



LAND OFF PENRHOS ROAD, BANGOR, GWYNEDD

Archaeological Evaluation Report



Oxford Archaeology North

April 2013

REDROW HOMES

Issue No: 2013–14/1386
OA North Job No: L10516
NGR: SH 55488 69830

Document Title: Land off Penrhos Road, Bangor, Gwynedd
Document Type: Archaeological Evaluation Report

Client Name: Redrow Homes

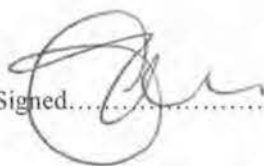
Issue Number: 2013-14/1386
OA Job Number: L10516
Site Code: PRB12

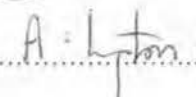
National Grid Reference: SH 55488 69830

Prepared by: Jeremy Bradley
Position: Project Officer
Date: April 2013

Checked by: Emily Mercer
Position: Senior Project Manager
Date: April 2013

Approved by: Alan Lupton
Position: Operations Manager
Date: April 2013

Signed.....

Signed.....

Oxford Archaeology North

Mill 3, Moor Lane Mills
Moor Lane
Lancaster
LA1 1QD
t: (0044) 01524 541000
f: (0044) 01524 848606

w: www.oxfordarch.co.uk
e: info@oxfordarch.co.uk

© Oxford Archaeology Ltd (2013)

Janus House
Osney Mead
Oxford
OX2 0ES
t: (0044) 01865 263800
f: (0044) 01865 793496

Oxford Archaeology Limited is a Registered Charity No: 285627

Disclaimer:

This document has been prepared for the titled project or named part thereof and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of Oxford Archaeology being obtained. Oxford Archaeology accepts no responsibility or liability for the consequences of this document being used for a purpose other than the purposes for which it was commissioned. Any person/party using or relying on the document for such other purposes agrees, and will by such use or reliance be taken to confirm their agreement to indemnify Oxford Archaeology for all loss or damage resulting therefrom. Oxford Archaeology accepts no responsibility or liability for this document to any party other than the person/party by whom it was commissioned.

CONTENTS

SUMMARY	3
ACKNOWLEDGEMENTS.....	5
1. INTRODUCTION.....	6
1.1 Circumstances of the Project.....	6
1.2 Location, Topography and Geology	7
2. METHODOLOGY	8
2.1 Introduction	8
2.2 Archaeological Evaluation	8
2.3 Topsoil Strip, Map and Record	9
2.4 Watching Brief	9
2.5 Finds Assessment	10
2.6 Palaeoenvironmental Assessment	10
2.7 Archive	11
3. BACKGROUND.....	12
3.1 Historical and Archaeological Background	12
3.2 Prehistoric Periods	12
3.3 Historic Periods	14
4. FURTHER DOCUMENTARY RESEARCH	18
4.1 Introduction	18
4.2 Goetre-isaf Landholding	18
4.3 Goetre-uchaf Landholding	20
4.4 Goetre Bach or Cae'r Goetref Landholding	22
5. FIELDWORK RESULTS	24
5.1 Introduction	24
5.2 Fieldwork Results: Evaluation Phase 1	24
5.3 Fieldwork Results (Evaluation Phase 2)	30
5.4 Results of the Watching Brief	32

5.5	Finds	33
5.6	Palaeoenvironmental Results	34
5.7	Radiocarbon Assay	35
6.	DISCUSSION	37
6.1	Introduction	37
6.2	The Prehistoric Period	37
6.3	Medieval and Later Features	38
6.4	Conclusion	40
7.	BIBLIOGRAPHY	42
7.1	Primary and Cartographic Sources	42
7.2	Secondary Sources	43
8.	ILLUSTRATIONS	46
8.1	Figures	46
8.2	Plates	46
APPENDIX 1: PROJECT BRIEF		48
APPENDIX 2: PROJECT DESIGN FOR THE ARCHAEOLOGICAL EVALUATION.....		55
APPENDIX 3: PROJECT DESIGN FOR THE WATCHING BRIEF		64
APPENDIX 4: SUMMARY OF TEST-PIT CONTEXTS.....		69
APPENDIX 5: SUMMARY OF EVALUATION AND STRIP AND RECORD CONTEXTS.....		72
APPENDIX 6: SUMMARY FINDS TABLE		75

SUMMARY

Redrow Homes commissioned Oxford Archaeology North (OA North) to undertake an archaeological investigation to inform a planning application for residential development occupying nearly 14ha of agricultural land off Penrhos Road, Bangor, Gwynedd (NGR centred SH 55488 69830). The site is known to have high potential for the presence of buried archaeological remains, with prehistoric barrows known in the vicinity, one of which is on the site and is a scheduled monument (Cn 376; PRN 22), together with querns, a probable burnt mound, and two intercutting ditches discovered in the area.

The investigation was carried out in a phased manner, with each stage informing the next, and in consultation with Gwynedd Archaeological Planning Service (GAPS), in accordance with their brief. The first stage was undertaken during July and August 2012, and included a desk-based assessment and geophysical survey to establish the archaeological resource and its significance across the site, together with a watching brief maintained during a Phase 1 geotechnical site investigation (SI) of 50 test pits. This initial stage of work revealed 43 known heritage assets within the study area, including a group of possible barrows identified from aerial photographic survey. The geophysical survey revealed a complexity of anomalies, including clusters of circular features, and at least two distinct field systems. During the watching brief, a pit containing burnt stone and charcoal was discovered, and material from the features was retained and submitted for radiocarbon assay. The presence of two barrows and a burnt mound, plus place-name and documentary evidence, were also indicators of the likely presence of previously unidentified sub-surface remains of archaeological interest within the proposed development area.

The results of this first stage informed the requirements for a subsequent second stage, in the form of evaluation trial trenching. This was divided into two phases at the request of GAPS: Phase 1 targeted features of potentially high archaeological significance identified in the initial assessment; Phase 2 comprised a more general sampling across the site.

GAPS also requested that additional documentary research was required. During the initial assessment the Bangor University archives were closed, which prevented research on the farm that had originally been central to the site, Goetre-uchaf. In addition, the research was also intended to shed light on the cause of the circular features revealed during the geophysical survey.

The evaluation trenching was undertaken between December 2012 and January 2013, whilst a second phase of watching brief was also maintained on an additional geotechnical site investigation in November 2012. The post-excavation process also included submission of the material found during the first phase of watching brief in July-August 2012 for radiocarbon assay.

The investigation has successfully demonstrated that archaeological remains are present on the site of the proposed development. The earliest evidence obtained is from the early Mesolithic (7063-6826cal BC), along with evidence of Neolithic activity recovered from two pits in the fields to the east and west of the former farmstead, both of which were dated to the Mid Neolithic, between 3495-3380cal BC. There is considerably more evidence for Bronze Age activity within the proposed development site, with one definite and two possible Bronze Age barrows having been identified: the scheduled Goetre-uchaf barrow (Cn 376; PRN 22); a second damaged

mound which was associated with an undated flint scraper (identified as Site 7 in the initial desk-based assessment), and a third possible barrow situated centrally within the site. These would have formed part of a prominent group of barrows along the north-east/south-west-aligned ridge within the site. The conspicuous presence of burial mounds within the local area is suggested by the place-name Penrhos-Garnedd, which appears to describe ‘the cairns at the head of the moor’, whilst it is reported that further barrows once lay immediately to the north-east of the site, in the area now occupied by the hospital. Furthermore, sub-surface remains of a burnt mound of possible Bronze Age date were found during a previous watching brief within the northern part of the proposed development area.

The landuse of the area during the Iron Age is unclear, and there is no evidence of Roman activity from the site. However, early medieval activity was indicated from a radiocarbon date of carbonised oak from a pit in the west field that produced a date of 877-996calAD. Although there is no equivocal evidence that this date can be related to the earliest field system identified in the geophysical survey, it is not entirely out of the question. What is clear is that the earliest field system is not related to the latest field systems, which probably date to the post-medieval period and after, when the character of the local area was dominated by agriculture. The farmstead that once stood in the centre of the site until its recent demolition was named Goetre-uchaf, with the ‘goetre’ (coed-tre) element meaning ‘a home in a wood’. This might indicate that the farmstead was established within a clearing in a largely wooded area and could, therefore, have originated early enough to pre-date the widespread use of the study area for agriculture. However, it is not currently known at what date the study area was cleared of tree cover. The earliest documentary evidence indicates that the farm was already in existence by 1547, although no evidence of a farmstead earlier than the nineteenth century was recorded during the programme of trenching.

ACKNOWLEDGEMENTS

OA North would like to thank Paul Fox of Redrow Homes for commissioning the project and for his logistical help regarding the site provisions. OA North would also like to thank the staff at Caernarvon Record Office, Gwynedd Historic Environment Record (HER), and the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW). Thanks are also due to Jenny Emmett and Ashley Batten of Gwynedd Archaeological Planning Service, Alan Jones from Geosolve for details of the geotechnical site investigations, and to Jones Brothers for supplying the plant.

The archaeological evaluation was undertaken by Jeremy Bradley and Becky Wegiel, assisted by Mike Birtles, Phil Cooke, Paul Dunn and Jon Onraet. The charcoal was analysed by Denise Druce, whilst the environmental assessment was undertaken by Elizabeth Huckerby. Dating of the charcoal was undertaken by facilities at SUERC. Vickie Jamieson carried out the watching brief on the Phase 2 geotechnical test pits. The further documentary research was undertaken Pete Schofield. Emily Mercer managed the project and edited the report, which was illustrated by Mark Tidmarsh.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 Redrow Homes commissioned Oxford Archaeology North (OA North) to undertake an archaeological investigation to inform a planning application for residential development occupying nearly 14ha of agricultural land off Penrhos Road, Bangor, Gwynedd. The site was known to have a high potential for the presence of buried archaeological remains, with prehistoric barrows known in the vicinity, one of which is on the site and is a scheduled monument (Cn 376; PRN 22), together with querns, a probable burnt mound, and two intercutting ditches discovered in the area.
- 1.1.2 The investigation was carried out in a phased manner, with each stage informing the next, and in consultation with Gwynedd Archaeological Planning Service (GAPS) in accordance with their brief (*Appendix 1*). The first stage was undertaken during July and August 2012, and included a desk-based assessment and geophysical survey (OA North 2012) in order to establish the archaeological resource and its significance across the site. A watching brief was also maintained during a geotechnical site investigation (SI). This initial phase of work revealed 43 known heritage assets within the study area, including a group of possible barrows identified from aerial photographic survey. The geophysical survey revealed a complexity of anomalies, including clusters of circular features, and at least two distinct field systems. During the watching brief, a pit containing burnt stone and charcoal was discovered, and material from the features was retained and submitted for radiocarbon assay (see *Section 5.8*). The presence of two barrows and a burnt mound, plus place-name and documentary evidence (see *Section 3.2.6 and 3.3.9*), were also indicators of the likely presence of previously unidentified sub-surface remains of archaeological interest within the proposed development area.
- 1.1.3 The results of this first stage informed the requirements for a subsequent second stage, in the form of evaluation trial trenching. This was divided into two phases at the request of GAPS: Phase 1 targeted features of potentially high archaeological significance identified in the assessment; Phase 2 comprised a more general sampling across the site (Fig 2; *Appendices 2 and 3*).
- 1.1.4 GAPS also requested that additional documentary research was required. During the initial assessment the Bangor University archives could not be consulted as they were closed for refurbishment, which prevented research on the farm that had originally stood on the site, Goetre-uchaf. In addition, the research was also intended to shed light on the cause of the circular features revealed during the geophysical survey.
- 1.1.5 The following report combines the results for the evaluation trenching, undertaken between December 2012 and January 2013, as well as those of the second phase of watching brief maintained during an additional geotechnical site investigation in November 2012. The report also includes the results of the radiocarbon assay retrieved from the sample obtained during the first phase of watching brief in July-August 2012. The report briefly sets out the results and assesses the significance of, and impact upon, the heritage resource.

1.2 LOCATION, TOPOGRAPHY AND GEOLOGY

- 1.2.1 The proposed development site occupies part of the south-facing northern slope and plateau of the Nant y Garth stream valley at Penrhos Garnedd, to the south-west of Bangor, Gwynedd (NGR centred SH 55488 69830; Fig 1). As part of the site occupies a slope, the height across the area varies between approximately 55m and 90m (aOD). The proposed development site consists of agricultural fields lying between the A55 around the southern perimeter, and residential development to the north-west, and Gwynedd Hospital, to the north-east.
- 1.2.2 The underlying bedrock consists of interbedded sandstone and conglomerate, to the east, and felsic tuff, to the west. This is overlain by glacial till (British Geological Survey 2012). Borehole logs produced in 1971, in association with investigations relating to the Bangor Bypass at the south-western side of the proposed development site, show that bedrock was encountered at 1.32m (*ibid*). Boreholes undertaken in 1973, at the southern side of the site, showed that bedrock was encountered at 0.65m and was overlain by 0.27m of brown silty-clay, which was overlain by 0.38m of gravel-rich topsoil (*ibid*).

2. METHODOLOGY

2.1 INTRODUCTION

- 2.1.1 The project designs for the evaluation, comprising trenching and open-area stripping, and watching brief (*Appendices 2 and 3*), were prepared in accordance with the project brief (*Appendix 1*), and were adhered to during the relevant stages of the project. Both of the project designs were prepared initially for the first phases of each element, for the monitoring of geotechnical work in July-August 2012, and for the first phase of trial trenching in December 2012, but with approval from GAPS the same methodology was employed for both elements of work in the second phases.
- 2.1.2 Variations from the original scheme of works involved the realignment of Trench 6 to avoid the scheduled area of the barrow, the position of which on site is offset to the north and west from the coordinates provided in the entry for the scheduled monument. Trench 3 was also shortened slightly to avoid live services. Consultation during a site visit with GAPS also led to an extension to Trench 4, and an additional trench (Trench 10) which was positioned to examine one of the circular anomalies to the south-east of the strip and record area M10. Throughout, close liaison was maintained with GAPS, and all work was consistent with the relevant Institute for Archaeologists (IfA) and English Heritage (EH) guidelines (IfA 2008a, 2008b, 2012; EH 2006).

