to medieval in date, and three post-medieval, probably relating to the farm of Cefn Bedw, were identified, for which topographic survey and evaluation by archaeological trial trenching was recommended. The geophysical survey did not identify any probable archaeological anomalies, not even picking up any definite traces of the Cefn Bedw farm buildings, but five possible archaeological anomalies were identified, for which further evaluation was recommended.

Informed by the assessment report and geophysical survey a programme of evaluation trenching was carried out (Evans 2019; GAT Report No. 1518). Eight 20m by 2m trenches were dug, targeting possible features identified in the previous work and testing control areas. Trenches 01, 03, 05 and 08 resulted in little archaeological information being recovered. What was thought to be a stone and earthen bank field boundary was seen in Trench 02, a hollow-way (sunken trackway) probably associated with Cefn Bedw was found in Trench 04, and part of a post-medieval building, again probably related to Cefn Bedw, was found in Trench 06. Trench 07 encountered a field boundary, stone-capped gully, and associated postholes. The stone-capped gully was suggestive of a roundhouse and radiocarbon dates recovered from this and related features identified activity

[2] National Primary Record Number (RCAHMW)

from the 1st century BC to the early third century AD, suggesting settlement from the late Iron Age into the Roman period. Black-burnished ware sherds were also recovered probably dating from the 2nd or 3rd century AD, providing further evidence of activity within this period.

A topographic survey of possible prehistoric remains in the marsh area next to the stream was carried out in November 2019 (Evans 2019) using an unmanned aerial vehicle (UAV). The survey identified evidence for former boundaries and enclosures, but it proved difficult to conclusively identify and map more complex archaeology.

These earlier phases of work informed the decision to carry out a controlled strip to investigate the development site. An evaluation of the marsh area was carried out during the mitigation excavations to determine the depth and nature of the deposits by augering (Bates 2021). This informed the mitigation of this area.

3. AIMS AND OBJECTIVES

The original object of the programme of work was to mitigate the impact of the development on any archaeological remains. This was achieved by undertaking a phased programme of works comprising:

- a review of existing information in a desk-based assessment,
- a phase of evaluation involving geophysical survey and trial trenching,
- a controlled strip of areas initially defined in the Written Scheme of Investigation, which was later extended to include a large proportion of the development site,
- followed where necessary by detailed area excavation.

The current objective is to ensure the long-term curation of the recovered data, and its dissemination in a form suitable to its academic value in line with nationally defined guidelines.

4. FIELDWORK METHODOLOGY

4.1. Area Investigated

The Written Scheme of Investigation (WSI) initially defined the targeted excavation of two discreet areas within the development site: Area A and Area B (Figure 2). Excavation Area A was a small area located to target the remains of a possible prehistoric field boundary identified in evaluation trench 02. Excavation Area B was a polygonal area located in the central-southern part of the development site to enable a clearer understanding of the remains of the possible farm building and hollow-way identified in evaluation trench 04 and the possible outbuilding identified in evaluation trench 06. The area also extended to the north-east to gain a clearer understanding of the extent and nature of the Late Iron Age/Roman settlement activity identified in evaluation trench 07. Gwynedd Archaeological Planning Service (GAPS) stated prior to the start of the project that either or both targeted excavation areas may need to be extended to gain an appropriate level of understanding of any archaeological remains that they contain, so the limits of these areas were considered from the start to be provisional. Investigation of these areas was to be by controlled stripping, in which topsoil and ploughsoil are stripped by machine under constant archaeological control and the archaeological features revealed are investigated.

The northern limit of Area B was defined by the line of a high voltage electricity cable as shown on the service plans. The initial soil stripping of this area revealed part of a roundhouse. The geophysical survey had shown that the cable was further north than shown on the service plans and its line as defined by a cable avoidance tool (CAT) survey was marked out by Williams Homes. The soil stripping was, therefore, extended to a safe distance from the cable to expose as much of the roundhouse as possible.

The stripping of Area A revealed natural boulders rather than a field boundary, but the number of features exposed in Area B suggested that more might be discovered in the rest of the development area. On advice from GAPS, and with agreement of the client, a much larger area was opened around Area A, and Area B was extended to the north-west. Excavation of the area around the roundhouse showed that archaeological features extended under the southern limit of the stripped area. After discussion with GAPS and the client the southern part of the site was also stripped.

When the WSI was written the extent of the development into the marsh area was uncertain, as were the nature of deposits in this area. During the mitigation phase the limit of the development here was confirmed and marked out and ecological planning consents were agreed. An auger survey (Bates 2021) was carried out to determine the depth and nature of deposits and it was decided that this area could be stripped by machine in the same way as the rest of the site. This stripping was carried out avoiding the route of the high voltage cable.

The initial plan was for the electricity cable to be replaced within made-ground over the marsh area after archaeological investigation. The old cable would then be switched off and its route could be stripped and investigated. Changes to the timetable for the works made this impossible, so the exact route and depth of the cable was determined by CAT scanning and digging test pits. This confirmed that the cable was at a depth over which it would be safe to work, and stripping was undertaken along this route. This allowed this remaining area to be archaeologically investigated while the rest of the site was still open.

This left an area in the north-western corner of the site, which was used for soil heaps from the stripping. As most of the site had been stripped and features could be seen to be rare close to the unstripped area, GAPS decided that it was not worth stripping and investigating this final area. However, there was a narrow access route from the entrance to the site, immediately adjacent to features associated with Cefn Bedw Farm. When all other archaeological work was completed and welfare facilities were removed this area was also stripped and checked for features, though nothing was found.

The work, including controlled stripping and archaeological investigation, took place between 22nd March 2021 and 1st February 2022.

4.2. Controlled strip and excavation

All the areas investigated were exposed by a controlled strip, where a tracked excavator was used to strip topsoil and ploughsoil under constant archaeological monitoring to reach either significant archaeological features or layers or the natural glacial deposits, whichever was encountered first. A 360-degree tracked excavator with a toothless bucket was used. For less sensitive areas a 13-tonne machine was used, but where the archaeological deposits were complex or just below the ground surface an 8-tonne machine was used. Topsoil and subsoil were stored in separate mounds within the development area.

Any archaeological features/deposits/structures encountered were manually cleaned and examined to determine extent, function, date, and relationship to adjacent activity. The general excavation strategy was to excavate 50% of each sub-circular feature, 25% of each linear feature (including terminal ends and intersection points with other features). However, significant features were fully excavated and where layers and features were stratigraphically related in a complex way these areas were excavated to obtain maximum stratigraphic information, with layers generally fully excavated by hand.

Archaeological features and deposits were recorded by photographs and contexts records using GAT pro-forma documents.

The limits of the investigated area were surveyed using a Trimble R8 GNSS/R6/5800 Global Positioning System (GPS) unit. The GPS unit was also used to survey in large, regular features, such as ditches, survey the limits of general deposits, such as stone spreads and to record smaller features of a low significance, such as plough scars and animal burrows. Significant archaeological features were drawn by hand and the plans were either located on the site grid or on a baseline surveyed in with the GPS unit. The site grid was laid out over areas with complex archaeology on OS grid coordinates using the GPS unit. Hand-drawn plans were generally at 1:20 and sections, which were drawn of all significant features as appropriate, were generally at 1:10. These scales were occasionally altered as necessary, such as where more detail was required in a plan. Hand-drawings were done on Permatrace (waterproof drawing file) pre-printed with a grid.

In the marsh area the archaeology largely comprised stone features over an extensive area. Some hand-planning was used in this area but the varying heights of the stone features and the difficulty of inserting grid points across the whole area made hand-drawing difficult and slow. A much more efficient and accurate method was to use photogrammetry to plan this area. After discussion with GAPS this approach was agreed. Numerous overlapping photographs were taken using a camera pole. Targets were laid out and surveyed in with the GPS unit and were included in the photographs. The photographs were processed using the Agisoft Metashape

photogrammetry program to create 3D models, which were georectified using the surveyed targets. From this data orthomosaics were produced, which are perfectly horizontal images exactly to scale and georectified. The orthomosaics were printed out and taken to site to be annotated with context numbers and the limits of contexts and other information. Several phases of photogrammetry were undertaken on the marsh area as parts of the area were fully exposed and these will need to be combined during the post-excavation process. Remnants of field boundaries found in the western part of the site and the post-medieval farmhouse were also recorded by this method.

Photographic images were taken using a digital SLR camera (Nikon D3100 or D3000) set to maximum resolution in RAW format. A photographic record was maintained on site and a photographic ID board was used to record site code, image orientation and any relevant context numbers.

4.3. Artefacts and ecofacts

All diagnostic artefacts were retained for further examination and identification. Pottery sherds, glass and metal objects of 19th and 20th century date were examined on-site and the context from which they were retrieved noted. Where they were from contexts related to the post-medieval farmstead, or other contexts where their presence provided significant information, they were retained, but where their information value was low, they were not retained. The artefacts were treated according to guidelines issued by the UK Institute of Conservation, in particular the advice provided within *First Aid for Finds* (Watkinson and Neal 2001).

No human remains or finds that might be considered treasure were encountered during the excavations.

Bulk soil samples were taken from sealed deposits deemed suitable for environmental sampling or dating. Any prehistoric features containing visible charcoal was sampled as well as any other significant feature or layer likely to provide useful information. Deposits that might contain metal-working debris, flint debitage or other small artefacts were also sampled. The bulk samples taken were of 40 litres or 100% of the deposit it the feature was smaller. The sampling strategy was undertaken in accordance with the principles set out in *Environmental Archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation* (English Heritage 2011).

A buried soil was encountered under one of the roundhouses and soil monolith samples were taken from this for soil micromorphology and pollen analysis. The samples were taken using small metal boxes hammered into the section and their exact locations were recorded on the section drawing. Samples for Optically Stimulated Luminescence (OSL) dating were taken from under several stone features in the marsh area for dating purposes by Alan Cresswell of SUERC (Cresswell, Sanderson and Kenney 2022).

5. QUANTIFICATION OF RECORDS

5.1. Site Records

Context sheets	1224
Plan and section drawings	459 drawings on 161 sheets
Digital photographs	3369 files
Digital site plan	1 (compiled from numerous raw data files)

5.2. Environmental samples

Bulk soil samples	233 samples in a total of 450 10 litre sample tubs
Monolith samples	3
Charred wood samples	9
Burnt stone samples	11 samples in a total of 17 tubs
Animal bones	9 bags, more will be recovered during wet sieving

5.3. Artefacts

The numbers refer to the quantity of small find numbers not to individual pieces and sherds. This is an initial statement; identification may change on close inspection.

Find type	Period	Number of bags	Number of items	Total weight (g)
Ceramics	**Total pottery**	**105**	**1202**	**29808**
	Possible Iron Age pottery	3	11	27
	Romano-British pottery	40	81	1647
	Post-medieval pottery	62	1111	28134
Copper alloy objects	**Total cu alloy**	**27**	**27**	**251.5**
	Roman	3	3	49
	Post-medieval	24	24	202.5
Flint	**Prehistoric**	**6**	**6**	**39**
Glass	**Total glass**	**30**	**83**	**1452**
	Roman	7	7	16
	Post-medieval	23	76	1436
Iron objects	**Total iron**	**62**	**103**	**6892**
	IA/Roman	27	37	964
	Post-medieval	35	66	5928
Lead	**Post-medieval**	**2**	**2**	
Metalworking debris/ slag/ burnt clay	**Roman/Iron Age?**	**111**		**>27698**
Other (buttons of various materials)	**Post-medieval**	**2**	**4**	
Other metal	**Post-medieval**	**2**		
Shells	**Post-medieval**	**1**		
Stone objects	**Total stone**	**69**	**118**	**73027**
	Roman/Iron Age? (including 13 spindle whorls)	55	69	56731
	Post-medieval	13	33	15347
	Unknown date	1	16	949
Total		**401**		

6. SUMMARY OF EXCAVATION RESULTS

This summary gives a brief overview of the discoveries. Descriptions and interpretations are of a preliminary nature and will change through the post-excavation process as the data is analysed. There are two main phases of activity across the site: Iron Age/Roman period and post-medieval. At least one feature is likely to be earlier, possibly Bronze Age, but only radiocarbon dating will clarify the full chronology of the site. The Iron Age/Roman period activity is divided into three main areas: the Marsh Area near the stream, two successive timber-walled roundhouses and activity in the upper part of the site near the road.

All archaeological features and deposits were identified on site by context numbers to allow their recording and cross referencing. In the text and figures cut features are identified by the context number of their cut (in square brackets in the text). Layers are identified by their context number (in round brackets in the text). Structures were given group numbers to link all associated context numbers. The group numbers were allocated from the same number list as the context numbers. These numbers are used to identify structures in the text and figures. During the post-excavation process the different activity areas will be allocated PRNs or ones already allocated in earlier phases of this project will be used, so that they can be included in the Historic Environment Record (HER).

6.1. Possible earth-oven [2108] and other possible early features

Figure 2
There were numerous scattered features across the site of various periods or of unknown date. Some of these ([1451], [1476], and [1485]) are small pits with some charcoal in their fills, which could potentially be of prehistoric date, though no finds confirmed this. One of the isolated features was of particular importance. This was a long, narrow cut feature [2108] with rounded ends, measuring 4.3m long. The base of this feature was filled with charred branches and other pieces of fuelwood. The sides of the cut were heat-reddened in places indicating that the fuelwood had been burnt *in situ*. Over the fuelwood was a layer of heat-cracked stones. It is probable that this feature was an earth-oven, where the stones were heated on the fire then wrapped food was placed on the stones, covered with turf, and left to cook. This type of oven is well-documented ethnographically and ovens of this type are found in prehistory across Europe. Those found in north-west Wales are generally small round pits, with the elongated trough being unusual. If this is an earth-oven it is likely to date from the Bronze Age, but only radiocarbon dates will confirm this.

6.2. The Marsh

Figure 2
The north-eastern part of the site was low lying and adjacent to a stream. There was a concern that this area might hold deep peat deposits, which could have preserved organic artefacts and ecofacts. However, an auger survey showed the deposits to be no more than 0.45m deep and no well-developed peats were present (Bates 2021). The overlying deposit was removed with a small 360-degree excavator to expose a collection of stone structures up to 1.1m high. The tops of some of these had projected through the overlying deposits and were identified as possible boundaries on the topographic survey of this area, but their plan had not been clearly visible until the area was stripped. A mound of material had stood at the edge of the Marsh, but the stripping demonstrated that this was a recent dump of demolition rubble, possibly from the demolition of the Cefn Bedw farm buildings. It also contained 20th century pottery, glass, and other rubbish.

It appears that the Marsh was enclosed by a wall (1775) that ran partly along a natural scarp. This wall was fragmentary and disturbed and further work is needed in the post-excavation process to determine which parts contemporary. A sinuous wall constructed of very large boulders ran roughly west from the edge of the stream. This also appeared to continue east of the stream but was not recorded in this area. At the western end of wall (1775) there was a gap, which may be an original entrance, before another short fragment of wall (2162). The latter formed the eastern end of a very fragmentary wall running east-south-east to west-north-west. This probably continued as wall (1751), which was disturbed so that often only one face of the wall survived. Wall (1751) curved round towards the north and at its northern end probably turned to the north-east. It had run to a large earth-fast boulder, but the boulder had been broken up by blasting, confusing the line of the wall. However, north-east of the boulder was a well-preserved section of the wall (1829). This wall had a neat north-western face of large stones, a rubble core and a south-eastern face of large boulders set on edge (orthostats).

This orthostatic face was composed of boulders up to 1.0m high and at the north-eastern end an orthostat set perpendicularly to the face, formed an end to the wall. The orthostatic construction is typical of Iron Age walls.

The remains of a very poorly preserved wall (1780) seemed to continue the line of wall (1751) to the north-west, but further investigation of this area suggested that wall (1780) turned to right angle to the north-east to form a corner with wall (1801). There had been many boulders dumped in this part of the field, which explains the damage and confusion in this area.

Against the south-eastern end of wall (1751) what appeared to be a broad stone platform (1750) had been built. The date of these structures was difficult to determine from form or artefacts, so OSL dating was carried out to clarify the dates and chronology of the walls. This technique dates the last time minerals within the buried soils below the walls were exposed to light, so dating the construction of the walls. Samples from below structure (1750) indicated that it dated to the early to mid-17th century and wall (1775) dated to the mid-18th century. However, samples from under 1829 did show that it was an Iron Age wall as suggested by its construction style. It is suggested that walls (1829) and (1751) formed the original Iron Age wall enclosing this area and that wall (1775) was a much later addition, though its sinuous form is suggestive of earlier walls. The stone structure (1750) was probably built again the partially collapsed remains of wall (1751), possibly as a means of using up field stone, what is known elsewhere in Britain as a consumption dyke, and it may have formed a high but very broad wall.

If walls (1829) and (1751) can be argued to be an Iron Age enclosure they may have been constructed to enclose a small settlement as two stone-walled roundhouses (structures 1757 and 1787) were found associated with another structure (1758), which might be an animal pen. The pen (1758) was an oval stone structure with internal facing stones surviving in places, but the external part of the wall had collapsed to the north-west and was confused by tumble. It had entrances to the west, south-west and south-east, all with large orthostats forming jambs. The interior was partly cobbled. Built essentially as part of structure 1758, to its south-east, were the foundations of a stone-walled roundhouse (structure 1757). This may have been up to 12m in diameter externally, though part of the structure was obscured outside the limit of excavation. The south-eastern arc of the wall was very disturbed and its line unclear, but some internal facing stones survived on the western arc. Inside the roundhouse was a stone-capped drain.

To the south-west of structure 1757 was a much smaller stone-built circular structure (1787), which may have been a roundhouse or an ancillary structure. This was probably no more than 6m in diameter externally, but it had a stone-capped drain and a central hearth. The south-eastern entrance in structure 1758 seemed to open directly into structure 1787 and all three structures appear to have been built and used as a unit. A late Roman to early post-Roman OSL date was obtained from under the wall of structure 1758. This date is much later than that from under the supposed enclosing wall (1829). Whether this was indeed an enclosed settlement or roundhouses built within an earlier walled field, requires radiocarbon dates from the roundhouses and a closer study of the stratigraphic evidence.

6.3. Timber roundhouses (structures 1081 and 1440)

See Figure 2 for general location and Figure 3 for location of features

In the lower part of the site, just above the slope down into the Marsh were discovered the traces of two roundhouses. These were overlapping, and so must have been used sequentially, with structure 1440 (the eastern roundhouse) being the earlier.

Structure 1081 was about 11m in internal diameter, defined by a narrow slot ([1197], [1102], and [1618]) which would probably have held a timber plank wall. The slot was disturbed in places but where least disturbed the stones to hold planks in place were still visible. Inside the southern arc of the roundhouse was a stone-capped drain [1101], which exited under the wall on the western side of the structure. Close to the inner edge of the drain and around the northern arc of the roundhouse was a ring of large postholes, which would have held the posts that supported the roof. The roof would have been a tall, conical thatched roof, and its weight would have been taken by the post-ring, with little weight on the thin plank walls. No hearth was identified within the roundhouse, possibly because it had been truncated by ploughing, much of the middle and northern part of the roundhouse being under little more than 100mm of topsoil. However, there were numerous pits and postholes within the area of the roundhouse, though further analysis is needed to identify which belong to structure 1081 and which to structure 1440.

An unusual feature of structure 1081 is that there were substantial postholes ([1316], [1573], [1576] and [1936]) within the internal drain, which was unusually deep and narrow for a roundhouse drain. It is currently suggested that the drain was originally a wall slot and the posts for supporting the roof were located along the line of the wall. Possibly this wall, and presumably the roof, was dismantled, the roundhouse was rebuilt slightly larger, and the previous wall slot was reused as a drain. The feasibility of this interpretation needs to be explored.

The roundhouse had been terraced into the slope on the southern side and the natural gravels used to build up a platform on the northern side. This platform survived as layer 1484, up to 0.35m deep. Features relating to structure 1081 cut through this layer, but it sealed a buried soil, which would have been the ground surface before the deposition of the platform and the construction of structure 1081. Other features were cut into this buried soil and sealed under 1484. These features were probably contemporary with structure 1440.

Structure 1440 was also defined by a narrow wall slot [1333] about 9.7m in diameter, so it would also have had a timber plank wall. However, there were other gullies outside this wall slot, one of which ([1293]) may have been an outer drain but another ([1331]) was clearly a wall slot for a much smaller structure. It therefore appears that there were several phases of building on this site.

The roof of this structure may have been supported by a group of four posts ([1540], [1551], [1565], and [1581]) though these appear rather off-centre for this function and the structural elements of this roundhouse have still to be considered. In the centre of the roundhouse was a small furnace [1746]. This had a clay lining, which was vitrified in places due to the high temperature obtained within it. Almost filling the upper part of the furnace was a large lump of slag, the waste from the last firing of the furnace, with charcoal from the last fire in the base. This furnace was probably for smelting iron, but analysis of the slag from it will show what metals were being smelted and what ores were being used. Waste from earlier uses of the furnace was found dumped just outside of the area of the roundhouse, sealed under the platform layer 1484, helping to prove the chronological relationship between the two roundhouses.