2.2 ARCHAEOLOGICAL EVALUATION

- 2.2.1 Seven trenches (Trenches 1-7) were initially outlined for evaluation Phase 1, which targeted features of potential high archaeological significance identified in the assessment (OA North 2012; Fig 2). Trenches 1, 3, 5-7 measured 20m x 2m, and Trenches 2 and 4 measured 30m x 2m. The additional trench, Trench 10, measured 6.4m x 2m. In addition, there were two areas of open-area stripping measuring approximately 40m x 20m (M12) and 15m x 15m (M10).
- 2.2.2 Phase 2 comprised a more general sampling across the site. Ten trenches (Trench 11-20) of various configurations (mainly 20-30m in length and 2m width, with two L-shaped trenches) were excavated, and contained within the area to the west of the former green lane to the now demolished farmstead (Fig 2). Again, the position of some of these trenches was guided by the geophysical survey anomalies but also, combined with Phase 1 trenching, aimed to provide an even spread of evaluation investigation across the proposed site. Two of the trenches, 19 and 20, were positioned within the area of the former farmstead to examine whether there was any evidence of early occupation, the earliest reference obtained is 1547 for the lease of an existing farmstead at Goetre-uchaf (see *Section 4.1*). However, despite Trench 20 being positioned where the farmstead had seen to reside from historic mapping, no features associated with structural remains were observed. Therefore, in consultation with GAPS, Trench 20 was extended to the north-east, with extensions also placed to the north-west and south-east to form a cross shape in

an attempt to locate and retrieve information of the, now demolished, farm buildings.

- 2.2.3 The overburden was removed by machine (fitted with a toothless ditching bucket) under archaeological supervision, down to the surface of the first significant archaeological or natural deposit, whichever was encountered first, with all features of archaeological interest being investigated and recorded.
- 2.2.4 The trenches were located by the use of differential GPS, based on a site grid related to the national grid obtained from the client base mapping. Altitude information was established with respect to Ordnance Survey Datum.
- 2.2.3 The recording of all features of archaeological interest was achieved by the generation of a comprehensive archive, in accordance with the standard and guidance for archaeological evaluations and excavations produced by the Institute for Archaeologists (2009a; 2009b). All features and deposits were recorded stratigraphically on OA North *pro-forma* sheets, using a system adapted from that used by the Centre for Archaeology Service of English Heritage, with suitable accompanying graphic documentation (surveyed plans, elevations and sections at appropriate scales).

2.3 TOPSOIL STRIP, MAP AND RECORD

- 2.3.1 Two areas were identified in order to investigate the clusters of circular anomalies seen in the geophysical survey, M10 and M12 (OA North 2012; Fig 2). The initial phase of work consisted of the topsoil stripping and subsequent planning of the area, followed by the investigation and recording of features in line with the general trenching methodology (*Section 2.2*, above). The two areas, measuring 15m x 15m (M10) and 40m x 20m (M12), were stripped of their topsoil and any other subsoil overburden using a 16 tonne 360° excavator or similar with a toothless bucket to expose any archaeological remains with the intention of planning and evaluating the nature, date, extent, level of preservation and significance of the remains. Following consultation with GAPS, however, so few features were revealed that they were rapidly dealt with, by excavating and recording alongside the evaluation trenches.

2.4 WATCHING BRIEF

- 2.4.1 The second phase watching brief was undertaken in November 2012, and comprised a programme of field observation that recorded accurately the location, extent, and character of surviving archaeological features and deposits within the excavations for geotechnical site investigations.
- 2.4.2 In total, 43 geotechnical soak-a-way pits were monitored during their excavation (Fig 3), during which close liaison was maintained with the geotechnical contractor at all times, and all works were monitored by an experienced archaeologist.
- 2.4.3 The test pits were excavated by a mechanical excavator that was fitted with a wide toothed ditching bucket, which, by its nature inhibits the observation of

more subtle archaeological features, such as pits and ditches. The programme of field observation comprised the systematic examination, characterisation and recording of any subsoil horizons exposed during the course of the excavation. Removed spoil was systematically searched for artefacts and other dating evidence. Recording was by means of OA North's standard system, with *pro forma* record sheets and supporting registers and indices. A fully indexed photographic record in digital format was maintained.

2.5 FINDS ASSESSMENT

- 2.5.1 The recovery of finds and sampling programmes were carried out in accordance with best practice (IfA 2008b), and subject to expert advice in order to minimise deterioration. All artefacts recovered from the evaluation trenches were retained for assessment.

2.6 PALAEOENVIRONMENTAL ASSESSMENT

- 2.6.1 Six bulk samples were retrieved from ditches **103**, **605** and **905**, and pits **408**, **808** and **812**, whilst a single bulk environmental sample, of less than two litres in volume, was taken from a burnt pit fill identified in TP6 (**TP603**) during the watching brief undertaken during July and August 2012 (OA North 2012). The purpose for retrieving the samples was to provide information regarding the environment and economy of the site, and material suitable for radiocarbon assay.
- 2.6.2 Between 30 to 20 litres in volume, for the six bulk samples, and the single sample from TP6 (**TP603**) were hand-floated, and the flots were collected on a 250 micron mesh and air-dried. The flots were scanned with a Leitz/Wild stereo microscope, plant material was recorded on a scale of 1-4 where 1 is five items or less, and 4 is more than 100 items, and provisionally identified. The matrix components were also noted as present (+) or frequent (++), and the residues were examined.
- 2.6.3 Charcoal fragments greater than 2mm were scanned under a binocular microscope at X20 magnification to assess overall preservation and diversity. Subsequently, representative fragments were viewed at up to X40 to confirm the range of species/types present and the type of wood present, i.e. roundwood, heartwood, or sapwood.
- 2.6.4 The data were recorded on a *pro forma* sheet, as part of the site archive. The data are shown in Table 2 (*Section 5.6*) and are included in a brief assessment report of the environmental remains, summarising the main findings and outlining future recommendations. Plant nomenclature follows Stace (1997).
- 2.6.5 A total of five samples of the charcoal from pits **408**, **808** and **812**, ditch **904** and TP6, were submitted for radiocarbon assay at the Scottish Universities Environmental Research Centre Radiocarbon Dating Laboratory (*see Section 5.7* for results).

2.7 ARCHIVE

- 2.7.1 A full archive has been produced to a professional standard in accordance with current English Heritage guidelines (English Heritage 2006). Copies of the report will be sent to the Historic Environment Record in Bangor, and to the Development Control Officer at Gwynedd Archaeological Planning Service (GAPS).

3. BACKGROUND

3.1 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 3.1.1 **Introduction:** the following section is a précis of the historical and archaeological background presented in the initial assessment (OA North 2012), which should be consulted for more detail, and includes reference to the gazetteer sites from the assessment (shown in bold) The purpose of the following section is to place the findings of the evaluation within context. A more detailed investigation of the site during the post-medieval period can be found in *Section 4*.

Period	Date Range
Mesolithic	10,000 – 4000 BC
Neolithic	4000 – 2400 BC
Bronze Age	2400 – 700 BC
Iron Age	700 BC – AD 43
Romano-British	AD 43 – AD 410
Early Medieval	AD 410 – AD 1066
Late Medieval	AD 1066 – AD 1540
Post-medieval	AD 1540 – c 1750
Industrial Period	c AD 1750 – 1914
Modern	Post-1914

Table 1: Summary of British archaeological periods and date ranges

3.2 PREHISTORIC PERIODS

- 3.2.1 **Mesolithic Periods:** evidence of Mesolithic activity in Gwynedd consists of scatters of flint tools found on coastal cliff tops on the Llyn peninsula and in Anglesey, where a Mesolithic camp was excavated at Aberffraw (*op cit*, 5). Human activity at this time is likely of have consisted of small and mobile bands of hunters moving between inland and coastal areas to exploit varying and seasonal resources (*op cit*, 4). Evidence of Mesolithic activity has been identified further inland, such as flint scatters being found to the east of the study area, in the upland moorlands of Mynydd Hiraethog, or the Denbigh Moors (Barker and Leighton 2011, 21), and hearths having been excavated in the Brenig Valley (Allen 1993, 22). Flint scatters were also found to the north-east of the study area, at Landygai (Kenney 2008, 14).
- 3.2.2 **Neolithic Period:** the Neolithic period is often considered to mark the transition from subsistence strategies based on transient hunting, fishing, and

gathering to the adoption of more settled agricultural communities and the subsequent development of funerary architecture. However, this transition need not preclude the continued exploitation of wild resources or mobility within the landscape that were typical of the preceding Mesolithic period. The most conspicuous sites of Neolithic date in Gwynedd and the wider locale are megalithic tombs, with numerous examples having been identified in Anglesey and the uplands in the vicinity of Penmaenmawr and Llandudno (Lynch 1995, 7-30; GAT 2002a, 16). Most of these sites occupy marginal upland areas lying between 200m and 350m (aOD) and an example lies approximately 4.5km to the south-east of the study area at Sling (GAT 2002a, 14; 16).

- 3.2.3 Although not as conspicuous as megalithic architecture, and more prone to damage and disturbance, areas of farming and associated settlements are likely to have lain in the vicinity of the megalithic tombs (*op cit*, 15). Flat cist burials, which are, once more, less conspicuous sites than upstanding tombs are also known from the wider area, with one example having been identified to the north-east of Bangor, at Pen y bryn (*op cit*, 16). A large Neolithic complex, including henges, a cursus, groups of pits, and settlement evidence, including rectangular buildings, lies approximately 3km to the north-east of the study area, at Landygai (*op cit*, 17-18; Kenney 2008).
- 3.2.4 **Bronze Age:** similarly to evidence for Neolithic activity, funerary and ritual monuments are the most conspicuous and easily recognised sites of Bronze Age date within Gwynedd, with settlement sites being more difficult to identify. During the Bronze Age, there was an expansion of activity into upland areas, with numerous stone-walled roundhouses, field systems, burial mounds, cairns, and stone circles being evident in these areas (Lynch 1995, 31-2). However, numerous barrows and cairns have also been identified in lower-lying areas, below 100m (aOD) (GAT 2002a, 20). Indeed, 3km to the north-east of the study area, at Landygai, two distinct programmes of archaeological investigation have revealed the presence of extensive sub-surface Bronze Age remains occupying land between 25m and 65m (aOD) (Kenney 2008, 10-11; 60-70). These remains include burnt mounds, pits, earth ovens, a round barrow, and a putative burial cairn (*ibid*). A standing stone of possible Bronze Age date lies within 2km to the south-west of the study area, at Cadair Elwa (PRN 631).
- 3.2.5 Close to the study area, an undated flint scraper (HER PRN3737) was found near to Hafod Cottage. A circular cropmark (HER PRN59), which was noted from aerial photographs to the south-east of Tyddan Bach, has not been closely dated but might be of prehistoric origin. A large quantity of quern stones (Site 37) was also found near Perfeddgoed by a local resident who built them into the wall of a cottage, which no longer appears to be extant. However, the date of origin of the quern stones is not known.
- 3.2.6 There is considerable evidence for Bronze Age activity within the proposed development site, with the Bronze Age Goetre-uchaf barrow (Site 8), which is also a scheduled monument (CN 376), and a possible barrow (Site 7) associated with an undated flint scraper (Site 36). This mound (Site 7) has been damaged by quarrying and, in 1970, the Ordnance Survey (OS) inspector

suggested that bedrock rose to within a few inches of the surface of the mound and that it was, therefore, of natural origin, but this has never actually been investigated. The conspicuous presence of burial mounds within the local area is suggested by the place-name Penrhos-Garnedd, which appears to describe 'the cairns at the head of the moor' (eg Davies 2012, 17; 45). The sub-surface remains of a burnt mound of possible Bronze Age date (Site 39) were found during a watching brief within the northern part of the proposed development area (GAT 2010, 6), and was seen in the geophysical survey results (OA North 2012). This lay adjacent to a stream channel and an area of saturated ground, which is often a characteristic of the siting of burnt mounds (Barfield and Hodder 1987; OA North 2009, 31-33).

- 3.2.7 **Iron Age:** there was a general degree of cultural continuity between the late Bronze Age and the early Iron Age, although additional influences, such as the use of iron, were introduced. Agriculture continued as the primary means of subsistence, and was practised on the fringes of the uplands, and in low-lying areas, such as Landygai (Lynch and Carr 1986, 13). However, the most conspicuous sites of this period comprise the numerous hillforts (*op cit*, 14), which retain a high degree of visibility in the landscape as a result of their enclosure earthworks, the remains of stone-walled roundhouses, and a good degree of survival due to their hill top locations. Although Iron Age funerary and ritual monuments are not known from Gwynedd, large quantities of metalwork, much of which was associated with warfare, appear to have been deposited as votive offerings at the lake of Llyn Cerrig Bach, on Anglesey (Lynch and Carr 1986, 14; Lynch 1995, 65).
- 3.2.8 Lowland Iron Age settlement sites have been identified in Gwynedd, including an extensive group of stone-walled roundhouses at Ty Mawr, on Holyhead (Lynch 1995, 84-5). There are similarities between the style of Iron Age settlements and those of the preceding Bronze Age and the later Romano-British period, with many sites being in continuous occupation throughout the latter periods (*op cit*, 63-4). Therefore, caution should be exercised when dating sites that have not been subject to excavation and close dating.
- 3.2.9 Sub-surface remains of Iron Age date were found at Landygai and consisted of an Early Iron Age roundhouse close to an area of possibly associated metalworking debris (Kenney 2008, 70). A late Iron Age structure associated with an industrial or cooking area was also identified, which was succeeded by a small enclosed, or partially enclosed, settlement comprising one or two roundhouses (*op cit*, 100-2). No remains of Iron Age date have been identified within the study area, although a Romano-British hut circle settlement (HER PRN792) lies to the south-east of the area, and several undated quern stones have been found (Sites 37 and PRN82).

3.3 HISTORIC PERIODS

- 3.3.1 **Romano-British Period:** following the Roman military invasion of North West Wales between c AD 60 and the completion of the conquest in AD 78, various auxiliary forts were established, with the most significant fort being *Segontium*, at Caernarvon (Lynch and Carr 1986, 14-16; Lynch 1995, 98-9).

Although civilian settlements developed in the vicinity of military establishments, no Roman towns were established in North Wales. Settlement appears to have been largely rural and, between the second and fourth centuries AD, large farmsteads associated with intensified agriculture developed that might be indicative of a period of relative prosperity (Lynch and Carr 1986, 16; Lynch 1995, 98-9). The Iron Age tradition of roundhouses and a lack of formality of settlement layout continued to characterise prosperous rural settlements in North Wales, in contrast to the adoption of villas elsewhere in Britain (Lynch 1995, 99).