Other features within the area of structure 1440 were probably in use with the furnace, particularly groups of stakeholes [1401] for supporting slight structures built of thin poles. However, the overlap between the two roundhouses means that more analysis is necessary to determine which features belonged to which roundhouse; in particular the entrance to structure 1081 needs to be identified. It is likely that the entrance was in the eastern arc of the building and there are numerous postholes in this area, but few are in a position suggestive of door posts or the posts of a porch. There is a group of postholes on the western side of the roundhouse that do resemble a porch, but several of these are earlier than the capped drain and at least the latest phase of the roundhouse. The site records and stratigraphy need close analysis to try and resolve this problem. As much of the northern and eastern side of structure 1440 has been truncated it is unlikely that its entrance can be identified, but it seems likely that it was either on the northern side facing the marsh or on the eastern side.

A narrow gully ([1377], [1907], [1920], and [2212]) ran from within structure 1440 downhill to the north-west, under layer 1484 and to the edge of the marsh where there were other large postholes. This gully is presumably related to the use of structure 1440, though it was earlier than many other features in the area. The function of this gully and the external postholes needs to be considered.

To the west of the roundhouses was a further scatter of pits and postholes. Four postholes ([1154], [1164], [1192], and [1326]) formed a square measuring about 3.7m x 3.7m externally. Slighter features between the main postholes on three sides may have been for subsidiary support posts. The size and form of this structure (structure 1309) suggests that this was a granary and there are many examples of similar structures on Iron Age and Bronze Age sites in Gwynedd and Anglesey. Immediately adjacent to the north-east corner of structure 1309 was another large posthole [1152] with substantial packing stones and a post-pad in the base. When these stones were removed, it was found that this posthole had replaced an earlier one [1306] in almost the same position. This did not seem to have formed part of structure and may have held an isolated large post, of sufficient importance to have been replaced when it decayed.

Also in this area was a small hearth (12723) formed of a flat, heat cracked stone with small postholes around it, though these did not form a coherent plan of a structure. Several pits indicate considerable activity in this area.

To the north of structure 1081 were more features including four large postholes ([2146], [2175], [2177], and [2179]). These postholes did not form a regular plan and may represent two pairs of posts used at different times. A layer of heat-cracked stone covered much of this area and indicates considerable activity, possibly

relating to the earlier roundhouse (structure 1440). The area was cut through by the trench for the high voltage electricity cable.

Finds from across both roundhouses include some iron objects, possibly nails and stone spindle whorls. The spindle whorls are typical of the Iron Age and Roman periods. The drain of structure 1081 was discovered in evaluation trench 07, when radiocarbon dates were obtained from the drain and other features. These dates suggested a late Iron Age or early Roman date for this structure. Heat-reddening on the edge of the drain and the quantity of charcoal within the drain fill indicate that the roundhouse burnt down and that the dated material is from the final use of the building. However, more dates will be necessary to determine the full duration of use of the building. As structure 1440 appears to pre-date structure 1081 it may be of middle Iron Age date and radiocarbon dates are needed to establish this and compare the dates of both structures.

A find of particular interest came from within the capped drain of structure 1081. This was an iron object nearly 1m long, sealed under the drain capping-stones and probably inserted into the drain while it was in use. This object will require x-raying, conservation and cleaning and specialist study to determine its nature and function.

6.4. Roman period activity

See Figure 2 for general locations

6.4.1. Possible Roman period roundhouses

Figure 4

In the upper part of the site adjacent to Llwyn Bleddyn Road were several dumps and spreads of stone. Some of the stone dumps were post-medieval in date and contained late pottery and other artefacts, but these overlaid more general spreads of stone. While cleaning over these stone spreads numerous sherds of Roman pottery and a small amount of Roman glass was found suggesting Roman period activity over these stone surfaces. The removal of the more disturbed stone spreads revealed a cobbled surface and various gullies, pits, postholes, and other features.

On the western side of this group was a curving drain [1884] running sinuously downhill as [1160]. Drain [1884] was covered with large slabs of what must have been quarried local slate. This feature resembled question-mark-shaped drains found in clay-walled roundhouses, though it ran for an unusually long way downhill. It is likely that this drain indicates the presence of a clay-walled roundhouse, the wall of which has been entirely lost. An area of slate paving over the drain may have indicated an entrance on the north-western side. Inside this area were numerous pits and postholes and the drain cut an earlier, circular pit [1918]. The pit [1918] had traces of burning inside it and may have been a corn dryer, though analysis of charred plant remains from its fill will be necessary to confirm this. Few diagnostic finds were recovered from within features in this area, but two sherds of Roman black-burnished ware pottery eroded out from the fill of the drain.

There was a flat hearth composed of slate slabs laid on clay (2072) next to a pit [2064] and a deposit containing quantities of slag. Another pit [1986] may have been an oven and once infilled a clay hearth was laid over the top of it. This feature had a gully [1941] running into it, possibly as a flue. A small copper-alloy rectangular plaque was found in the top of pit [1986].

In the eastern part of this area was a gully [2023] that may have been the wall slot for a timber roundhouse. This had an internal drain [2065] and an internal cobbled surface. However, postholes in the area did not make sense as structural elements of a roundhouse and it is even possible that this was a sub-rectangular building. A copper-alloy object, possibly a stylus (Roman writing implement), was found within the area of this structure.

To the south was a small circular furnace [2046] set within a cobbled area defined on its eastern side by a gully [1995] running down-slope. Sherds of a Roman amphora were found within the cobbled surface. It is likely that this was a cobbled yard or working area.

Across this whole area were numerous postholes, some of which appeared to form lines (e.g. [2071], [2078], [2116], and [2134]). Where the postholes had a relationship to other features they were generally later and it is possible that there was a later phase of activity defined by the postholes, possibly much later than the Roman period. However, it is not currently possible to identify the plan of any building formed by these postholes.

This area therefore represents a focus of Roman period activity with at least two structures, but closer analysis of the records and radiocarbon dating is necessary to work out the sequence of activity, the form of the buildings and to detect any later phase of construction.

6.4.2. Roman period activity under the farmhouse

Figure 5

Immediately below the floor of the farmhouse (structure 1005) a series of pits and postholes were found. As the farmhouse had been terraced into the slope it is surprising that these features survived, and some must be heavily truncated.

A shallow sub-rectangular cut [1187], partially lined with stones, was filled with charcoal and was clearly a hearth. This contained a sherd of Roman pottery (black-burnished ware). Cutting this was a shallow circular feature [1190], also filled with charcoal, which was partially cut away by the drain for the farmhouse. The hearth [1187] was also cut by a sub-circular pit [1224], which had a stony fill. Pit [1224] was cut by another pit [1125], which continued under the wall of the farmhouse. Pit [1125] contained a sherd of Roman pottery (samian ware) and a stone spindle whorl.

Immediately north-east of these pits were five postholes ([1353], [1596], [1635], [1666], and [1683]). These are suggestive of the presence of a structure, though its shape is not certain. Within the area defined by the postholes were more pits and hollows. One feature [1487] was a key-hole shape in plan with two chambers. Evidence of burning on the sides of the cut indicate that it was used as an oven, or possible as a corn dryer. If it was the latter the soil samples from this feature are likely to contain charred grain. This feature contained a sherd of probably Roman glass, Roman pottery (black-burnished ware) and a spindle whorl. A narrow gully [1397] running through the area was probably also associated with this early activity.

The finds indicate a Roman date for these features and the presence of a hearth and the postholes suggests that they were within a building. It is possible that this building was a roundhouse, but that most of the evidence for the walls has been lost.

Further finds were made from an activity hollow directly under a midden deposit (1017) from the later farmhouse. This included several sherds of Roman black-burnished ware and a large sherd from a globular amphora.

6.5. Cefn Bedw Farm

See Figure 2 for general locations

6.5.1. The farmhouse (structure 1005)

Figure 7

Remains of a building had been found in evaluation trench 6 and these were revealed to be part of a rectangular stone-walled building (structure 1005) measuring about 5m by possibly 10m. It was aligned almost exactly east-west with the southern side terraced into the slope (terrace cut [1221]). This meant that the southern side was more protected and better preserved, but that the northern side of the building barely survived. The southern wall (1011) was composed of boulders set on edge with smaller stones between. One boulder was 1.5m long, and a larger earth-fast boulder was also used as part of the wall. Traces of a white sandy mortar suggested that the inner face of the wall was rendered. The eastern wall (1222) barely survived but one large stone and a few smaller stones formed the south-east corner of the building. The northern wall (1010) was represented by a single large stone and a scatter of small stones, though some earth-fast boulders to the west might have been used within this wall. The western wall did not survive at all and the exact position of the western end of the building was uncertain.

The position of the door was unclear, but it was probably in the northern wall, possibly some slate slabs (1416) formed a threshold to the door. There was a complex of features inside the eastern end of the building. In the north-eastern corner was a neatly laid brick floor (1012). This was not an entrance was as an earth-fast boulder would have blocked the door. It was probably the base of a bread oven. This was separated from another small oven and a fireplace by a low wall (1220). The fireplace (1098) had a sandstone hearth stone and brick and stone fireplace with a rectangular flue that would have led into the chimney. Immediately to the south and constructed with the fireplace was a stone shelf with a large slab of slate forming the surface. The construction of the fireplace seemed to have infill and blocked off a small oven or earlier fireplace (1106), with its own heat-

cracked hearthstone. In front of the fireplace were slate slabs but most of the floor was a packed earth floor (1136), with some slate dust in places (1137).

Under the slates was a drain [1123] that ran along the inside of the southern wall into a stone-sided, slate-capped drain [1124], running north out of the building. This would have passed under the northern wall and drained into a broad hollow to the north of the building. Sealed under the earth and slate dust floor was another drain lined with slates. This seemed to be cut by drain [1124], so it was presumably and earlier version of the drainage system.

There was activity around the farmhouse with occasional pits and an extensive deposit containing post-medieval pottery, glass, and other rubbish ((1017), see Figure 2). This deposit was the remains of a midden containing domestic rubbish from the farmhouse.

This is the building shown on the estate maps close to the road. Although on site it was initially thought that this was a barn, the fireplace clearly shows that it was the farmhouse and its position by the road would be appropriate for a farmhouse. The fragmentary nature of the remains suggests that it was demolished down to foundation levels and in places all foundation stones were removed. Numerous large rounded boulders had been dumped within the area of the demolished farmhouse over the demolition rubble from the house itself. The boulders were probably from field clearance, dumped here because it was on the edge of the field and already had a large concentration of stone.

6.5.2. The outbuilding (structure 1050) and yard

Figure 6

About 15m north-west of the farmhouse were the remains of the outbuilding shown on the historic maps. The building (structure 1050) was orientated west-north-west to east-south-east, unlike the farmhouse, which was nearly east-west. The outbuilding had been demolished with only a few stones from the foundations of the walls remaining. The building overall measured 13m long and probably no more than 4m wide. The surviving stones (1074) show that at least the east-south-east end had been stone-built, but the west-north-western end was defined by a slot [1052] that may have held a wooden wall. A more irregular gully to the south [1049] seems to have been for drainage rather than to hold a wall.

Another short surviving fragment of wall foundation (1059) indicates a small room at the east-south-eastern end of the building. Within this was a floor surface composed of crushed slate (1058). Running across the building were drains, one [1092], was slate-capped and one [1042] was deep and stone-filled with a single stone slab (1069) across the top. The latter drain emptied out into a yard downhill to the north.

The yard (see Figure 2) occupied a broad linear hollow, probably worn through use. The yard was initially surfaced by a fine metalling then had been resurfaced with larger cobbles, though these had been rather roughly dumped rather than neatly laid. Filling the remains of the hollow where large numbers of broken roofing slates that had presumably been removed from the farmhouse and outbuilding when these were demolished and dumped nearby.

The yard was accessed by a track (1652) running from the road. This also had the remains of an initial earlier fine metalling but was mainly cobbled by one or more layers of medium sized stones.

6.5.3. Fields

Figure 2

While there were numerous earth-fast boulders in the area around the farmhouse and outbuildings stripping the site to the north and south-west revealed a high density of large boulders within the ploughsoil. Many of these were resting on or partially within a lower relict soil layer and probably represent the natural incidence of boulders left over this area at the end of the last ice age. This indicates where boulders had been cleared to improve the land in the immediate vicinity of the farmhouse with the boulders left in the fields. The clearance of boulders was not restricted to removing those loose in the ploughsoil, the tops of some earth-fast boulders had been removed by blasting. The blasted remains of the boulder and often part of a drill hole to hold the black powder explosive remained to demonstrate this process. This may be a technique specific to this quarrying valley, where there was easy access to black powder, whether officially or unofficially, and plenty of knowledge of its use.

Even close to the farmhouse the clearance of boulders was only partial and some, such as (1130), might have been used within walls. A wall (1143) ran north from the farmhouse along the side of the slate-capped drain that also ran from the farmhouse. Wall (1143) may have continued and incorporated the line of boulders (1130).

Few definite field boundaries were found, except in and around the Marsh. However, in the western part of the site there were the remains of what appeared to be two early walls. Feature 1304 was formed of a line of six large stones with an area of disturbed smaller stones and on the same line two large boulders with smaller stones around them. Feature 1447 was formed of a similar, though longer, line of stones but in this case, there were also parallel lines of smaller stones to each side. It is suggested that feature 1447 formed the foundation of a clawdd, a boundary formed by an earthen bank faced with stones. The line of stones would form a foundation for the core of the bank and the small stones were the remains of the stone facing. Although more disturbed feature 1304 was probably the same. Both features were built on a thick buried soil deposit. Comparisons will be made with the available historic maps of this area to determine whether these boundaries are shown on the maps. It is likely that they are the very fragmentary remains of an early field system.

7. STATEMENT OF POTENTIAL AND ARCHAEOLOGICAL IMPORTANCE

The extent and variety of Iron Age and Roman period settlement on the site means that this has a very high potential for studying all aspects of settlement development and use in this period. Dating is of particular importance but there is also potential for artefact studies, evidence for agriculture, and the study of the function of different structures and of spatial division within buildings. The Roman period activity appears to represent a continuation of the Iron Age settlement with a shifting focus. The presence of postholes cutting Roman period features could indicate later activity that might possibly be post-Roman or early medieval settlement in date.

The Research Framework for the Archaeology of Wales (https://archaeoleg.org.uk) considers research priorities for the archaeology of Wales. There have been several reviews of the Framework. The latest review is on-going but there is a document available for the Later Bronze Age and Iron Age. This highlights the critical importance of dating for this period, building on the 2016 review which stated that "chronology remains the key to understanding the period and C14 dating in the Iron Age is notoriously difficult…It is important that finance is made available for this important work." The 2022 review points to the use of OSL dating and Bayesian analysis to assist in solving the chronological problems of the period. The 2017 review of the Roman period framework also calls for radiocarbon dating, particularly to identify very late and post-Roman activity.

The 2022 review emphases the importance of carbonised plant remains to better understand landscape, economy and provide dating material, and the issue of field systems is mentioned in various reviews of the Iron Age and Roman periods. The importance of understanding metal resources and their use is also mentioned for both the Iron Age and the Roman period. The 2014 review of the Later Bronze Age and Iron Age highlights the need to look at the variety of house architecture in the Iron Age.

The current site presents a valuable opportunity to address some of these Wales-wide research issues. The stratigraphy and wide range of features containing datable material make it ideal for addressing the chronological issues. It is likely that there is a range of dates for the structures across the site and it may be possible to reconstruct how settlement migrated across the site over time. The use of Bayesian analysis on the radiocarbon dates will improve the precision of the dates obtained and allow comparisons across the site.

The presence of field boundaries, two of which were dated during the fieldwork phase to the Iron Age and Roman period by OSL dating, also contributes to the understanding of the development of field systems of this period. Although many early field systems are known in north-west Wales very few of the boundaries within these have been dated. The potential for soil micromorphology and pollen analysis from the buried soil beneath roundhouse structure 1081 provides the opportunity to investigate farming practices.

The detail and variety of features within the roundhouses and the suggestion of rebuilding and remodelling of some of these structures will allow their use and development to be studied. With stone-walled, timber-walled, and probably clay-walled roundhouses, on the same site these types of roundhouse architecture can be compared in date and use. Good dates will enable the development of roundhouse architecture to be studied both on the site and compared to other sites. There has been an assumption that small stone-built roundhouses are later and larger timber-built roundhouses are earlier, but some sites such as Parc Cybi, Holyhead are showing that such simple patterns are unlikely to be true.

The presence of a furnace in the middle of structure 1440 indicates that the structures were not all domestic and provides the opportunity to study various uses of roundhouses. The two furnaces found on the site allow an investigation of metal smelting in the Iron Age and Roman period. Analysis of slag from these furnaces should enable the type of metal smelted to be identified and its source, such as from bog iron, to be determined. The research framework highlights the scarcity of detailed studies of metal technologies especially in the Iron Age and this presents an opportunity to correct that.

The site is set within a landscape full of roundhouse settlements but few of these have been excavated and their date, use and contemporaneity has so far only been guessed at. This excavation provides an opportunity to throw a light on this wider landscape by investigating one of the settlements within it. This project is therefore not just investigating a single site but contributing to the understanding of a remarkably well-preserved landscape.

All the known roundhouse settlements in this landscape are scheduled, indicating that they are of national importance. The current site must, therefore, also be considered of national importance, but its significance will be increased once the post-excavation process has been completed, as it will be much better understood than the unexcavated examples. The number of roundhouse settlements that have been excavated to modern standards in north Wales is still relatively low and the number that have been well-dated is even lower. To study social and settlement hierarchies it is necessary to know which settlements were in use at the same time and that requires a lot more dating of sites to be done than at present.

The finds assemblage from the site is relatively small but the number of spindle whorls is high and may be important for understanding livestock farming, as well as domestic activities, as wool is likely to have been the main fibre spun using the spindle whorls. The poor bone preservation on many sites in Gwynedd means that studying livestock through bone assemblages is rarely possible and other means need to be employed. The assemblage of Roman pottery is larger and has more high-status pottery types than usual for a roundhouse settlement. The presence of a possible stylus also suggests more typically Roman activities, i.e. writing, than is usual for a roundhouse settlement. This assemblage may, therefore, be significant in understanding the use of the settlement and others in the area. The large iron object discovered in roundhouse 1081 has the potential to be of national importance and it requires x-raying as soon as possible to help identify it and assess its condition.

The post medieval landscape can be effectively studied through historic maps, but the excavation has revealed details that are not found on the maps. The farmstead is of only local importance but the detailed study of it and its layout along with finds indicating its use and status must raise this to regional importance.

8. POST-EXCAVATION RESEARCH DESIGN

The main focus of the research design must be on the Iron age and Roman period settlement, but the presence of a probable Bronze Age feature on the site shows that a wider time span must be considered. Understanding the chronological development of the site is the one of the principle aims of the research design. This includes comparing the dates of the different structures. Is it possible to see a movement of settlement up the site over time and could this be related to the lower part of the site becoming wetter? How long were individual structures in use and how much were they rebuilt and remodelled? The limitations of radiocarbon dating, however, do become particularly prominent during this period. The large errors from wiggles in the calibration curve mean that radiocarbon dating can be a rather crude tool. However, by using Bayesian modelling in the analysis of the dates there is good potential to improve the results. Bayesian modelling uses the stratigraphy to help statistically compare dates and so improve precision, and the complex stratigraphy on various parts of the site makes it particularly suited to this approach.

There is the potential to study the varied uses of these structures, some of which appear to be industrial rather than domestic. Timber roundhouses with a wall slot are less well-known than stone-walled roundhouses, as they are generally only discovered through excavation. The comparisons between the different roundhouse architecture will be studied. Structure 1081 has various peculiarities, especially a possible early phase with large postholes on the line of the wall slot, and the reuse of this as a drain. Parallels for this will be sought as well as studying the excavation records closely to determine how this worked in this case.

The significance of the spindle whorls and where they were recovered will be studied as this may reveal where activities were taking place, or where loss was occurring. The Roman pottery assemblage and other Roman

period finds needs to be compared to other assemblages to determine what it can tell us about the status and function of the site in that period. There is a large number of soil samples and the amount of evidence from the charred plant remains is likely to be significant. This evidence will to be used to identify spatial patterns that may indicate activities within and between the structures, as well as providing evidence for farming practices and the surrounding vegetation. The presence of a buried soil beneath structure 1081 provides a valuable opportunity to obtain information on the vegetation and use of the land directly before the roundhouse was built. It is uncertain how well pollen survives in the soil, but this has the potential to provide information on the vegetation. Soil micromorphology can also determine how the soil formed and where it was disturbed by ploughing or worm activity within a stable pasture. This could provide detailed information on land use.