- 3.3.2 A large enclosed agricultural settlement with several roundhouses developed at Landygai, within an area that appears to have been in continuous use as a farmstead from the Late Iron Age (Kenney 2008, 100-2). A smaller settlement consisting of an enclosed roundhouse and an associated field system (HER PRN29494, HER PRN34) of apparent Romano-British date (HER PRN792) has also been identified to the south of the study area. An undated quern stone was also found in this area (HER PRN82).
- 3.3.3 **Early Medieval Period:** the early medieval period in North Wales was characterised by the development of new kingdoms following the decline of the Roman Empire during the fifth century (Lynch 1995, 111). Between the fifth and eleventh centuries, Gwynedd engaged in violent struggles with neighbouring kingdoms, including Powys and Deheubarth, the powerful Saxon kingdoms of Mercia and Northumbria, and Viking raiders in the ninth and tenth centuries. During this time, established centres of power and defence, such as hillforts and Roman forts, are likely to have been utilised as bases (*ibid*). Romano-British farmsteads are also likely to have continued in use into the early medieval period, although a lack of material culture, such as pottery, from this period can make the recognition of such phases of occupation challenging. However, radiocarbon dating has demonstrated the continued use of settlements at Ty Mawr, on Holyhead, and Greanog, near Llanllyfni (*op cit*, 112).
- 3.3.4 Monasteries flourished during this period and fragments of stone crosses from Penmon and Bangor attest to the former presence of ecclesiastic monuments in the wider area (*op cit*, 114). An early monastery was established at Bangor, although no buildings of this period survive as standing remains (*ibid*). An early medieval smithing site was identified at Landygai and dated to between AD 480-650 and AD 600-760 (Kenney 2008, 107) and a cemetery of early medieval date was excavated at Landygai in 1966-7 (Lynch and Musson 2004).
- 3.3.5 **Medieval Period:** Gwynedd represented one of the most powerful kingdoms in Wales into the earlier part of the medieval period, and was involved in successive phases of English invasion during the eleventh and twelfth centuries (Lynch and Carr 1986, 19-20). In 1164-5 Owain Gwynedd was accepted as the leader of all of the Welsh rulers and Gwynedd became the dominant kingdom in Wales (*ibid*). This political stability fractured following Owain's death in 1170, but Llewelyn eventually became overlord over all of the Welsh kingdoms from Gwynedd in 1216 (*ibid*), and by 1301, after the

conquest of Wales by Edward I in the 1270s, the whole of Wales was held as a principality granted to Edward, the son of Edward I (*op cit*, 24).

- 3.3.6 Between 1400 and 1405 an unsuccessful revolt occurred in North Wales against Henry IV and the submission of Gwilym ap Gruffydd ap Gwilym of Gwynedd in 1405 allowed him to acquire large tracts of land and to found the Penrhyn estate (*op cit*, 25), within which the proposed development area lies. Another major local landowner was the cathedral at Bangor, which was established by the early twelfth century and was one of the most important religious centres in Gwynedd (*op cit*, 26). The presence of a town was recorded in 1211 and a close relationship existed with the ruling dynasties of Gwynedd (*ibid*). The Vaynol (*Y Faenol*) estate, which lay to the south-west of the study area, was established on land formerly owned by the bishops of Bangor, and comprised a park surrounding a sixteenth-century hall with twelfth-century foundations (GAT 2002b). These large estates dominated the environs of the study area and lay within the larger medieval territorial unit of the *Cantref* of Arfon, which comprised nine *maenolau*, or lordships (GAT 2003, 3-4). The study area lay within the maenol of Bangor, part of the hundred of Isgorvai, and the maenol was the lordship of the Bishop of Bangor (Bassett and Davies 1977, 68). All of these territorial units lay within the overarching county of Caernarvonshire (*op cit*, 87). The Pentir place-name was first recorded in 1306-7 and means 'headland' (Owen and Morgan 2007), although this is likely to reflect the topographic context of the village of Pentir, rather than the parish.
- 3.3.7 In addition to medieval remains associated with ecclesiastic institutions, such as Bangor Cathedral, and halls at the centre of medieval estates, such as Vaynol Hall, remains of agricultural features have also been identified in the wider area. For example, corn drying kilns dating to between the early eleventh and early thirteenth centuries were found at Landygai, and these may have been associated with remnant medieval field systems (Kenney 2008, 109-11). Earthworks suggestive of medieval open field ridge and furrow agriculture have also been identified within the southern part of Vaynol Park and numerous smallholdings and tenements of likely medieval origin have been identified in and around the extents of the park (GAT 2003, 4). Strip fields indicative of medieval field systems have also been identified in Vaynol Park (PRN 12145). With no large settlements within the immediate vicinity of the study area, it is likely that habitation patterns consisted of dispersed farmsteads during the medieval period.
- 3.3.8 **Post-medieval and Industrial Periods:** the study area lies within what was part of the parish of Pentir during the earlier post-medieval period but, by 1657, had been merged with Bangor (Lewis 1849, 308-18). The Penrhyn estate was owned by the Pennant family from 1765 and was one of the wealthiest estates in Britain (CADW 2012). Maps produced during surveys of the neighbouring Vaynol estate in 1777 and 1832 (Vaynol MSS 4056; 4067) showed that the study area lay within land that fell outside of the Vaynol estate, but within the Penrhyn estate. This included an area marked as Goedtre Farm on the map of 1832 (Vaynol MSS 4067), which was indicated as being in the possession of GHD Pennant.

- 3.3.9 Numerous episodes of the enclosure of common land took place in Caernarvonshire between 1802 and 1850, including the enclosure of land in Penrhos in 1811 (Bassett and Davies 1977, 148). By the time of the production of the Bangor tithe maps of 1840-1 (NLW 1165, see *Section 4*, below), the study area and surrounding land was characterised by dispersed farms set within enclosed agricultural field systems. However, the field systems within the proposed development area did not exhibit the uniform geometric character of many fields that were created as a result of nineteenth-century enclosure and appear to have developed more gradually, as a process of the sub-division of larger sub-ovoid or sub-rectangular enclosures. The fields surrounding Goetre-isaf and to the south of Goetre-uchaf, which occupied the slopes of the Nant y Garth stream valley, appeared particularly irregular and likely to have developed as the result of *ad hoc* processes of sub-division. The land occupying the plateau to the north of the farms, along the southern side of the main road through Penrhos, may have been subject to the more formal laying out of planned field systems, as it appeared more regular and ordered. The tithe apportionment showed Goetre-uchaf to have been owned by Reverend Hugh Davies Owen, and occupied by William Williams in 1840-1, and to have comprised a mixture of meadow, pasture, arable land, and woodland. Goetre-isaf was owned by Lord George Boston and occupied by Thomas Owen, and comprised a mixture of pasture, arable, and meadow. The farmstead names of Goetre-uchaf and Goetre-isaf both incorporate the ‘goetre’ (coed-tre) element, meaning ‘a home in a wood’ (Davies 2012, 30). This might indicate that at least one of the farmsteads was established within a clearing in a largely wooded area and could, therefore, have originated early enough to pre-date the widespread use of the study area for agriculture. However, it is not currently known at what date the study area was cleared. The ‘uchaf’ and ‘isaf’ elements are topographic indicators for ‘upper’ and ‘lower’, respectively, which correspond with the location of Goetre-uchaf at the top of the hill slope, and Goetre-isaf further down the slope.
- 3.3.10 Few changes occurred within the immediate environs of the study area during the first half of the twentieth century, although ribbon development gradually accumulated along Penrhos Road, to the north of the study area (OS 1914; 1970-2). By 1970-2, extensive housing developments had been constructed to the north of the study area, adjacent to Penrhos Road. Gwynedd Hospital was established by 1983 (OS 1983) and one of the most conspicuous changes to the area was the opening of the Bangor bypass portion of the A55 during the 1980s (OS 1987).

4. FURTHER DOCUMENTARY RESEARCH

4.1 INTRODUCTION

- 4.1.1 The initial desk-based assessment (OA North 2012) revealed relatively little about the complex history of the three farmed landholdings present in the study area, namely Goetre-uchaf, Goetre-isaf and Goetre Bach, particularly their establishment. The proposed development site was thought to have once been part of the Penrhyn Estate, for which the archives are held at the Bangor University archives. Unfortunately, this repository had been closed for renovation during the initial phase of the project but reopened in November 2012. Therefore, as part of the trial trench investigation, the archives were consulted in order to obtain additional information, particularly regarding the Goetre-uchaf farm, as this was being targeted with trial trenches.
- 4.1.2 The information gathered for each of the three individual holding is summarised below (*Sections 4.2-4.4*). The Caernarvonshire Record Office was also revisited in order to interrogate land tax records.
- 4.1.3 In summary, all three landholdings/tenements were within Treborth township of Bangor Parish in the Land Tax Assessments. With reference to the modern farms and their field distribution in the study area, the majority of the north side of the study area on both sides of the green lane belonged to Goetre-uchaf (Fig 4; Fields 1-4, 8 and 11), whilst land belonging to Goetre-isaf consisted of the eastern edge of the study area (Fig 4; Fields 12-14), and Goetre Bach had the steeply sloping fields south of Goetre-uchaf farmhouse (Fig 4; Fields 6 and 9-10).
- 4.1.4 The earliest reference to any landholding within the present study area was a lease for 99 years of glebe lands at Goetre-uchaf, dated 1547 (*Section 4.3.1*). It can be inferred that by at least this date there were the two Isaf and Uchaf farms in existence.

4.2 GOETRE-ISAF LANDHOLDING

- 4.2.1 ***Seventeenth-Eighteenth Century:*** the landholding was held as part of the Porthamel Estate by the Lloyd family of Lligwy. The estate was broken up by Thomas Lloyd of Llanidan, Anglesey in the mid-eighteenth century and came into the possession of Sir William Irby, 2nd Baronet of Whapload and Boston.

1746 A lease and release and then bargain and sale dated 10th and 11th March 1746 between Thomas Lloyd and the Honourable Sir William Irby (Lord Boston) passed, amongst other things, 'a messuage and farm called Goytree alias Goytry, in the parish of Bangor alias Maynol Bangor' (LLIG/1203-1204, 1205)

- 4.2.2 The land henceforth became part of the Lligwy Estate held by the Irby family.

1773 Maps and Survey of an Estate in Caernarvonshire & Anglesey belonging to the Right Honourable Lord Boston. Includes a map of 'Goytre' farmstead (Plate 1; LLIG/1409)

- 4.2.3 The 1773 map depicted the landholding of 'Goytre' as possibly being two subdivided farmed holdings, with a farmhouse and four unnamed fields (Fields 1-5, Fig 4), which equate to the site of the current Goetre-isaf farm on the south-eastern edge of the study area. A further building, possibly a farmhouse but more likely a barn, is depicted to the south-east and is surrounded by five fields, called cae'r Sarn (Field 6, Fig 4), caeia ysgubor (Fields 7 and 8, Fig 4), allt Eithin (Field 9, Fig 4), cae'r ty (Field 10, Fig 4) and cae Samuel (Field 11, Fig 4). In addition, there is a detached field at distance from the farm, Bryn drain (Field 12, Fig 4). The farm/barn was demolished and overlain by the main road by the time of the first edition OS mapping. The overall holding contained 35a, 3r, 24p of arable and 1a, 3r, 38p of meadow land. The map also describes the land to the north-west of the farm (currently part of the Goetre-uchaf holding, east of the farmhouse) as being held by Sir Watkins Williams (Fig 4; at least Field 11). The land to the west of the farm (at Goetre Bach) was held by the Reverend Mr Dean. The apportionment has been annotated in pencil to mark that the farm was sold in 1859, or thereabouts, to the Full Tenants.



Plate 1: Estate map and survey of 'Goytre', dated 1773

1783 Maps of the lands belonging to the Lligwy Estate in the following parishes, Llanddeiniolen, Llanfairisgaer & Bangor (Co.

Caernarvonshire), c 1783 (by Isaac Lenny 1782): A straight copy of the 1773 estate map (LL1G/1430).

- 4.2.4 The estate map and survey of 1783 (Plate 2) essentially remained identical to that dated 1773. The only additions being several boundaries surrounding the farm are depicted as fenced, and pencil annotations depict the main road crossing the landholding adjacent to the farm/barn.

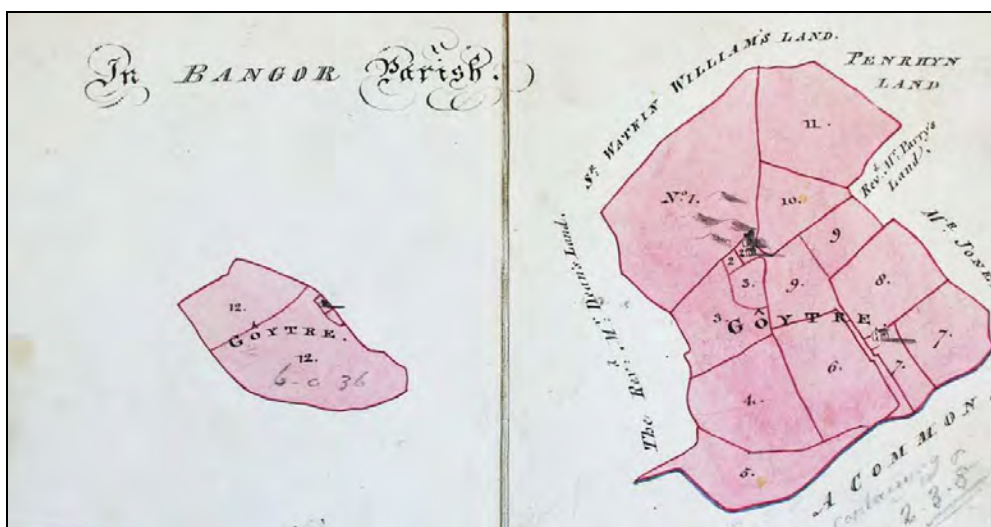


Plate 2: Estate map and survey of 'Goytre', dated 1783

- 4.2.5 Land tax records denote the following:

1774 Land Tax assessments record the holding as 'Goydre', the holding was presumably the original Goetre farmholding, as after this date it has the appellation 'isaf' added in these records.

1774-1830 Land Tax assessments show the owner as Lord Boston (Lligwy Estate). The tenants were: William Owen 1774-1802, Ellen Griffith(s) 1803-15, and Thomas Owen 1815-30.