The site needs to be studied in its local landscape with a range of other contemporary, earlier, and later sites. It also needs to be compared to other contemporary sites in the region and nationally, both across Wales and across Britain. Known Iron Age settlements are numerous in Wales with many having been discovered by aerial photography (Davies and Lynch 2000, 162). Some 1000 roundhouse settlements are known from north-west Wales (Longley 1998, 266), but most are dated by casual finds of Roman pottery and coins, so the full duration of their occupation is unknown. Ghey *et al* 2007 found that throughout Wales 750 roundhouses have been excavated on 189 sites, with 39% being in Gwynedd and Anglesey, but that many were antiquarian excavations. This number has increased since that study, but the number of excavated sites is still very small in comparison to the number of known sites and every excavated site provides new and often unexpected information for understanding roundhouse settlements.

The Rachub settlement will be examined in the context of a series of several significant excavations undertaken under modern research conditions. These include the Graeanog Ridge, Llanllyfni (Mason 1998), Bryn Eryr, Anglesey (Longley 1998), three settlements along the A55 across Anglesey (Cuttler *et al* 2012), Parc Bryn Cegin, Llandygai (Kenney 2009) and Parc Cybi, Holyhead (Kenney 2021). In particular, roundhouses with wall slots are important for parallels, such as Moel y Gerddi and Erw Wen, near Harlech (Kelly 1988) and roundhouse E at Parc Bryn Cegin (Kenney 2009).

The geographical context on the boundary between the uplands and the farmed land, clearly enclosed by small fields in the Iron Age will be considered. As will the chronological context. The current evidence suggests the site spans the period from the Iron Age into the Roman period and impacts of the Roman occupation will be considered (Evans 2003).

9. POST-EXCAVATION PROJECT DESIGN

9.1. Introduction

The management of this project follows guidelines specified in *Management of Archaeological Projects* and *Management of Research Projects in the Historic Environment* (English Heritage 1991 and 2015). Five stages are specified in English Heritage (1991):

Phase 1: project planning
Phase 2: fieldwork
Phase 3: assessment of potential for analysis
Phase 4: analysis and report preparation
Phase 5: dissemination

The post-excavation stage of the project includes phases 3 to 5. It is standard practice to create a project design for the assessment of potential phase and an up-dated project design after that phase is complete to inform the report preparation and dissemination phases. However, this design will cover the whole of the post-excavation work through to the end of the dissemination phase, which also includes archiving the artefact assemblage and records. The reason for this is to make it clear the full extent of the work required for the post-excavation phase of this project.

The purpose of the post-excavation phase of any archaeological project is to ensure that appropriate analyses are undertaken. This involves the identification of relevant specialists and careful definition of academic and archaeological objectives, to ensure that 'appropriate selection is made, and a publication produced which accurately reflects the value of the data collection'. All data sources are to be collated, quantified, and studied.

This includes all site records, made up of the written record, drawn record and photographic record, all artefacts, and all environmental samples, including those suitable for dating purposes. The aim is to produce a detailed archive report that fully describes the site and the results of analysis and includes interpretations and discussion of the evidence. To complete this it is necessary to:

- Study of the site records and compile appropriate plans and representative sections, select appropriate photographs, and compose a detailed site narrative.
- Carry out analysis on artefacts and ecofacts
- Incorporate the findings of the specialist reports into the final report with any changes of interpretation and discussion necessary
- Carry out comparative research into the different periods of activity on the site to place them in their local and regional context

It is then necessary to publish the results so the archive report must be converted into a format suitable for publication, including selected illustrations and photographs.

It is also necessary to archive the finds assemblage and records appropriately for long term storage.

9.2. Methods Statement for Archive Report

9.2.1. Site archive and site report

Spreadsheets will be created to allow the archiving and interrogation of the site registers and selected information from the context sheets. This will provide metadata for the archiving of the digital photographs. All field drawings, context sheets and object record sheets will be scanned to provide a backup digital copy and in the case of the drawings to allow them to be converted into final illustrations.

The finds have been washed or cleaned as appropriate and initially boxed in advance of specialist study. Some finds will need to be repackaged into containers suitable for long term storage and some require professional conservation work to stabilise them. There is a basic catalogue of finds and the specialist study will enhance this.

Context sheets will be checked, and area matrices drawn up where appropriate. Composite outline drawings have been created from field plans for most of the main areas of the site, but detailed drawings need to be produced. This will involve combining hand-drawn plans, survey data and photogrammetry data to create area plans from which appropriate illustrations of different periods of activity can be extracted. All significant features will be shown in plan. Selected sections will be drawn up. These will be restricted to large sections showing numerous important relationships and typical sections of features such as pits or postholes where the character of these is best indicated visually rather than by description. Plans and sections will be labelled with all appropriate context numbers and will illustrate the text. All finds recommended for drawing will be included. Finds will generally be illustrated by line drawings, but photographs may be included where this is more appropriate. Photographs of features and structures will be restricted to general overviews to give context to detailed plans, except for specific features that might be best illustrated by photographs.

A detailed site narrative will be written for each area of activity describing the main features and their relationships. Interpretations of these features will be presented. The archive report will include detailed descriptions and illustrations, so that it can potentially be used to reassess and reinterpret the site. Specialist reports and a full list and detailed discussion and analysis of the radiocarbon dates will be included as appendices with their own illustrations and tables. The results will be summarised in the main text and used in the discussion and interpretation of features.

Research into comparable sites will allow full interpretation of the features in their local, regional, and national context and will allow a discussion of the site and its place within the surrounding landscape.

The archive report will be held by Gwynedd Historic Environment Record, where it will be available for public consultation and will be available online through the Archwilio website. The final Archive Report will also be made available from the RCAHMW Coflein website.

9.2.2. Artefacts

Roman pottery – There are 81 sherds of Roman pottery and 11 of possible Iron Age pottery, probably Cheshire Salt Containers. Much of this material came from the area of the potential Roman period roundhouses and includes amphora sherds, a mortarium sherd, eroded fragments of samian ware, but is mainly composed of black-burnished ware. Roman pottery will be studied by Gillian Dunn, and she will assess the potential Iron Age pottery. If any of the latter proves to be genuine, it will be sent to Iron Age pottery specialist Elaine Morris for full study. Gillian Dunn will produce a detailed catalogue with descriptions of the sherds and discussion of their significance. Significant sherds will be illustrated as appropriate. The assemblage will be placed in the context of other assemblages from North Wales and the significance of the assemblage for elucidating social and economic issues requires discussion.

Post-medieval pottery and glass – There are 1111 sherds of post-medieval pottery and 76 sherds of post-medieval glass. Most of this material came from in and around the farmhouse and represents an insight into the wares being used by a small farmstead in the 18th and 19th centuries. It is possible that there are some earlier sherds amongst this collection. The post-medieval pottery and glass will be fully catalogued, described and dated by Jonathon Goodwin. If necessary, any significant sherds will be illustrated photographically.

Roman Glass - The seven items of Roman glass and beads will be catalogued, described, and dated by Hilary Cool. The number of items is small, but some discussion of their significance will be presented. Significant pieces will be illustrated photographically.

Flint – There are six pieces of flint, two of which are retouched. This small assemblage will be catalogued and described by Ian Brooks. The two retouched items are worth detailed illustrations.

Worked stone – There are 118 stone objects, 69 of which (including 13 spindle whorls) are probably of Iron Age or Roman date, the remainder being post-medieval in date. The study of these items will be carried out by staff of the AOC Archaeology Group. A geological identification of the stone used to make the objects will be done by Fiona McGibbon and the objects will be studied by Dr Dawn McLaren. A catalogue of items will be produced along with a report including a discussion of the objects and their significance. Selected items will be illustrated by Tanya Williams.

Metal objects – There are 132 metal objects (iron, copper alloy and lead), 42 of which are probably of Iron Age or Roman date, the remainder being post-medieval in date. All the iron objects and any of the copper alloy objects that require it will be x-rayed and significant items that are unstable will be conserved to stabilise them. The x-rays and conservation will be carried out by Pieta Greaves, but the large iron object from roundhouse structure 1081 is too large for most conservation x-ray machines. It will therefore be x-rayed by the National Museum of Wales. The metal objects will be studied by Nicola Rogers, who will produce a catalogue and report discussing their significance. Selected items will be illustrated by Tanya Williams.

Metal-working debris – There is about 28kg of metal-working debris plus an intact vitrified mass from inside one of the furnaces. This material will be analysed by Tim Young. He will assess the material and selected items for further study from each of the two furnaces. He will carry out up to 12 whole sample elemental analyses and up to four SEM samples on selected material and produce a report on the data.

Marine shells – There is a single sample of marine shells from a post medieval context. These will be identified in house by GAT and proportions of different species recorded. No detailed work is recommended on these shells.

9.2.3. Ecofacts

Animal bones – There are currently 9 bags of animal bone, mostly small fragments. More will be recovered from the wet sieving of the bulk soil samples but due to issues of preservation it is expected that most of this will be small pieces of burnt bone. The bone will be studied by Jackaline Robertson of AOC Archaeology Group. All the material will be assessed, and identifiable material will be further studied to identify species and if body part. A catalogue and report will be produced.

Bulk soil samples – The 233 bulk soil samples will be processed by GAT using flotation with a 250-micron mess to separate out the charcoal and charred plant remains. The residue will be collected in a 500-micron mesh. The residue will be inspected for small artefacts. Samples from areas with evidence of

metalworking will be checked with a magnet for magnetic archaeometallurgical residue. Any finds will be included in the post-excavation programme and sent to the relevant specialists for study. Once all artefacts and any other useful evidence has been removed from the residues they will be discarded. The charcoal and charred plant remains will be bagged up as dry flots and will be studied by AOC Archaeology Group. Both the charred plant remains and the charcoal in the flots will be studied by Jackaline Robertson. The flots will be assessed and any samples requiring further analysis will be identified. Further analysis will include detailed identification of the charred plant remains to species and identification of the charcoal to species. This will result in a report with a discussion of the results.

Charcoal samples – There are 9 hand collected charcoal samples, most of which are samples of fuelwood from the possible earth oven. These will be identified to species by Jackaline Robertson and inspected for evidence of woodworking by Dr Anne Crone.

Soil micromorphology – Three small soil monoliths were collected from the buried ground surface under the platform for structure 1081 One of these will be chosen and will be subjected to micromorphological analysis to determine the nature of this deposit and potentially detect evidence for ploughing or worm activity. The analysis will be carried out by Lynne Roy of AOC Archaeology Group.

Pollen analysis – The sample soil monolith used for the micromorphology analysis will be used to obtain samples for pollen analysis. Depending on the preservation of the pollen this may indicate the vegetation immediately prior to the construction of the roundhouse and could indicate farming practices and landuse. Four subsamples will be taken from the monolith. The pollen analysis will be carried out by Dr Paula Milburn of AOC Archaeology Group.

9.2.4. Radiocarbon dating

Radiocarbon dating will be critical to understanding this site and to identifying phases of activity. To ensure that the dates obtained relate directly to the features and activities to be dated it is important that material for dating is carefully selected. Material will be first identified to species and only short-lived species will be chosen. Where possible these will be directly related to the activity to be dated, such as fuelwood from a fire or will provide additional dating evidence, such as dating cereal grains to contribute to the chronology of the use of certain crops. Features to be dated will only be chosen once the stratigraphy and development of the site has been fully understood so that the most appropriate features for dating can be chosen. The radiocarbon dating will be carried out at the Scottish Universities Environmental Research Centre (SUERC) radiocarbon dating laboratory, which has a good reputation for producing high precision dates and for efficiency and customer service.

Raw radiocarbon dates can only be converted into actual dates for comparison to each other and to calendar dates by being calibrated against a calibration curve created from dating material of known ages. The standard curve used for calibration is Reimer *et al* (2013) available through the OxCal program. However, this often results in larger date ranges than the raw dates due to variations in the curve. The later Iron Age falls within a part of the curve that is particularly problematic, so dates from this period can have large date ranges. Dates from the Roman period can also have date ranges that are too large to be meaningful when compared to historical dates. Relatively few Iron Age settlements in Wales are well-dated largely due to the impression that this is not worthwhile due to the calibration problems. However, where there is a combination of good stratigraphy and good dating materials Bayesian analysis can circumvent the calibration problems. Combining stratigraphic information with the dates through Bayesian statistics allows for the rigorous and objective comparison of radiocarbon dates and an estimate of more precise dates. This method can produce dates for the start and end of a period of activity and can estimate the duration of that activity. It can also be used to compare the periods of activity on different parts of the site. However, this technique requires a sufficient number of well-chosen dates. The radiocarbon dates can also be compared with the OSL dates already obtained.

The Bayesian analysis will be carried out by Derek Hamilton of SUERC, and his advice has been obtained about the optimum number of dates from each part of the site to produce significant results through Bayesian analysis. He ran several test models to determine probable optimum numbers, and these are used to inform the numbers listed below:-

Stone-walled roundhouses – 4 dates
Timber roundhouses – 16 dates
Roman period structures – 16 dates
Roman period pits under the farmhouse – 8 dates
Earth oven – 2 dates
Total 46 dates

9.3. Academic publication

The archive report will be the most detailed of the dissemination media and will be of importance for anyone studying the site in detail in the future. However, such a document is termed 'grey literature', it is not widely available for consultation in libraries, and it is not peer reviewed, nor is it commonly used for referencing the findings in academic literature. A published report fulfils these requirements, and it is therefore intended to publish the results as a paper in Archaeologia Cambrensis, the main archaeological journal for Wales.

The format will follow that of the archive report, but detailed descriptions of individual features will be reduced, and the text will be made more concise. Plans of all important features will be included, but only features discussed in the text will be labelled. Sections will be included where they illustrate issues specifically discussed in the text. Photographs will be used where necessary to illustrate particular points or give general overviews. The most representative and unusual examples of the illustrated finds will be included, although the aim will be to include as many finds illustrations as space allows. The specialist reports will be edited to be concise, and discussion will be limited to the important features, but the aim is to include all specialist reports in the publication.

9.4. Archiving, storage, and curation

Storiel, Bangor (Gwynedd Museum and Art Gallery) has been chosen as the most appropriate repository for the artefacts and they have agreed to accept the finds. By accepting this project design the client, as owner of the objects, agrees to the transfer ownership of the artefacts to the museum. Liaison with Storiel has established guidelines for the preparation and deposition of the archive. It should be noted that all museums now charge £100 for deposition of each archive box or large object from commercial projects. This charge is included in the costs accompanying this document.

The cleaned and conserved artefacts will be appropriately boxed and labelled. A spreadsheet of finds will be submitted to the museum with the collection to aid cataloguing. A discard policy will be worked out in conjunction with Storiel so that artefacts of recent date and low significance are not retained. Charred plant remains are not always accepted by museums, but these have as much, if not more, archaeological value as the artefacts and it has been agreed with Storiel that they will accept this important resource. The charred remains are in the form of dried flots in labelled bags to be stored in archive quality boxes. These are to be labelled and accessioned with the finds archive.

Storiel cannot accept the paper or digital archive, and the latter requires guaranteed long term active storage. Therefore, the full paper and digital archive will be deposited with the Royal Commission on the Ancient and Historical Monuments of Wales. RCAHMW holds the national archive of digital site records for Wales and has facilities to actively curate the archive. The digital archive will comprise digital copies of reports and project designs, spreadsheets listing contexts, drawing, sample, photograph and finds registers, digital site photographs, survey data, backup scans of the context sheets, and scans of all site drawings. The RAW photographic files will be converted to TIFF for archiving. All files will have metadata in a format agreed with RCAHMW. Material from previous phases of this project will be archived along with the material from the mitigation phase.

The paper archive will include all significant site records from both the mitigation and earlier phases, e.g. context sheets, site registers, site drawings, site diaries, level books, as well as paper copies of the reports. The paper element will be placed in archive stable boxes and the Permatrace drawings will be rolled and placed in cotton bags.

10. RESOURCES AND PROGRAMMING

10.1. Staffing and equipment

Most of the site narrative, discussion and co-ordination of the report will be carried out by Jane Kenney, who directed the excavation, to ensure consistency. She will be assisted by a team of project archaeologists. Stuart Reilly will manage the project and will edit the archive and publication reports. Additional editing of the publication report will be by Andrew Davidson. Complex illustrations will be done by Jane Kenney and other

illustrations will be created by the team under her instruction. Some illustrations will be done by the appropriate specialists as indicated in the methodology. Flotation will be carried out by experienced GAT staff.

Following is the list of specialists to be used.

Roman pottery
Gillian Dunn
Freelance Roman pottery specialist.

Iron Age pottery
Elaine Morris
Visiting Fellow, University of Southampton

Post-medieval pottery and glass
Jonathan Goodwin
Stoke-on-Trent Archaeology, post medieval pottery specialist

Roman glass
Hilary Cool
Roman glass specialist

Flint
Ian Brooks
Freelance flint specialist

Worked stone
Dawn McLaren
AOC Archaeology Group

Geological identification of stone objects
Fiona McGibbon
AOC Archaeology Group

Metal objects
Nicola Rogers
Freelance finds specialist

Metal working debris and burnt clay
Tim Young
GeoArch: geoarchaeological, archaeometallurgical & geophysical investigations

Artefact Conservation
Pieta Greaves
Freelance conservator

Artefact illustration
Tanya Williams
Freelance graphic designer and archaeological illustrator

Animal bone
Jackaline Robertson
AOC Archaeology Group

Charcoal and charred plant remains
Jackaline Robertson
AOC Archaeology Group

Woodworking
Anne Crone
AOC Archaeology Group

Soil micromorphology
Lynne Roy
AOC Archaeology Group

Pollen analysis
Paula Milburn
AOC Archaeology Group

Radiocarbon Dating
Scottish Universities Environmental Research Centre (SUERC) radiocarbon dating laboratory

Bayesian Analysis of Radiocarbon Dates
Derek Hamilton
SUERC

10.2. Timetable

The timetable for the work will depend to some extent on when the work starts. If there is a delay in the start of the work specialists may have other commitments and their work on this project could be further delayed. Some tasks must be carried out sequentially, in particular the processing of the soil samples must be completed before the charred plant remains can be analysed. This analysis must be done before material can be selected for radiocarbon dating, which in turn will inform the final interpretation of the site in the archive report. The processing of the soil samples will probably take about 7 months, the analysis of the material 2 months and the standard turn-around time for radiocarbon dates is 10 to 14 weeks, so up to 3.5 months. It is therefore likely that radiocarbon dates will not be available for incorporation into the archive report in less than a year.

However, many of the specialist tasks can be carried out at the same time. Much of the report writing and illustration can be carried out while the specialist reports are being produced but the final interpretations will have to wait until all the results have been collated. It should be possible to complete the archive report in about a year from the start of the project if there are no delays. The archive report will then need to be signed off by

GAPS, who might request alterations. Their turn-around time for a large report will depend on their workload at the time but could be up to 6 months.

The publication report and the archiving will probably take a further 4 months but can be done while waiting for GAPS's response on the archive report. However, it is probably best to assume that the project will be entirely completed about 1.5 years from the start date.

Summary
Completion of the archive report - about 1 year
Completion of publication report and final archiving – 4 months

Allow 1.5 years for full completion of project

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Research Framework for the Archaeology of Wales https://archaeoleg.org.uk
Soilscapes, Cranfield Soil and AgriFood Institute www.landis.org.uk/soilscapes
Welsh Tithe Maps, National Library of Wales https://places.library.wales

11.3. Maps

Bangor University Archives
Penrhyn MSS 2203 (1768)
Penrhyn MSS 2218 (1855)

Ordnance Survey 1-inch to 25-mile County Series Maps
Caernarvonshire sheets XX.2 and XX.6, first edition 1889, second edition 1900, third edition 1914