1839 Valuation of the City and Parish of Bangor – The field names of 'Goetref Issa' farmstead are: Rallt Crippa 1a,3r,14p, Cae Sarn Rob 3a.1r.19p, and Cae Maes Samuel 4a. 1r.37p. The owner was Lord Boston, and occupier Thomas Owen (BMSS/20178).

1840 The tithe map and apportionment record the owner as George - Lord Boston, and the tenant was Thomas Owen (BMSS/20188).

1859 Landholding sold, probably to the sitting tenants (Section 4.2.3).

4.3 GOETRE-UCHAF LANDHOLDING

- 4.3.1 **Early Sixteenth Century:** apparently, in the later medieval period, the landholding was held as a tenement by the Dean and Chapter of Bangor as part of their larger Maenol Estate;

1547 *A lease for 99 years of glebe lands, houses and tenements belonging to the said Deanery, dated 22nd April 1547 (NLW/B/DL/142),*

'1. Robert Evance, Dean of Bangor;. 2. Thomas Evance als Thomas ap Ieuan ap Eig'n. Lease for 99 yrs of glebe lands, houses and tenements belonging to the said Deanery namely a close called kae kegyn and Ero y kynhonwyr a house called the place vcha with a garden thereto adjoining in the town of Bangor in the tenure of Alis vch Hughe and her son Edward Gruff; a garden called the Dean's Garden adjoining to Roland Wyn's orchard; a close called kay seisyll; a tenement called 'the Goitre Uchaph; certain acres of land in the brith dir; certain lands belonging to the said deanery now in the tenure of William ap Res ap Dd ap Helis; two yards of lands in the weyne ole; a parcel of ground now in the tenure of Herry oof; a close called kay in Aber y pull als kay ir deon in the town of Gwiryddion in the lordship of Maenol Bangor and county of Caernarvon; a house and tenement called Tythin tuder kaer now in the tenure of Richard ap William ap Res ap D'd ap Helis in the town of Bachiad and Lloydiaid in the lordship and county aforesaid; a house and tenement called y ty selates with certain acres of lands thereto belonging in the parish of Pentir in the town of Kilkoyd and dynhowyd in the lordship and county aforesaid; certain acres of lands within kae'r Henllys within the town of Varchewell in the township and county aforesaid. Rent: six shillings and eight pence payable yearly to the Dean and six shillings and eight pence payable to the king for kae kegyn and the place Vchaph in equal portions at the Feasts of all Saints and the Apostles Philip and James.'

4.3.2 **Sixteenth-Eighteenth Century:** by the eighteenth century the landholding was held as part of the Vaynol Estate by the Assheton Smith family of Vaynol (Vaynol MSS 4056). It is possible that this occurred earlier, with the estate originating in the sixteenth century when the bishops of Bangor began to sell property belonging to their manor, Maenol Bangor. The estate was developed during this period by a family called Williams, and passed to the Crown on the death without issue of Sir William Williams in 1696. In 1723 it was presented to John Smith of Tedworth, Hants, and passed to his nephew Thomas Assheton Smith I in 1762. He was the third largest landowner in Gwynedd (Wethersby Lench 2010). However, no evidence of the holding was found within the contemporaneous records of rentals, maps and other documents held in the Record Office for the Vaynol Estate.

4.3.3 Two Vaynol estate maps dated 1777 and 1832 (Vaynol MSS 4056; 4067) marked the land on the north side of the farm (in the study area) as being part of the Penhryn Estate owned by the Pennant family. No evidence of the holding was found within the contemporaneous records of rentals, maps and other documents held in University Wales Bangor Archives for the Penrhyn Estate.

4.3.4 Land tax records denote the following:

1774-1792 Land Tax assessments show the owner as T Assheton Smith Esq. (Vaynol Estate). The tenant was William Lewis.

- 1777 *Part of the landholding east of the farmhouse marked as 'Sir Watkin William's Land' on an estate plan (Plate 1; Fig 4; at least Field 11). It is just possible that the land to the east of the green lane (Fields 6-8 and 11) were not part of Goetre-uchaf landholding in this period, but rather was newly-enclosed land (pre-Enclosure Act) held by the Wynnestay Estate.*
- 1783 *Part of the landholding east of the farmhouse marked as 'Sir Watkin William's Land' on an estate plan (Plate 2).*
- 1793-1811 *Land Tax assessments show the owner as Thomas P Jones Esq. The tenants were: William Lewis 1774-c 1795, J P Jones Esq 1801-2, Joseph Parry c 1803-4, and Henry Williams c 1811*
- 1812-1815 *Land Tax assessments show the owner as Mr Hughes. The tenant was Humphrey Williams*
- 1816-1818 *Land Tax assessments show the owner as J P J Parry Esq. The tenant was Mr Harrison*
- 1819-1830 *Land Tax assessments show the owner as John Evans. The tenants were: Mr Harrison 1819, John Hughes 1820-c 1822, and Hugh Jones c 1826-1830*
- 1839 *Valuation of the City and Parish of Bangor – The field names of 'Goetre Uchaf' farmstead include: Gweigloedd Bont 4a,1r,16p. (BMSS/20178)*
- 1840 *The tithe map and apportionment record the owner as the Reverend Hugh Davies Owen and the tenant was William Williams (BMSS/20188).*

4.4 GOETRE BACH OR CAE'R GOETREF LANDHOLDING

- 4.4.1 ***Sixteenth-Eighteenth Century:*** the landholding was probably held as a tenement by the Dean and Chapter of Bangor as part of their larger Maenol Estate;

- 1544 *Place-name of 'Coydbill' (BMSS/20177)*
- 1649 *Close Roll records a close or parcel of land of 4 acres called 'Coyr Geybill'... ' abutting east onto the land of Rol W W Jones, north and west by land of R Wynne, and south upon commons' (BMSS/20177)*
- 1773 *Landholding marked as 'The Revd. Mr Dean's Land' on an estate plan (Plate 1).*
- 1777 *Land Tax assessments mentions 'Cae Goytra' tenanted by William Lewis as being 'The Deanery Land'.*
- 1783 *Landholding marked as 'The Revd. Mr Dean's Land' on an estate plan (Plate 2).*

5. FIELDWORK RESULTS

5.1 INTRODUCTION

- 5.1.1 The following section presents a synthesised summary of the results for each of the evaluation, strip and record areas, and the watching brief. For the sake of brevity and clarity, more detailed context descriptions are tabulated in *Appendices 4* and *5*. The location of the trenches and strip and record areas have been plotted in Figure 2, whilst those of the second phase of watching brief have been plotted in Figure 3. The trenches in evaluation Phase 1 (Trenches 1-7, and 10) were designed to specifically target linear geophysical anomalies analogous to a series of field systems and a circular geophysical anomalies, whilst the two strip and record areas (M10 and M12) targeted a cluster of circular geophysical anomalies (see Figs 2 and 4). After consultation with GAPS, Trenches 11-18 in Evaluation Phase 2 were situated to target areas of geophysical ‘background noise’ and other areas interpreted as groups of possible pits and other discrete features. Trenches 19 and 20 were situated within the area of the former farmstead to investigate whether there was any survival of earlier remains.
- 5.1.2 Three distinct phases of activity (Phases 1-3), were tentatively identified during the site investigations, with only the final phase being reliably dated to the late-eighteenth century and later, whilst the earlier phases were undated. Phase 1 was defined by isolated pits, the burnt material from which indicated activity throughout the prehistoric period. Phase 2 comprised a field system dated by radiocarbon assay, from the late ninth to the late tenth centuries, which was generally, but not always aligned east/west by north/south. Phase 3 contained a later field system, and a number of esoteric circular features identified during the geophysical survey (OA North 2012). Those areas investigated as part of Phase 2 (Trenches 11-18) were found not to contain any significant archaeological remains.

Phase 1: Prehistoric

Phase 2: Early Medieval

Phase 3: Post-medieval

5.2 FIELDWORK RESULTS: EVALUATION PHASE 1

- 5.2.1 **Trench 1:** was aligned north-east/south-west, and measured 20m by 2m with a maximum depth of 0.34m. The trench had been positioned to target two linear geophysical anomalies (Figs 2 and 5).
- 5.2.2 *Phase 1:* no features from this phase were recorded within the trench.
- 5.2.3 *Phase 2:* an east/west-aligned ditch **103** was observed, which measured 1.34m wide by 0.15m deep (Fig 5; Plate 4). Ditch **103** matches the positively-

magnetic linear on the magnetometry results. No artefactual or ecofactual evidence was produced from the fill **104**.

- 5.2.4 *Phase 3*: the north-east/south-west-aligned geophysical anomaly shown on Figure 5, was not a sub-surface feature but was thought to be associated with a very subtle earthwork located toward the south-west end of the trench that was 4m wide and only 60mm above the general level of the surrounding field. The geophysical survey response for the linear, seen as a positive magnetic anomaly, suggests a ditched feature as opposed to an earthwork. Therefore, this possibly relates to a shallow infilled ditch accompanying the earthwork remains of the field boundary.



Plate 4: Trench 1, ditch **103**, viewed toward the south-east (1m scale)

- 5.2.5 **Trench 2**: was aligned north-east/south-west, and measured 30m by 2m with a maximum depth of 0.5m. The trench had been positioned to target two linear geophysical anomalies.
- 5.2.6 *Phase 1 and 2*: no features from these phases were recorded within the trench.
- 5.2.7 *Phase 3*: the two anomalies detected during the geophysical survey were not visible as below ground remains. However, there were two low-lying, north-west/south-east aligned parallel earthworks, approximately 2m wide (**203** and **204**), positioned approximately 10m apart, but only rising some 120mm above the surround land surface (Plate 2). As with Trench 1, the geophysical

anomalies were seen as being positively magnetic, which suggests that the earthworks had an accompanying ditch.



Plate 5: Trench 2 viewed from Trench 1, with arrows marking the course of the earthworks

- 5.2.8 **Trench 3:** was aligned north-west/south-east, and measured 20m by 2m with a maximum depth of 0.5m. The trench had been positioned to target the intersection of two linear geophysical anomalies indicative of ditches (Figs 2 and 6).
- 5.2.9 **Phase 1:** no features from this phase were recorded within the trench.
- 5.2.10 **Phase 2:** the ditch intersection was located at the south-east end of the trench, although no relationship could be discerned. Ditch **303** was north/south aligned and measured 1.08m wide and 0.52m deep, and contained an upper and lower fill comprising very similar grey brown, stony sandy-silt (**304** and **305**). Cutting this was ditch **306**, which was aligned east/west and measured 1.84m wide by 0.12m deep. No artefacts were recovered from either feature.
- 5.2.11 **Phase 3:** no features from this phase were recorded within the trench.
- 5.2.12 **Trench 4:** was aligned north-west/south-east, and originally measured 30m by 2m, but was extended at the north-west end forming a box-shape measuring 13.75m long by 5.4m wide. The trench had a maximum depth of 0.5m, and had been placed to target a number of geophysical anomalies (Figs 2 and 7).
- 5.2.13 **Phase 1:** a single discrete feature was recorded within at the north-west end of the trench, and partly within the south-west-facing section was a 0.36m wide by 0.36m deep posthole (**406**). No dating evidence was recovered from the features.
- 5.2.14 **Phase 2:** located at the south-east end was a small oval pit (**404**), measuring 0.87m long and 0.18m deep with a sterile fill (**403**). Toward the southern corner of the trench extension was a second pit (**408**), which was of similar proportions to pit **404**. The fill (**408**; Sample 401) contained abundant oak charcoal, which was dated by radiocarbon assay to 877-996cal AD (SUERC-45099). It is possible that this feature, given its location directly on the course of a linear geophysical anomaly, is part of the an early medieval field system.

- 5.2.15 *Phase 3*: two further geophysical anomalies were present from the survey, both of which were aligned north-east/south-west. It was not possible to locate the most northerly feature, whilst the southerly feature (**409**) was present as a faint north-east/south-west aligned earthwork measuring some 3m across (Fig 7).
- 5.2.16 **Trench 5**: was aligned north-east/south-west and measured 20m by 2m with a maximum depth of 0.42m. The trench had been positioned to target a number of linear geophysical anomalies (Figs 2 and 8).
- 5.2.17 *Phase 1*: no features from this phase were recorded within the trench.
- 5.2.18 *Phase 2*: the ditch intersection seen from the geophysical survey results, was located toward the north-east end of the trench, although no relationship could be discerned suggesting they were contemporary. Ditch **504** was north-west/south-east-aligned, and measured 2.3m wide by 0.35m deep, whilst ditch **506** was somewhat smaller (0.95m by 0.13m deep), and was aligned east/west. The fill of ditch **504** produced an iron object and fragment of glass, which was likely to have been intrusive.
- 5.2.19 *Phase 3*: feature **509** was a shallow linear that possibly, although not obviously, represented an interrupted continuation of ditch **504**. The fill (**508**) contained a single sherd of Westerwald stoneware of post-medieval date and three bone fragments. overlying feature **509** was a north-west/south-east aligned 3.6m wide low earthen bank (**507**).
- 5.2.20 **Trench 6**: was aligned north-east/south-west, and measured 20.7m by 2m with a maximum depth of 0.31m. The trench had been positioned to target two geophysical anomalies interpreted as a pit and faint lines (Figs 2 and 9).
- 5.2.21 *Phase 1*: no features from this phase were recorded within the trench.
- 5.2.22 *Phase 2*: a single, undated ditch **605** was located centrally within the trench. the feature was aligned north-west/south-east and measured 1.1m wide by 0.19m deep. This ditch was identified from the geophysics as potentially being part of this phase due to its irregular course (Fig 4; OA North 2012), which the lack of any dating evidence from the fill appears to confirm. Sample 600 from the fill (**604**) failed to produce any significant environmental evidence.
- 5.2.23 *Phase 3*: no features from this phase were recorded within the trench.
- 5.2.24 **Trench 7**: was aligned north-east/south-west and measured 17.5m by 2m with a maximum depth of 0.4m. The trench had been positioned to target three parallel linear geophysical anomalies interpreted as ditches (Figs 2 and 10).
- 5.2.25 *Phase 1 and 2*: no features from these phases were recorded within the trench.
- 5.2.26 *Phase 3*: the trench contained three north-west/south-east aligned parallel shallow ditches (**703**, **705** and **708**), which measured between 0.8m and 1.2m wide, and 0.18m or less, deep. Ditches **703** and **705** both contained nineteenth century or later pottery.

5.2.27 **Trench 10:** was aligned north-east/south-west, and measured 6.4m by 2m with a maximum depth of 0.4m. The trench had been positioned over the low-lying earthwork remains of a single circular feature seen in clusters in the geophysical survey. The earthwork remains were only discernible in very low mid-winter light towards the end of the day. Other similar circular geophysical anomalies targeted in the strip and record area M10 had not been observed following removal of the topsoil.

5.2.28 *Phase 1 and 2:* no features from these phases were recorded within the trench.



Plate 6: Circular feature **1002**, viewed toward the south, with a tape laid across it to emphasise the contours

5.2.29 *Phase 3:* circular feature **1002**, had a diameter of 5.6m and a maximum height of 110mm. The feature resembled an inverted saucer, with low surrounding banks and central raised area (Plate 6). There were no remains visible within the section, nor within the underlying natural geology (**1001**). Given the extent of ploughing seen from aerial photographs taken during the 1940s of the fields (NMR CPE/UK/1939/3170), combined with the lack of sub-surface features, it appears reasonable to assume that this feature, and others like it, are of post-war origin. Perhaps being the site of animal feeders used over a period long enough to wear a slight depression around the area of the food source, although this does not adequately explain why the central discrete depression is surrounded by an earthwork, and then an outer, relatively thin ditch. Therefore, the function of the features remain elusive as further documentary research (*Section 4*) did not provide any information as to their origin either.

5.2.30 **Strip and Record Area M12:** the area measured 38m by 20m, with a maximum depth of 0.45m. The area was positioned to target a cluster of the

circular geophysical anomalies (Figs 2 and 11). These features, like that revealed with Trench 10, were not visible within the excavated area and, therefore, were likely also to exist only as very subtle surface features.

- 5.2.31 There appeared to be two phases of activity, with the earliest (Phase 1a) seen to cut the lower stratigraphic unit **815** (fragmented rhyolite and sedimentary rocks), with later features cutting into a similar, but darker layer **802** (Phase 1b), which may have been the upper weathered part of **815**.
- 5.2.32 *Phase 1a*: two pits were located in the southern part of the area, the largest of which (**808**) measured 2m long and was 0.27m deep, and contained heat-affected material and charcoal (Plate 7). Sample 800 from the fill **807** contained charcoal from oak and Scots Pine. The charcoal was dated by radiocarbon assay to between 7063-6826cal BC (SUERC-45102), indicating that the pit was used in the Mesolithic period.



Plate 7: Pit **808**, which produced an early Mesolithic date

- 5.2.33 A second smaller pit (**810**) lay close by, which also contained heat-affected material, but no charcoal. At the north-eastern end of the area, two further pits were noted. The larger of the two (**812**; Plate 8), contained charcoal from sample 801 from both oak and the Maloideae family (hawthorn, whitebeam, apple and pear). The Maloideae charcoal was submitted for radiocarbon assay and produced a Neolithic date, 3635-3380cal BC (SUERC-45100). Its near neighbour, pit **814**, did not contain any charcoal.
- 5.2.34 *Phase 1b*: a small pit-like feature (**804**) was located at the south-east end of the area. This, along with tree throw **803**, and two further features **805** and **806**, were all thought to be natural in origin.



Plate 8: Pit **812** (left), which produced a Neolithic date

5.2.35 **Strip and Record Area M12:** the area measured 15m by 15m, with a maximum depth of 0.4m. The area was positioned to explore the relationship between an east/west-aligned linear geophysical anomaly, on top of which was another of the circular anomalies (Figs 2 and 12).

5.2.36 **Phase 1:** no features from this phase were recorded within the trench.

5.2.37 **Phase 2:** a short isolated segment of ditch (**904**) was identified within the area, which measured 1m long by 0.22m deep. The absence of any dating evidence and the east/west alignment is suggestion of an early date.

5.2.38 **Phase 3:** no features from this phase were recorded within the trench.

5.3 FIELDWORK RESULTS (EVALUATION PHASE 2)

5.3.1 The second stage of evaluation comprised a further ten trenches; Trenches 11, 13, 14 and 16-18 did not reveal any archaeological features.

5.3.2 **Trench 19:** was aligned north/south, and measured 30.7m by 2m, with a maximum depth of 0.44m. The trench had been positioned in the area of the former farmstead (Fig 2).

5.3.3 **Un-phased features:** the trench contained three undated discrete features. Toward the southern end of the site was a 0.2m sub-square posthole (**1906**). Seen partially within the east-facing section was a small pit (**1908**), measuring

some 0.98m long by 0.6m wide and 0.34m deep. Located to the north-east and emanating from the west-facing section was a shallow irregular gully (**1904**), containing reddish-brown silt that had possibly been heat-affected, although devoid of charcoal.



Plate 9: Surfaces and demolition deposits relating to the nineteenth and twentieth century remains of Goetra-uchaf farm, seen in the north-west-facing section in Trench 20. The concrete foundation (**2025**) relates to the final phase of building on the site.

- 5.3.4 **Trench 20:** was aligned north-east/south-west, and measured 30m by 2m with a maximum depth of 0.75m. The trench had been positioned over the footprint of the former farmstead. The trench was extended to the north-west, north-east and south-west forming a cross shape to investigate whether remains of the farm extended to the north-west and south-east. Natural geology (**2003**) was located 0.75m below the present ground level.
- 5.3.5 *Phase 1 and 2:* no features from these phases were recorded within the trench.
- 5.3.6 *Phase 3:* a north-east/south-west alignment of four postholes (**2005**, **2007**, **2013** and **2017**) was noted in the south-western half of the trench. The postholes ranged from 0.24m to 0.5m wide and up to 150mm deep. It was not clear from what level they had originally been cut, but pottery and roof slate fragments suggest a nineteenth century date for the features.
- 5.3.7 Sealing these features in the south-western half of the trench was a layer of subsoil (**2002**), above which was placed a north-west/south-east-aligned trackway surface (**2001**). Located in the north-eastern extent of the trench and the south-eastern arm were a series of surfaces (**2021** and **2022**), demolition material (**2026** and **2006**) and modern foundations (**2025** and **2029**; Plate 9).

The earliest of these deposits, dated by white ware pottery observed within the lowest strata, was nineteenth century in date.



Plate 10: Trench 20 during excavation showing postholes **2005**, **2007**, **2013** and **2017**

5.4 RESULTS OF THE WATCHING BRIEF

- 5.4.1 The average dimensions of the geotechnical test pits were approximately 1.6m by 1.3m. For the majority, the stratigraphy consisted of a loose, mid-brown silty topsoil overlying a dark yellow, clayey sand glacial till. The till included fractured rock inclusions in places. In TP10A and 31 the topsoil was of a mid-grey clayey-silt, but they were situated in areas of boggy land, which is likely to account for the difference to the other test pits.
- 5.4.2 A layer of redeposited material was encountered in TP34, **6**. This is thought to be associated with Goetre-uchaf farmstead and its demolition. TP24 lay within the area of the now demolished farm but did not uncover any noticeable remains.
- 5.4.3 In TP29 a posthole of apparent archaeological origin was observed in plan in the north-west corner, filled with a dark brown-orange sandy-silt **16**, containing large amounts of pea gravel. The posthole measured 0.3m by 0.25m with a depth of 0.11m. A small sherd of post-medieval pottery was located in the top of this fill, but may have been intrusive. This posthole may be significant in that it lies in close proximity to the scheduled barrow.
- 5.4.4 TP21 showed evidence of a possible ditch **68**, running on a east/west alignment. It was recorded in section and plan, and was excavated by the machine. Only the northern edge was visible due to the size of the test pit. The ditches measured at least 1.3m by 1.2m and had a depth of 0.3m. It was filled

with a mid-brown sandy-silt **69**, very similar to the overlying topsoil. No finds were retrieved from which to date the ditch.

5.5 FINDS

- 5.5.1 **Introduction:** one hundred artefacts were recovered during the course of the site investigations, and composed of finds from various material categories, including pottery, glass vessels, ironwork, leather and stone (see *Appendix 6*), although pottery comprised the largest category of artefacts. The majority, if not the entirety of the finds were attributable to the nineteenth century or later.
- 5.5.2 **Pottery:** in total, 76 sherds of post-medieval pottery were recovered, weighing 1621g. The pottery was recovered from 24 stratified and unstratified contexts. The number of sherds per context was generally low, as was the average sherd of weight (21g). Only subsoil deposit (**6**) from TP34 from the Phase 1 watching brief (OA North 2012), which was located toward the eastern extremity of the site, and ditch fill **704** in Trench 7 produced any more than two to three sherds. The deposits containing 29 and 11 fragments of pottery respectively.
- 5.5.3 The pottery included what might be described as a typical nineteenth century domestic assemblage, with a mixture of table and kitchen wares. The kitchen wares were represented by Blackwares, with a pancheon and a possible milk pot from subsoil deposit **6** TP34 from the Phase 1 watching brief (OA North 2012; McGarva 2000, 10), both of which were probably both Buckley, (Flintshire) products. Other items included stoneware jar fragments.
- 5.5.4 The bulk of the pottery assemblage comprised table wares, and included refined white earthenwares, some of which carried the standard willow pattern transfers, china and porcelain. There were single fragments of sprig decorated white ware (unstratified **600**, Trench 6) and two examples of coloured bodied red ware; one from a “silver shape” dark glaze teapot (**3301** from TP33; Phase 1 watching brief OA North 2012) and an industrial slipware sherd with yellow glazed rough cast or decoration “encrusted ware” (Towner 1963, 47-48), from TP15 deposit **32** (Phase 1 watching brief, OA North 2012). One unusual sherd from a ditch fill (**5508**) in Trench 5 was a small decorated fragment of Westerwald stoneware, from the Rhineland in Germany. This pottery tradition originated in the seventeenth century, but is still being produced today, making precise dating difficult (Hinton 2012, 7). This assemblage shows a remarkable degree of constancy, with regard to dating, in that there is no material that need be earlier than the nineteenth century. Moreover, much of the material may date to the second half of the nineteenth century or later, since there is an absence of creamwares, pearl wares and shell edged ware plates (Barker 2008). The Blackware was probably produced in Buckley, an industry dating back to at least the mid-seventeenth century (Barker 1986), although in this context, when tempered with the other material, it is likely to be nineteenth century in date. The sprigged ware handle may be earlier in the nineteenth, but this too was a long-lived tradition (www.jefpat.org).

5.6 PALAEOENVIRONMENTAL RESULTS

- 5.6.1 Six samples were retrieved and assessed during the evaluation trial trenching, together with a sample retrieved from TP6 during the first the Phase 1 watching brief during July-August 2012 (OA North 2012). The only charred plant remains recorded in TP6 were charcoal fragments from alder/hazel (*Alnus/Corylus*) round wood, with some positively identified hazel. Unfortunately, it can be difficult to distinguish between the charcoal of alder and hazel. Charcoal less than 2mm was engrained with silt/clay.
- 5.6.2 Other than abundant charcoal very few charred plant remains were recorded in the other six environmental samples except for occasional seeds of fat-hen (*Chenopodium album*). A few waterlogged/modern seeds were identified in five of the six samples, the exception being the one taken from pit **812** (Sample 801, fill **811**).
- 5.6.3 Charcoal fragments larger than 2mm were abundant in the pits **408** (Sample 401), **808** (Sample 800) and **812** (Sample 801) and the ditch **904** (Sample 900). The charcoal assemblages differed between the samples with a coniferous wood, probably Scot's pine (cf *Pinus sylvestris*), dominating the sample from pit **808**, whilst oak (*Quercus*) was abundant in pits **408** and **812**, where some hawthorn-type (Maloideae: hawthorn, whitebeam, apple and pear was also identified. Oak and hazel (*Corylus avellana*) charcoal were identified in ditch **904**.
- 5.6.4 Fungal sclerotia, sand, clay and occasional insect remains and earthworm egg cases and coal, with occasional mollusc remains in the sample from TP6 (Phase 1 watching brief) were recorded in the matrices, together with abundant modern roots. No small finds were observed in the residues.
- 5.6.5 Abundant charcoal fragments were identified in five of the samples: the undated burnt pit fill (**603**); in pits **408** (Sample 401), **808** (Sample 800) and **812** (Sample 801); and the ditch **904** (Sample 900). The presence of alder/hazel roundwood, oak, Scots pine, and Maloideae charcoal suggests the possible use of these wood types as fuel on the site, and the disposal of the charcoal in the pits and the ditch.
- 5.6.6 Differences in the charcoal assemblages between the five features may suggest that they were in use at different times in the past, their spatial distribution and their relationship to available trees, or the selective use of wood for fuel perhaps related to activity on the site.

Sample no	Context and cut no	Sample size litres	Flot size ml	Matrix	Charred and waterlogged/modern plant remains	Charcoal	Potential for analysis
-	603 , TP6 (Phase 1 watching brief)	2	50	Charcoal >2mm (4), <2mm (4), modern roots ++, fungal sclerotia +, molluscs +	None	Charcoal mostly alder/hazel roundwood	None charcoal dated

						with some positively identified hazel	
100	Fill 104 of ditch 103	29	<25	Charcoal >2mm + >2mm +, roundwood/root, AMP ++, modern roots++, earthworm sand+	WPR/modern seeds(1) <i>Chenopodium album</i> , <i>Rubus</i> sect 2 <i>Glandulosus</i>		None
401	Fill 407 of pit 408	19	400	Charcoal >2mm ++, >2mm +, fungal sclerotia +, insect remains+, sand/gravel+ coal+	WPR/modern seeds(2) <i>Chenopodium album</i> , <i>Ranunculus repens</i> -type	<i>Quercus</i>	None charcoal dated
600	Fill 604 of linear 605	29	<25	Charcoal >2mm + >2mm +, AMP+, modern roots+, egg cases+,	WPR/modern seeds (1) <i>Chenopodium album</i>		None
800	Fill 807 of pit 808	29	30	Charcoal >2mm ++ >2mm ++ vitrified, modern roots ++, coal+, clay+	CPR (1), <i>Chenopodium album</i> ,	Common cf <i>Pinus sylvestris</i> , some cf <i>Quercus</i>	None charcoal dated
801	Fill 811 of ovoid pit 812	29	200	Charcoal >2mm ++ >2mm ++, modern roots ++, sand+, clay+		Mainly <i>Quercus</i> but some <i>Maloideae</i>	None charcoal dated
900	Fill 905 of ditch 904	229	75	Charcoal >2mm ++ >2mm ++, fungal sclerotia ++, insect remains+, modern roots/AMP ++, clay+	CPR (1) <i>Chenopodium album</i> , WPR/modern seeds(2), <i>Ranunculus flammula</i> , <i>Urtica dioica</i>	<i>Quercus</i> and <i>Corylus</i>	None

Table 2: Environmental assessment of environmental samples

Charred plant remains are recorded on a scale of 1-4 where 1 is five items or less and 4 is more than 100 items. Matrix components are recorded as present (+) or frequent (++)

5.6.7 **Conclusion:** abundant charcoal fragments were identified in the pits from TP6 (fill **603**), **408** (Sample 401), **808** (Sample 800) and **812** (Sample 801), and the ditch **904**. Although different charcoal assemblages were identified in the five samples there is no potential for further analysis. Scientific dating of the charcoal from pit fills was undertaken on TP6 (**603**), **408** (Sample 401), **808** (Sample 800) and **812** (Sample 801), the results of which can be found in Section 5.7, below. This has shown that charcoal and occasional charred seeds were preserved yielding material suitable for scientific dating. It is, therefore, important to include a programme of environmental sampling if there are further archaeological interventions at the site, particularly given the lack of other dating evidence from many of the features on the site.