12. FIGURES

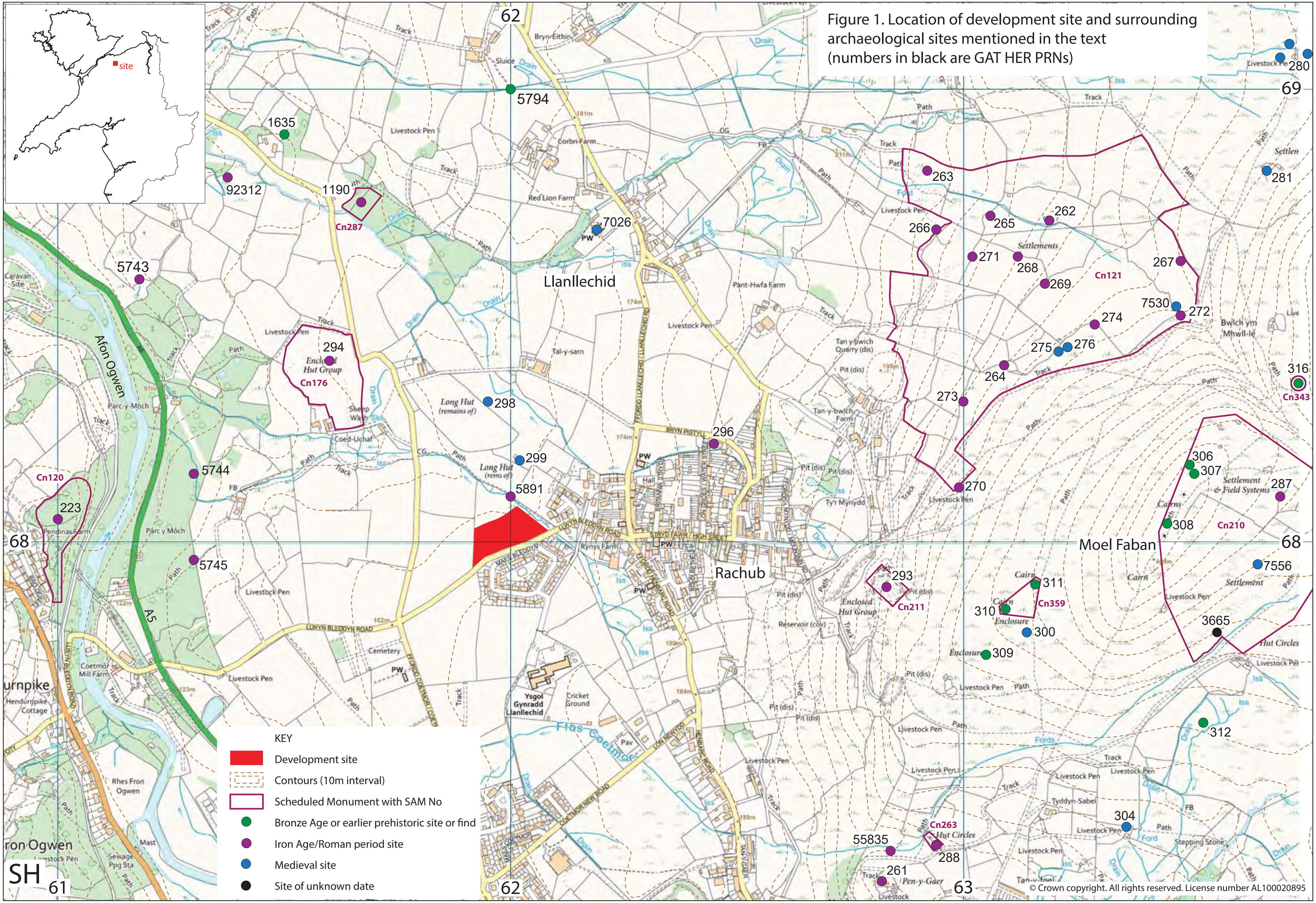

Figure 1. Location of development site and surrounding archaeological sites mentioned in the text (numbers in black are GAT HER PRNs)

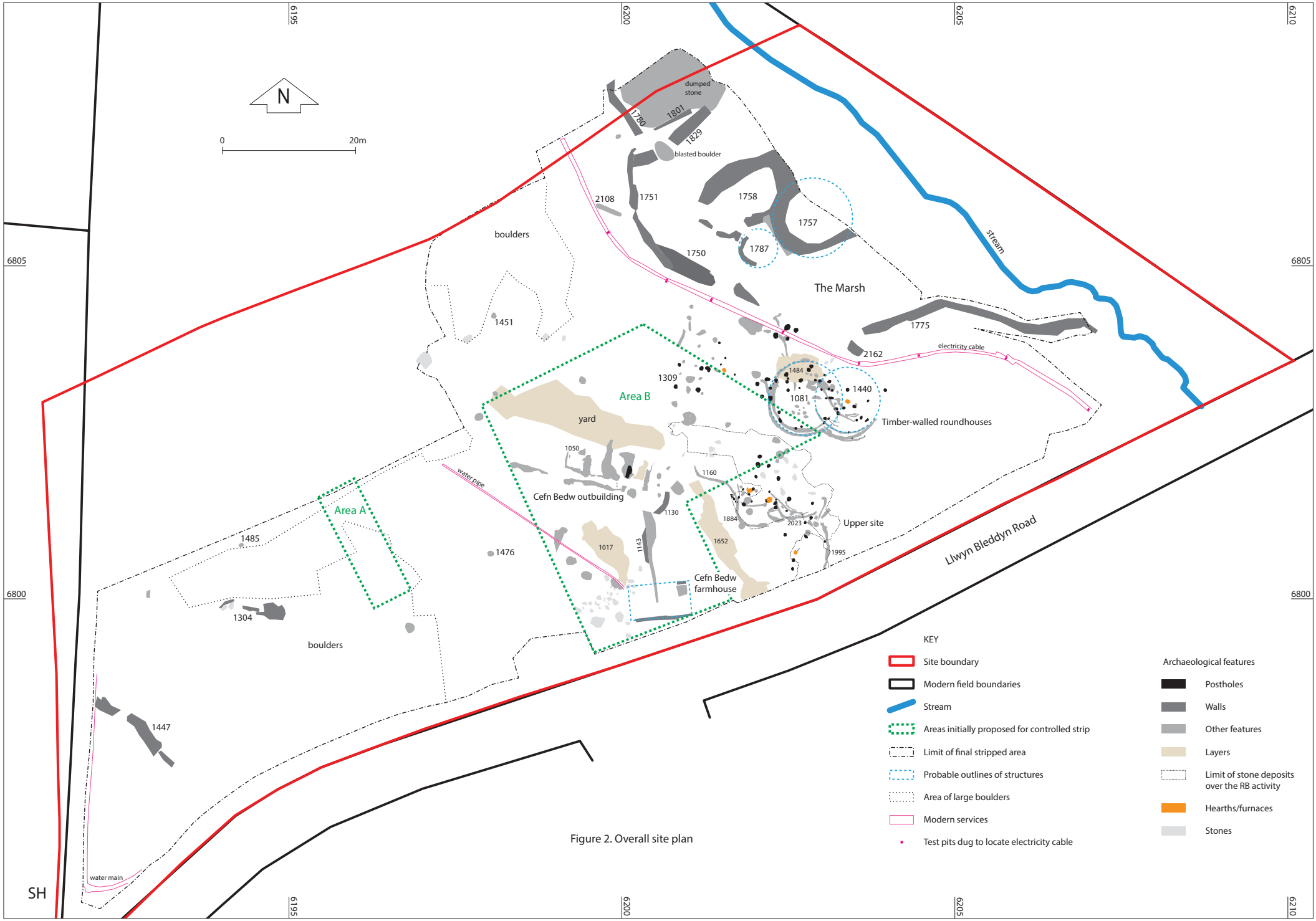

Figure 2. Overall site plan

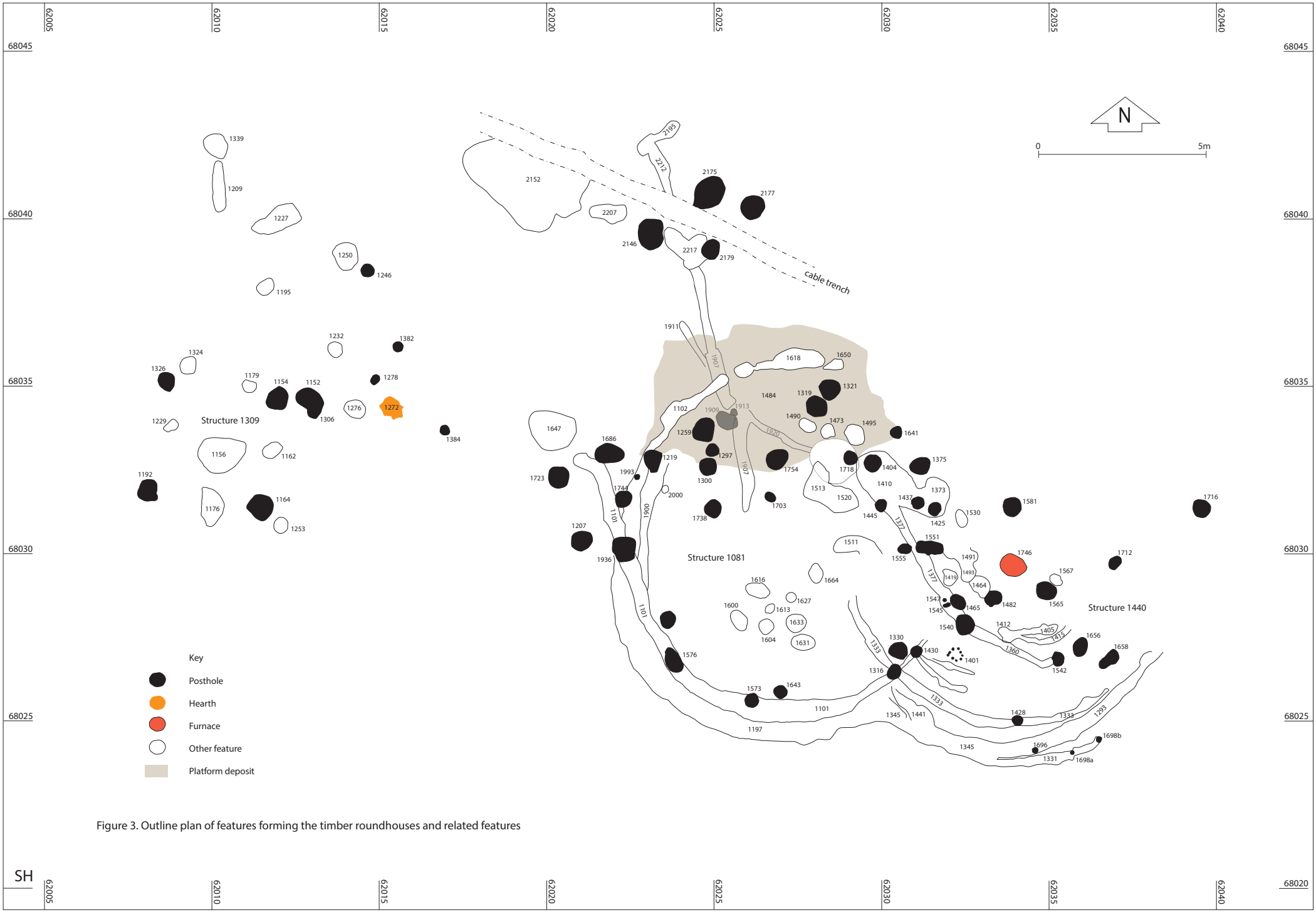

Figure 3. Outline plan of features forming the timber roundhouses and related features