5.7 RADIOCARBON ASSAY

5.7.1 **Quantification:** several of the samples of organic remains retrieved from charcoal-bearing pits and a ditch (Section 5.6, above) were submitted to the

Scottish Universities Environmental Research Centre (SUERC) laboratories for radiocarbon assay. This was intended to provide a chronology for features found on the site, and to help assess the significance of the archaeological remains whilst determining their potential for further research. To this end, four samples in total, from four features (Table 3), were subject to initial radiocarbon assay.

5.7.2 **Methodology:** the calibrated results were produced using the Reimer *et al* (2004) curve and the computer programme Oxcal (v4.1; build 44; Bronk Ramsey 1995; 1998; 2001; 2009a; 2009b). Ranges have been obtained using the maximum intercept method (Stuiver and Reimer 1986) and are quoted in accordance with Stuiver and Polach (1977), but adapted for the increased precision available in later datasets (A Millard pers comm), rounded out by ten years when the error term is greater or equal to 25 years, and by five years when the error term is less than 25 years. When more than one result was produced on material from a single interpretative phase of a site, the statistical consistency of results can be used to determine whether it is possible that they are of the same actual age (Ward and Wilson 1978).

5.7.3 The results of the initial programme of radiocarbon assay are presented in Table 3. The samples have been variously dated to the early Mesolithic, Neolithic and the early medieval period. Significantly, they have highlighted the existence of human activity on the site for a period stretching back nearly 7000 years.

Trench/ strip and record area	Context	Feature	Material	SUERC Code	Radiocarbon Age BP	Cal BC/AD (95.4% Confidence)	$\delta^{13}\text{C}$ ‰
TP6	603	Pit	Corylus	44195	4586 ± 23	3495 - 3135calBC	-26.9 ‰
Trench 4	407	Ditch	Oak	45099	1112 ± 29	877 - 996calAD	-27.5 ‰
Strip and record area 8 M12	807	Pit	cf Pinus sylvestris	45100	8023 ± 30	7063 - 6826calBC	-26.2 ‰
Strip and record area 8 M12	811	Pit	Maloideae	45102	4740± 26	3635 - 3380calBC	27.9 ‰

NB – $\delta^{13}\text{C}$ ‰ relative to Vienna Pee Dee Belemnite [Got this from Fraser's C14 blurb and he doesn't quote a reference]

Table 3: Results of the radiocarbon assay

6. DISCUSSION

6.1 INTRODUCTION

- 6.1.1 The site investigations, including the first phase of watching brief undertaken in July and August 2012 (OA North 2012), have demonstrated that archaeological remains are present on the site of the proposed development. Dating evidence, retrieved from some of the features recorded during the investigations, exists from as early as the Mesolithic and the Neolithic period, as established by radiocarbon assay of charcoal. Bronze Age activity is also evident in the form of burial mounds, or barrows, along the edge of the plateau above the Nant y Garth stream valley. The landuse of the area during the Iron Age is unclear, although a further radiocarbon date indicates early medieval activity. From the medieval or post-medieval periods until the later twentieth century, the character of the local area was dominated by agriculture.

6.2 THE PREHISTORIC PERIOD

- 6.2.1 Mesolithic and Neolithic evidence was recovered from pits in various locations across the site. Dated material was found in pits **408** (Trench 4), **808** and **812**, both from strip and record area M12 and from the Phase 1 watching brief (**603** from TP6; OA North 2012), situated toward the western end of the site (Fig 2 and 3), all of which produced radiocarbon dates, the earliest dating to the early Mesolithic (7063-6826cal BC; SUERC 45100). Mesolithic peoples, from their impact on the tree pollen record, arrived in this part of North West Wales in large numbers from *c* 7500 BC (Aldhouse-Green 2000). It is not clear whether the larger of the pits (**808**) was deliberately excavated, or whether it was a tree throw hole that had undergone some modification. If the latter was the case, it may be seen as part of that initial landscape management or clearance noted from the effect on the tree pollen record. Traces of Mesolithic activity have been found nearby at Parc Bryn Cegin, approximately 3km to the north-east, although this was mainly confined to flint scatters (Kenney 2008); previous earlier excavations in this area did produce a pit, also containing Mesolithic artefacts (*ibid*), whereas, at the proposed development site no artefacts of this period were recovered during the investigations.
- 6.2.2 Evidence for Neolithic activity was found in two pits (**603** from TP6 from the Phase 1 watching brief, and **804**) in the eastern and western fields, both of which were dated by radiocarbon assay to the mid Neolithic. The pit found within TP6 produced a date of 3495-3135cal BC (SUERC 44195), whilst **804** was slightly earlier, dating to 3635-3380cal BC (SUERC 45102). A large Neolithic complex was excavated at Parc Bryn Cegin, which included henges, a cursus, groups of pits, settlement evidence, including a rectangular building (GAT 2002a, 17-18; Kenney 2008), and similarly dated pits, where they were associated with artefacts, such as flakes from stone axes, Peterborough and Grooved ware pottery, and food remains in the form of hazel nut shells (Kenney 2008). The only similarity between those found at Parc Bryn Cegin

and the present site, however, is the presence of oak and hazel charcoal. The abundance of hazel within Pit VII at Parc Bryn Cegin was suggested as evidence of its use as fuel (*ibid*). The presence of round wood fragments in the pit from TP6 may represent opportunistic use of the wood as fuel. What the radiocarbon dates from the present site and that at nearby Parc Bryn Cegin do indicate is that both Mesolithic and Neolithic activity was present across broad swathes of the landscape between the seventh and fourth millennium BC. Little in the way of plant remains was retrieved from the dated Mesolithic and Neolithic pits to give any indications of the type of local environment, other than presence of woodland containing pine, oak, hazel and hawthorn-type species.

- 6.2.3 There is considerably more evidence for Bronze Age activity within the proposed development site, with one definite barrow, being the scheduled Goetre-uchaf barrow (SM CN 376), and two possible Bronze Age barrows comprising a second damaged mound which, despite being associated with an undated flint scraper, was thought by the Ordnance Survey in 1970 to be of natural origin, and a third possible barrow, situated close to Trench 20 (Fig 2). These would have formed part of a group of barrows that lay along the prominent north-east/south-west-aligned ridge within the site. The conspicuous presence of burial mounds within the local area is suggested by the place-name Penrhos-Garnedd, which appears to describe ‘the cairns at the head of the moor’ (*eg* Davies 2012, 17; 45), whilst it is reported that further barrows once lay immediately to the north-east of the site, in the area now occupied by the hospital (OA North 2012). The geophysical survey results (*ibid*; Fig 2) tentatively suggest that the Goetre-uchaf barrow contains sub-surface remains. However, the lack of excavation of such sites in the region has meant that there is little in the way of explanation of the chronological sequence, cultural affinity, or environment, nor has there been a proper grasp of the meaning and location of this type of monument in relation to the landscape (Smith 2004).
- 6.2.4 Sub-surface remains of a burnt mound of possible Bronze Age date were found during a watching brief within the northern part of the proposed development area (GAT 2010, 6). A large discrete area of high magnetic readings likely to be the burnt mound can be seen where the heritage asset is recorded in the Historic Environment Record (OA North 2012). Therefore, this suggests that there is the potential for some of the other similar anomalies thought to have been geological previously, to be treated as something similar. The burnt mound lay adjacent to a stream channel and an area of saturated ground, which is often a characteristic of the siting of burnt mounds (Barfield and Hodder 1987; OA North 2009, 31-33). Some 16 burnt mounds were scattered across the site at Parc Bryn Cegin in similar-type environments to that at the present site, and further, were widely spread across the Arfon plateau (*ibid*).

6.3 MEDIEVAL AND LATER FEATURES

- 6.3.1 It is difficult to ascertain when the field systems located within the study area came into being without more definitive dating evidence. The date produced

by radiocarbon assay from the oak charcoal in pit **408** of 877-996calAD (SUERC 45099) certainly indicates early medieval activity on the site. This feature lies directly on the course of a linear feature revealed during the geophysical survey (Figs 2 and 7). This linear feature was identified as part of an early field system (field system 1; Fig 4), which lies on a different angle and bears little resemblance to the later field systems. The north-east linear seen as a geophysical anomaly (Fig 7) is later and was not evident within the trench. It is possible, therefore, that the pit represents the ploughed-out base of a ditch. Therefore, there is a possibility that field system 1 is early medieval in date. Such a date would be quite significant, since, settlement evidence for the early medieval period is poor throughout most of western and northern Britain. Furthermore, Wales, like much of the rest of Britain, has no native ceramic tradition during this period, making site recognition and dating by non-invasive means, such as field walking, even over areas with known cropmarks, virtually impossible (Edwards *et al* 2005).

- 6.3.2 The map regression and the results of the geophysical survey (OA North 2012) indicated that there were possibly three field systems present within the site. The earlier system (field system 1; Fig 4), which was apparent in the western half of the site, but with a few elements in the east, had an approximate east/west alignment, as opposed to the prevailing north-west/south-east by north-east/south-west orientation of the extant field system. Trenches 1, 3, 5 and strip and record area M10, all revealed evidence for this field system in the form of shallow, and generally undated ditches. Ditch **504** produced a single fragment of bottle glass, which was likely to have been intrusive. An undated ditch was revealed within Trench 6 within the eastern field, but its alignment is more akin to the prevailing extant boundaries, and so is more likely to represent a reorganisation of the existing fields.
- 6.3.3 The farmstead name of Goetre-uchaf incorporates the ‘goetre’ (coed-tre) element, meaning ‘a home in a wood’ (Davies 2012, 30). This might indicate that the farmstead was established within a clearing in a largely wooded area and could, therefore, have originated early enough to pre-date the widespread use of the study area for agriculture. However, it is not currently known at what date the study area was cleared of tree cover. The earliest documentary evidence indicates that the farm was already in existence by 1547 (*see Section 4*). However, no evidence of a farmstead earlier than the nineteenth century was seen within Trenches 19 and 20, although that is not to say the remains of such might exist elsewhere in the vicinity. Its absence may be explained, perhaps by the low impact of an earlier farm building. Any putative structure may have little in the way of foundations, and the materials may have been entirely recycled.
- 6.3.4 The two later field systems (field systems 2 and 3; Fig 4), are probably post-medieval in origin. The 1773 Estate map and survey of ‘Goytre’ depicts the holdings of Goetre-isaf to the south of the present site (Plate 1). However, the holdings belonging to Goetre-uchaf are not depicted but, a written description on the map indicates that it was land held by Sir Watkins Williams. Goetre-uchaf is first depicted on the 1840-1 Bangor Tithe map (OA North 2012). This shows field system 2 (Fig 4), and probably indicates that the extant field

system had been in place for sometime. These field boundaries were seen within Trenches 6 and 7 in the east field as ditches and could also be seen on the surface as a boundary lynchet (*ibid*).

- 6.3.5 Field system 3 (Fig 4) was likely to have been twentieth century reorganisation of the existing fields, as they are not depicted on the 1889 OS map. More unusually, elements of field system 3, detected by the geophysical survey (Fig 2), did not reveal themselves as below-ground features. Instead, they were usually visible as slight earthworks and were recorded in Trenches 1, 2, 4 and 5. Nineteenth century pottery was recovered from ditches **703** and **705** in Trench 7, whilst elsewhere it was noted within the topsoil from both the east and west field indicating that both fields would have been ploughed within the last two hundred years, the pottery finding its way into the topsoil via manuring (Jones 2005). There was also evidence that the larger, relatively level, fields within the survey area have been subjected to intensive twentieth century ploughing, as this was mentioned in the RCAHMS Inventory field investigators' notes and was shown on the RAF aerial photography (NMR 541/178/3183-4; OA North 2012). This evidence has been used to suggest that the clusters of circular features seen within the geophysical survey, of which there was no evidence when the topsoil was removed, date to sometime following the ploughing of the site during the Second World War. One such feature was discernible as low-lying earthworks during poor light but no sub-surface remains were evident.

6.4 CONCLUSION

- 6.4.1 The evaluation has demonstrated that the proposed development site has been in use for millennia, since at least the early Mesolithic through to the twentieth century, and the evidence, therefore, is of some significance locally, if not regionally, fitting in with the general pattern of use during the prehistoric and medieval periods; during the past *c* 8000 years the proposed development site has been extensively used, which suggests that the potential exists for the presence of similar remains within areas of the site not examined through trial trenching, as suggested by the geophysical survey, for instance the early or first phase field system.
- 6.4.2 The purpose of this phase of investigation was to provide an understanding of any archaeological features or deposits that may exist on site that would require preservation either *in situ*, or by record, i.e. archaeological excavation planning and recording of the features prior to their removal during development. Excluding the scheduled barrow, which is statutorily protected, none of the features observed during the evaluation has demonstrated the requirement for preservation *in situ*. The archaeological features and deposits found during the evaluation are not of such importance that would preclude the development, and could be recorded by employing an appropriate mitigation strategy.
- 6.4.3 In line with this, during the evaluation process GAPS has indicated that a programme of mitigation work prior to, or during, the construction phase would be required. Although this is yet to be fully scoped, in terms of the

remains found GAPS has requested a programme of palaeoenvironmental sampling in the saturated area to the south of the scheduled Goetra-uchaf barrow which, through the nature of waterlogged preservation, is anticipated would provide a record of the environmental data contemporary with the archaeological activity on site, and in particular the nearby barrow. GAPS has also suggested that investigation is needed to verify whether the two further mounds are barrows, which would then comprise an alignment with the scheduled barrow running along the north-east/south-west orientated scarp edge (Fig 2). Given the condition of the non-scheduled mounds, investigation rather than preservation is the preferred option by GAPS as part of the mitigation work. To some extent this applies whether or not they are in fact barrows: if they are natural, they could indicate siting of the Goetre-uchaf barrow with reference to natural features, or if more recent, represent fortuitous/deliberate development of landscape features. No further fieldwork, however, is currently being considered in the area of the scheduled barrow.

7. BIBLIOGRAPHY

7.1 PRIMARY AND CARTOGRAPHIC SOURCES

Maps

Ordnance Survey, 1822, draft survey at 2" to 1 mile

Ordnance Survey, 1889, First Edition map at 25" to 1 mile

Ordnance Survey, 1900, 25" to 1 mile

Ordnance Survey, 1914, 25" to 1 mile

Ordnance Survey, 1938-53, 6" to 1 mile

Ordnance Survey, 1970-2, 25" to 1 mile

Ordnance Survey, 1983, 1:1250

Ordnance Survey, 1987, 1:10,000

Caernarvon Record Office (CRO)

Vaynol MSS 4056: Vaynol estate maps of 1777

Vaynol MSS 4067: Vaynol estate maps of 1832

National Monuments Record Wales (NMR)

106G/UK655/4027-8: 13th August 1945, vertical black and white aerial photographs

541/178/3183-4: 8th November 1948, vertical black and white aerial photographs

CPE/UK/1939/3170: 18th January 1947, vertical black and white aerial photographs

CPE/UK/1996/2312-5: 13th April 1947, vertical black and white aerial photographs

NLW 1165: Bangor tithe map of 1840-1

University Bangor Wales Archive

Bangor MSS 20177-20195 History of Bangor: A collection of notes and other material embodying an intensive research into the history of the city and parish of Bangor by Mrs Eluned Garmon Jones. Including:

BMSS/20177 Ledger containing notes on place-names in the parish of Bangor (arranged alphabetically)

BMSS/20178 Notes on place-and field-names, etc

BMSS/20188 Map copy (reduced) of the 1840 tithe map of the parish of Bangor, showing the various estates, etc.

Lligwy MSS – The estate of Lord Boston. Including:

LLIG/1203-1204 Lease and release dated 10th and 11th March 1746 between Thomas Lloyd and the Honourable Sir William Irby (Lord Boston).

LLIG/1205 Bargain and sale dated 11th March 1746 between Thomas Lloyd and the Honourable Sir William Irby (Lord Boston).

LLIG/1409 Maps and Survey of an Estate in Caernarvonshire & Anglesey belonging to the Right Honourable Lord Boston – surveyed 1773

LLIG//1430 Maps of the lands belonging to the Lligwy Estate in the following parishes, Llanddeiniolen, Llanfairisgaer & Bangor (Co. Caernarvonshire), c 1783 (by Isaac Lenny 1782)

NLW/B/DL/142 A lease for 99 years of glebe lands, houses and tenements belonging to the said Deanery, dated 22nd April 1547

7.2 SECONDARY SOURCES

Aldhouse-Green, S H R, 2000 Palaeolithic and Mesolithic Wales, in Lynch, F M, Aldhouse-Green, S H R, and Davies J L, *Prehistoric Wales*, Stroud, 1-41

Allen, D, 1993 Brenig 53: Mesolithic and Neolithic occupation area, in F Lynch *Excavations in the Brenig Valley, a Mesolithic landscape in North Wales*, Bangor, 17-22

Archif Melville Richards: Place-Name Research Centre – University of Wales Bangor

Barfield, LH, and Hodder, MA, 1987 Burnt mounds as saunas, and the prehistory of bathing, *Antiquity*, **61**, 370-9

Barker, D, 1986 North Staffordshire post-medieval ceramics – a type series, part two: Blackwares, *Staffordshire Archaeol Stud, City Stoke-on-Trent Mus Archaeol Soc Rep*, n ser, **3**, 58-75

Barker, L, and Leighton, D, 2011 *The Denbigh Moors*, Aberystwyth

Barker, D, 2008 *Post-medieval Pottery*, Medieval Pot Res Grp (course notes), unpubl doc

Basset, T M, and Davies, B L, (eds) 1977 *Atlas of Caernarvonshire*, Bangor

Bronk Ramsey, C, 1995 Radiocarbon calibration and analysis of stratigraphy: The OxCal program, *Radiocarbon*, **37**, 425-30

Bronk Ramsey, C, 1998 Probability and dating, *Radiocarbon*, **40**, 461–74

Bronk Ramsey, C, 2001 Development of the radiocarbon calibration program, *Radiocarbon*, **43**, 355-63

Bronk Ramsey, C, 2009a Bayesian analysis of radiocarbon dates, *Radiocarbon*, **51**, 37–60

Bronk Ramsey, C, 2009b OxCal 4.1b3 release note, <http://www.rlaha.ox.ac.uk/>

British Geological Survey, 2012 *Geoindex*, <http://maps.bgs.ac.uk/GeoIndex>, accessed on 28th August 2012

CADW, 2012 *Historic Landscape Characterisation: Ardal Arfon*, <http://www.heneb.co.uk/arfonintro/arfonlandscapemap.html>, accessed on 3rd September 2012

- Davies, D, 2012 *Welsh place names and their meanings*, Talybont
- Department for Culture, Media, and Sport (DCMS), 2010 *Policy Statement on Scheduled Monuments*, London
- Edwards, N, Lane, A, Bapty, I, Redknap, M, 2005 Early medieval Wales: A framework for archaeological research, *A Research Framework for the Archaeology of Wales, Version 01, Final Paper*, <http://www.archaeoleg.org.uk/firstreview.html>. accessed on 4th April 2013
- http://www.e-gymraeg.co.uk/enwaulleoedd/amr/cronfa_en.aspx site accessed 1st March 2013
- English Heritage, 2006 *Management of Research Projects in the Historic Environment* (MoRPHE), Swindon
- English Heritage, 2012 *The Setting of Heritage Assets*, Swindon
- Gaffney, C, Gater, JA, and Ovenden, SM, 2002 *The Use of Geophysical Techniques in Archaeological Evaluations*, IFA Technical Pap 6, Reading
- Gwynedd Archaeological Trust (GAT), 2002a *Survey of Prehistoric Funerary and Ritual Monuments in Wales: West Conwy and North Gwynedd*, unpubl rep
- Gwynedd Archaeological Trust (GAT), 2002b *Proposed Extension to Parc Menai, Bangor, archaeological assessment of revised development area*, unpubl rep
- Gwynedd Archaeological Trust (GAT), 2003 *Vaynol Park, Gwynedd, archaeological and historical assessment*, unpubl rep
- Gwynedd Archaeological Trust (GAT), 2010 *33KV Underground Cable Route, Penrhos, Bangor, archaeological watching brief*, unpubl rep
- Hinton, J, 2012 *The Art of German Stoneware, 1300-1900*, New Haven
- Institute for Archaeologists (IfA), 2008a *Standard and Guidance for an Archaeological Watching Brief*, Reading
- Institute for Archaeologists (IfA), 2008b *Standard and Guidance for the Creation, Preparation, Transfer and Deposition of Archaeological Archives*, Reading
- Institute of Field Archaeologists, 2009a *Standards and Guidance for Archaeological Field Evaluation*, Reading
- Institute of Field Archaeologists, 2009b *Standards and Guidance for Archaeological Excavation*, Reading
- Institute for Archaeologists (IfA), 2012 *Code of Conduct*, Reading
- Institute for Archaeologists (IfA), 2011a *Standard and Guidance for Archaeological Geophysical Survey*, Reading
- Institute for Archaeologists (IfA), 2011b *Standard and Guidance for Historic Environment Desk-based Assessment*, Reading
- [jefpat.org/diagnostic/Post-Colonial Ceramics/sprigmolded decoration](http://jefpat.org/diagnostic/Post-Colonial%20Ceramics/sprigmolded%20decoration). (Maryland Archaeological Conservation Laboratory's Diagnostic Artefacts in Maryland). Accessed 22nd February 2013

- Jones, R, 2005 Signatures in the Soil: the Use of Pottery in Manure Scatters in the Identification of Medieval Arable Farming Regimes, *Archaeological Journal*, **161**, 159-88.
- Kenney, J, 2008 Recent excavations and Parc Bryn Cegin, Llandygai, near Bangor, North Wales, *Archaeologia Cambrensis*, **157**, 9-142
- Lewis, S, 1849 *A topographical Dictionary of Wales*, Wrexham
- Lynch, F, and Carr, AD, 1986 *Museum of Welsh Antiquities, Bangor, catalogue of archaeological material*, Bangor
- Lynch, F, 1995 *A Guide to Ancient and Historic Wales, Gwynedd*, Cardiff
- Lynch, F, and Musson, C, 2004 A prehistoric and early medieval complex at Llandegai, near Bangor, North Wales: excavations directed by CH Houlder 1966-7, *Archaeol Cambrensis*, **150**, 17-142
- McGarva, A, 2000 *Country Pottery: Traditional earthenware in Britain*, London
- OA North, 2009 *Land at Nether Wasdale, Cumbria: Historic Landscape Survey Report, Vol 1*, unpubl report
- OA North, 2012 Land off Penrhos Road, Bangor, Gwynedd: Archaeological Assessment, unpubl report
- Owen, H W, and Morgan, R, 2007 *Dictionary of the Place-names of Wales*, Landysul
- Phase SI, 2012 *Land off Penrhos Road, Bangor; Archaeological Geophysical Survey*, unpubl
- Reimer, P J, Baillie, M G L, Bard, E, Bayliss, A, Beck, J W, Bertrand, C J H, Blackwell, P G, Buck, C E, Burr, G S, Cutler, K B, Damon, P E, Edwards, R L, Fairbanks, R G, Friedrich, M, Guilderson, T P, Hogg, A G, Hughen, K A, Kromer, B, McCormac, F G, Manning, S, Bronk Ramsey, C, Reimer, R W, Remmele, S, Southon, J R, Stuiver, M, Talamo, S, Taylor, F W, van der Plicht, J, and Weyhenmeyer, C E, 2004 IntCal04 Terrestrial Radiocarbon Age Calibration, 0-26 cal kyr BP, *Radiocarbon*, **46**, 1029-58
- Smith, G, 2004 A survey of Prehistoric funerary and ritual sites in North and West Gwynedd and West Conwy, 2001-3, Transactions of the Caernarvonshire Historical Society, **65**, 39-40.
- Stace, C, 1997, *New Flora of the British Isles*, Cambridge
- Stuiver, M, and Polach, H A, 1977 Reporting of 14C data, *Radiocarbon*, **19**, 355-63
- Stuiver, M, and Reimer, P J, 1986 A computer program for radiocarbon age calculation, *Radiocarbon*, **28**, 1022-30
- Towner, D, 1963 *The Leeds Pottery. Corey*, London
- Ward, G K, and Wilson, S R, 1978 Procedures for comparing and combining radiocarbon age determinations: a critique, *Archaeometry*, **20**, 19-31
- Welsh Assembly Government (WAG), 2011 *Planning Policy Wales*
- Wethersby Lench, K, *Origins of the Faenol Estate, the - A Rumbustious Tale*, Wrexham

8. ILLUSTRATIONS

8.1 FIGURES

Figure 1: Site location

Figure 2: Trench location plan superimposed on the geophysical survey results

Figure 3: Location of testpits

Figure 4: Plan of fields belonging to Goetra-uchaf and Goetra-isaf based on nineteenth century maps, Land Tax Assessments and geophysical survey

Figure 5: Archaeological features in Trench 1

Figure 6: Archaeological features in Trench 3

Figure 7: Archaeological features in Trench 4

Figure 8: Archaeological features in Trench 5

Figure 9: Archaeological features in Trench 6

Figure 10: Archaeological features in Trench 7

Figure 11: Archaeological features in Strip and Record Area 8

Figure 12: Archaeological features in Strip and Record Area 9 and Trench 10

Figure 13: Trench 20 sections

8.2 PLATES

Plate 1: Estate map and survey of 'Goytre', dated 1773

Plate 2: Estate map and survey of 'Goytre', dated 1783

Plate 3: Goetre Bach landholding, with field names (marked in red), collated from the tithe apportionment, dated 1840

Plate 4: Trench 1, ditch **103**, viewed toward the south-east (1m scale)

Plate 5: Trench 2 viewed from Trench 1

Plate 6: Circular feature **1002**, viewed toward the south, with a tape laid across it to emphasise the contours

Plate 7: Pit **808**, which produced an early Mesolithic date

Plate 8: Pit **812** (left), which produced a Neolithic date

Plate 9: Surfaces and demolition deposits relating the nineteenth and twentieth century remains of Goetra-uchaf farm in Trench, seen in the north-west-facing section in Trench 20. The concrete foundation (**2025**), relating to the final phase of building on the site.