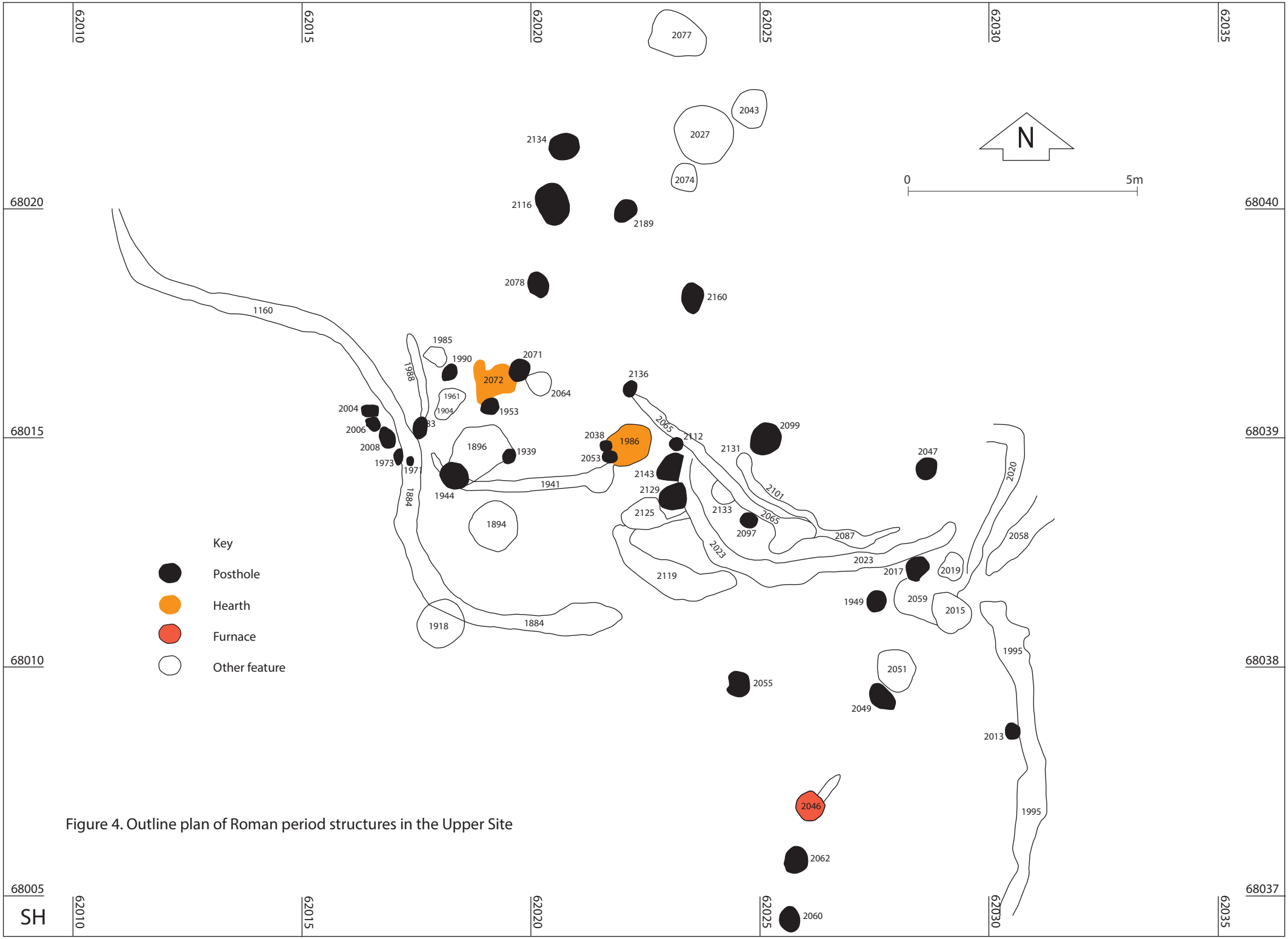

Figure 4. Outline plan of Roman period structures in the Upper Site

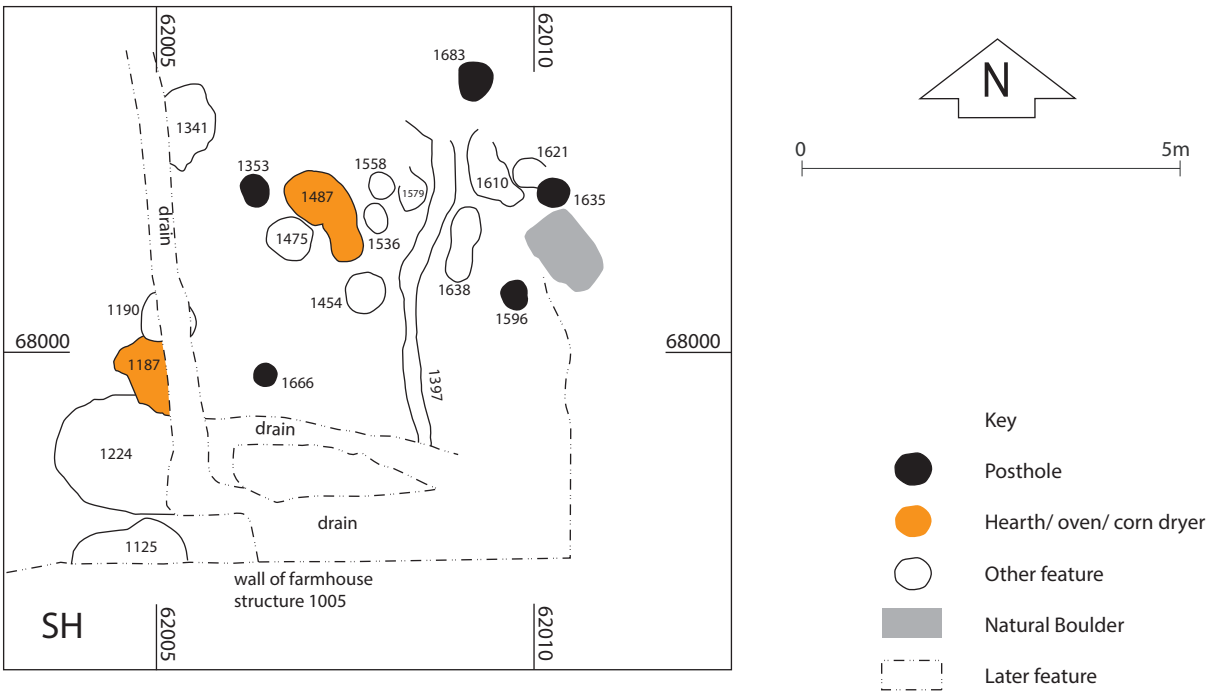

Figure 5. Outline plan of Roman period features under the farmhouse (structure 1005)

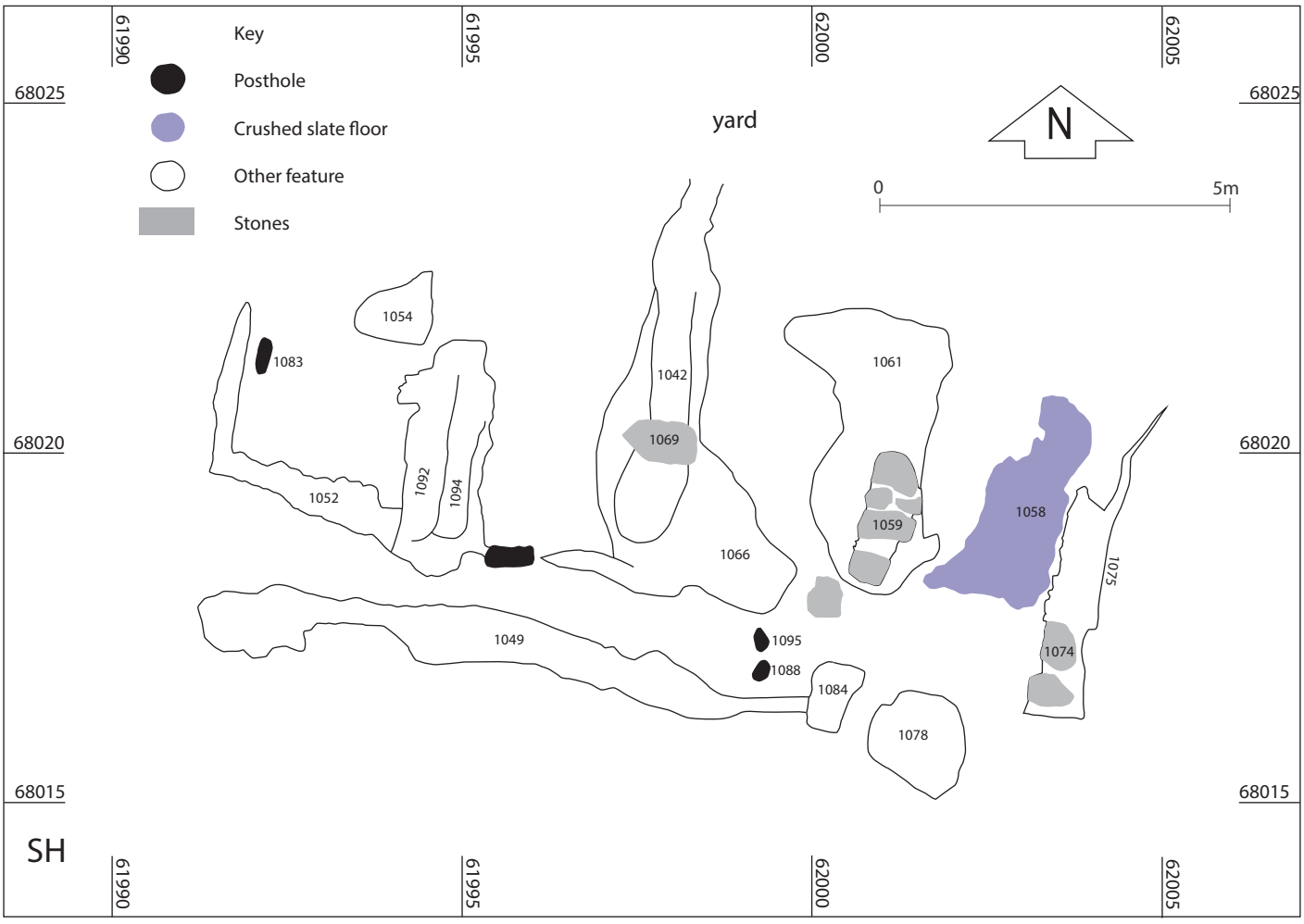

Figure 6. Outline plan of remains of Cefn Bedw outbuilding (structure 1050)

Figure 7. Orthomosaic of the farmhouse (structure 1005)
(Not to a specific scale)

Gwynedd Archaeological Trust
Ymddiriedolaeth Archaeolegol Gwynedd

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