Plate 10: Trench 20 during excavation showing postholes **2005**, **2007**, **2013** and **2017**

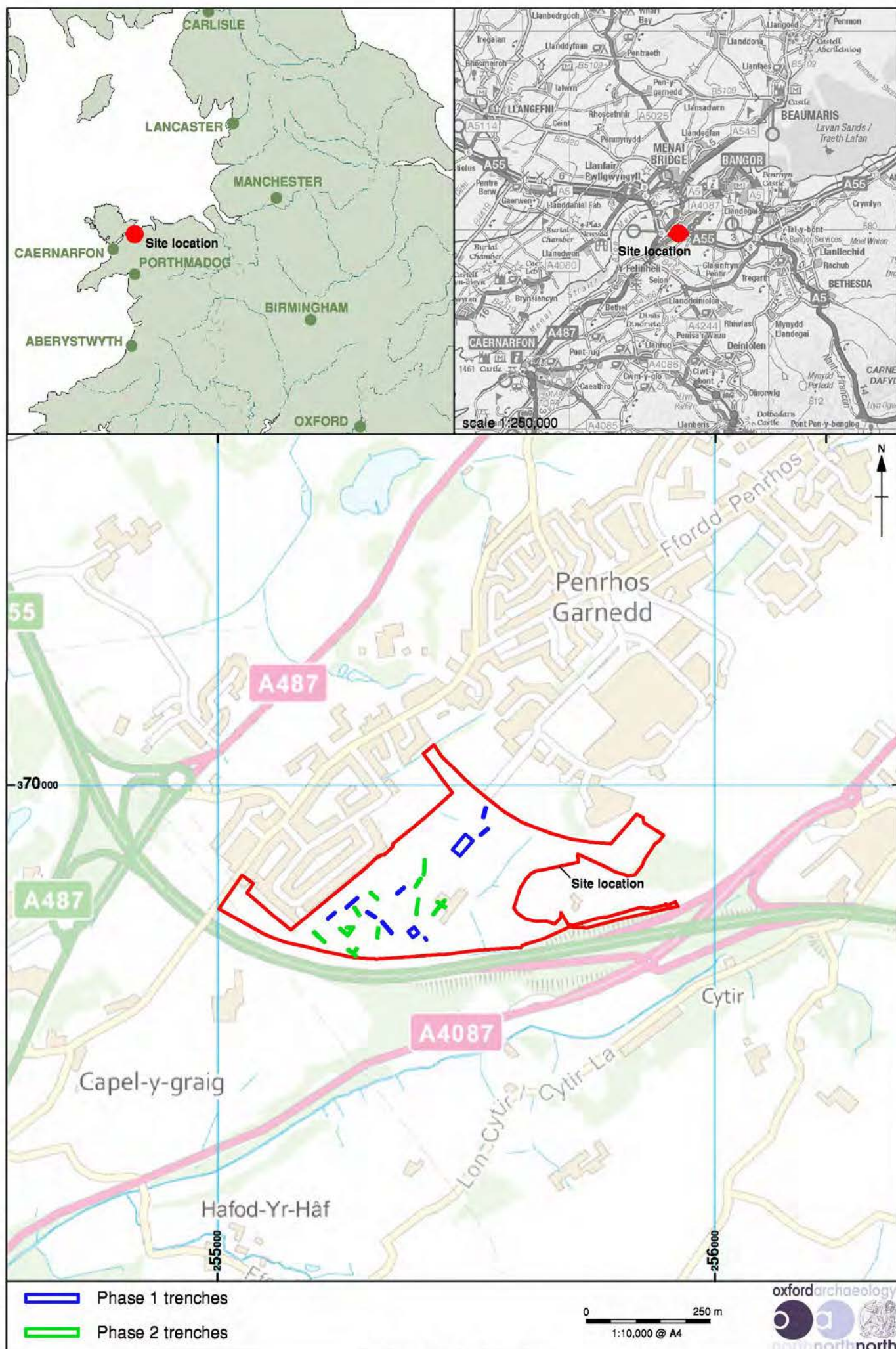


Figure 1: Site location

Based upon the Ordnance Survey mapping with the permission of the Controller of Her Majesty's Stationery Office ©Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Oxford Archaeology Licence No. AL 100005569 (2013).

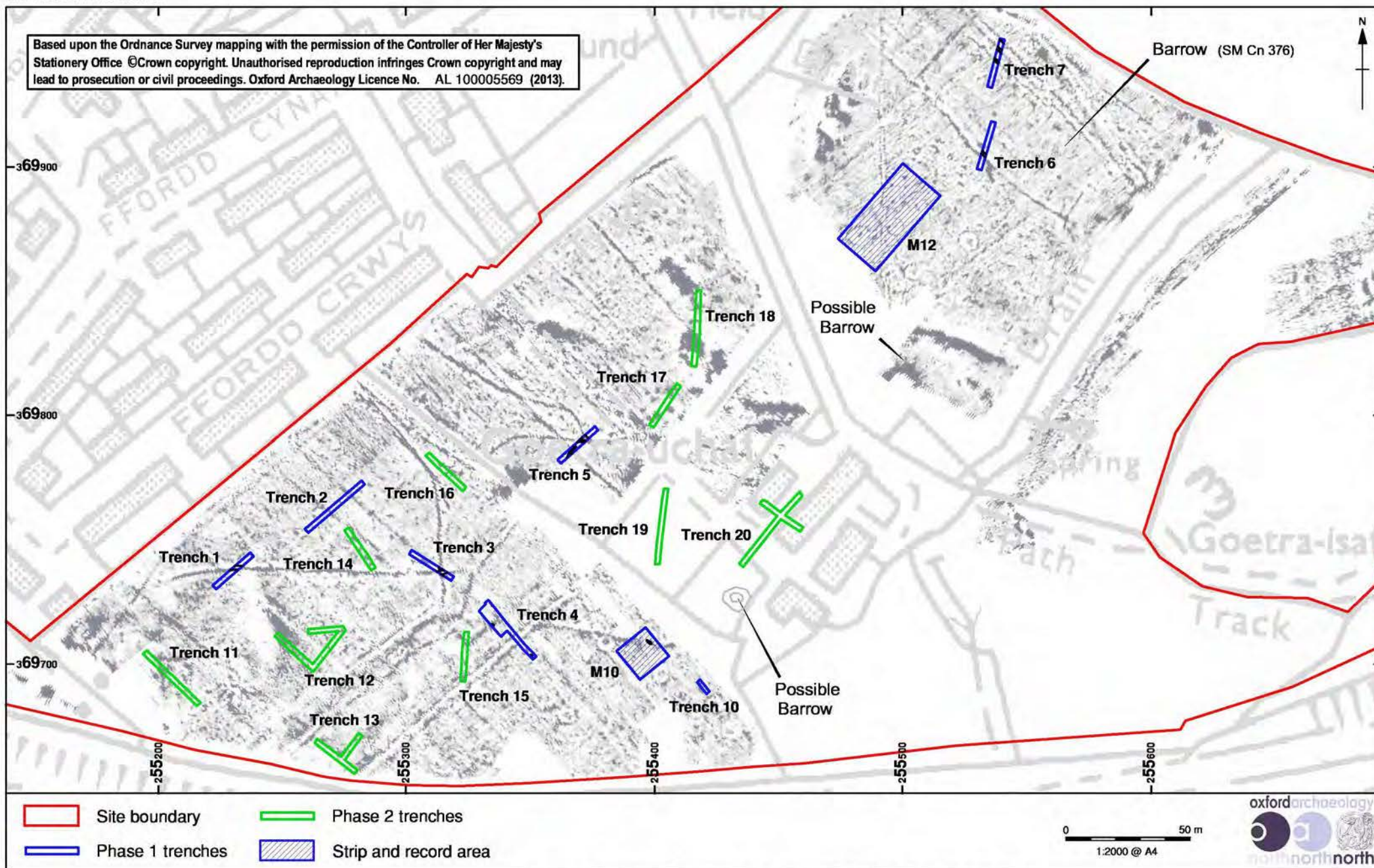


Figure 2: Trench location plan superimposed on the geophysical survey results

Based upon the Ordnance Survey mapping with the permission of the Controller of Her Majesty's Stationery Office ©Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Oxford Archaeology Licence No. AL 100005569 (2013).

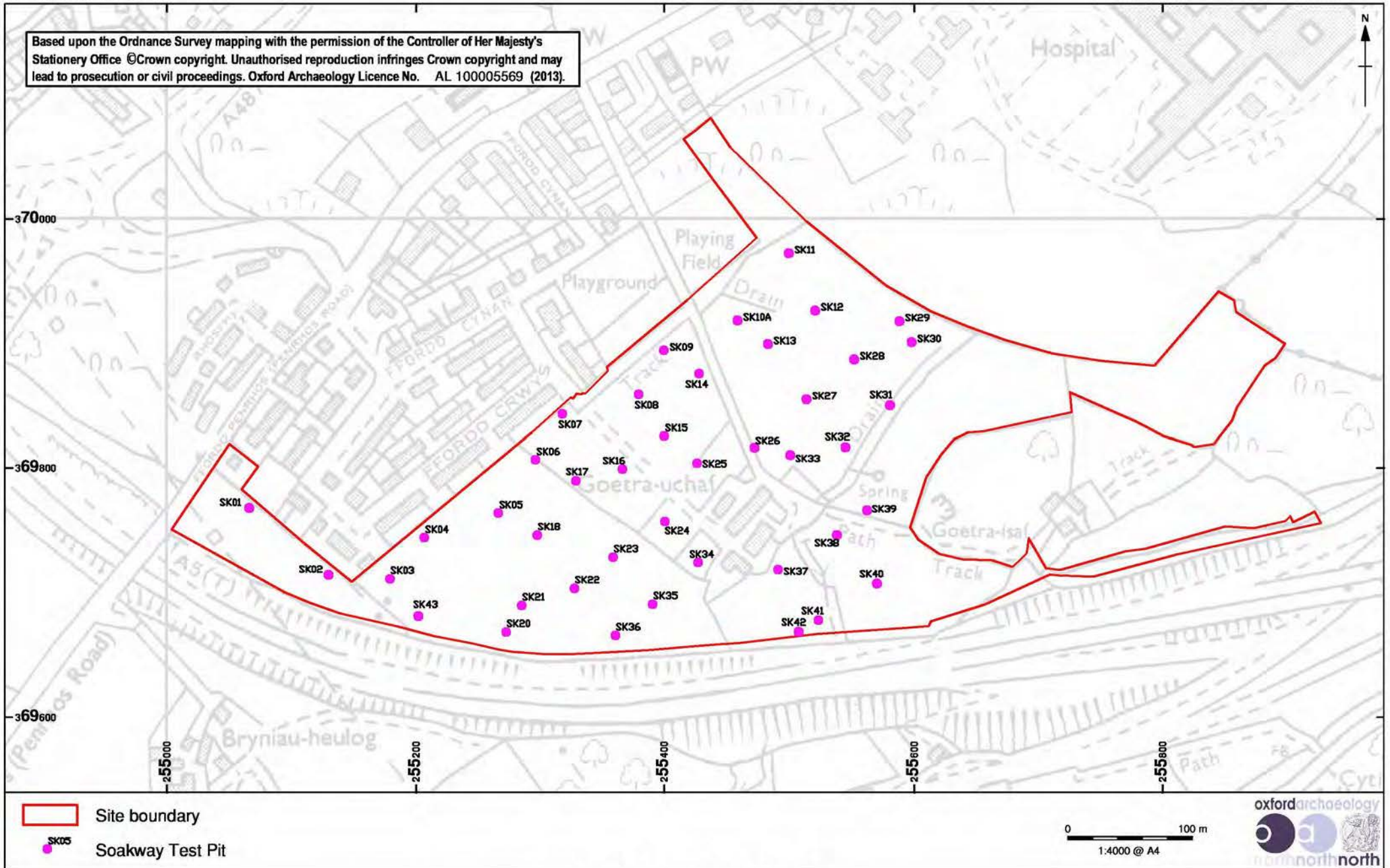


Figure 3: Location of test pits



Figure 4: Plan of fields belonging to Goetra-Uchaf and Goetra-Isaf, based on nineteenth century maps, land tax assessments, and the geophysical survey

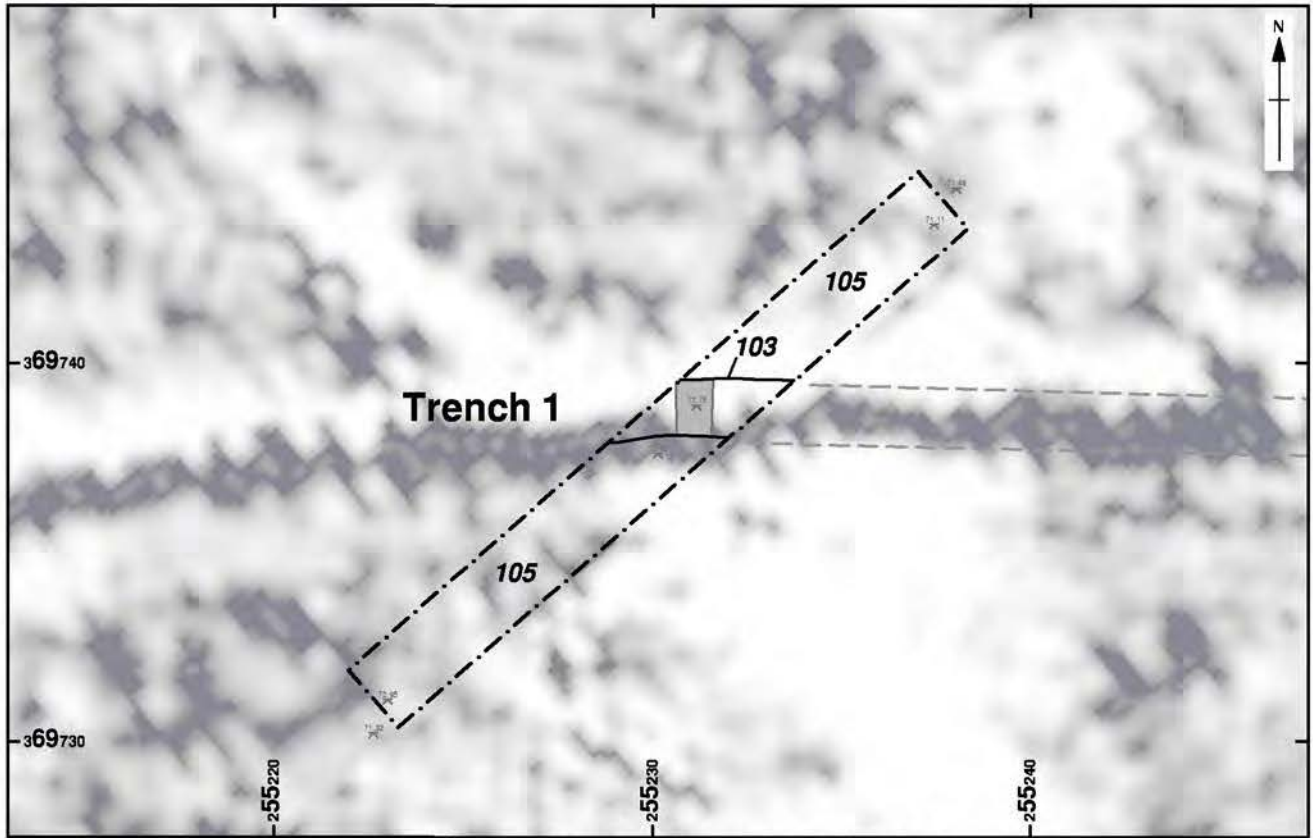


Figure 5: Archaeological features in Trench 1

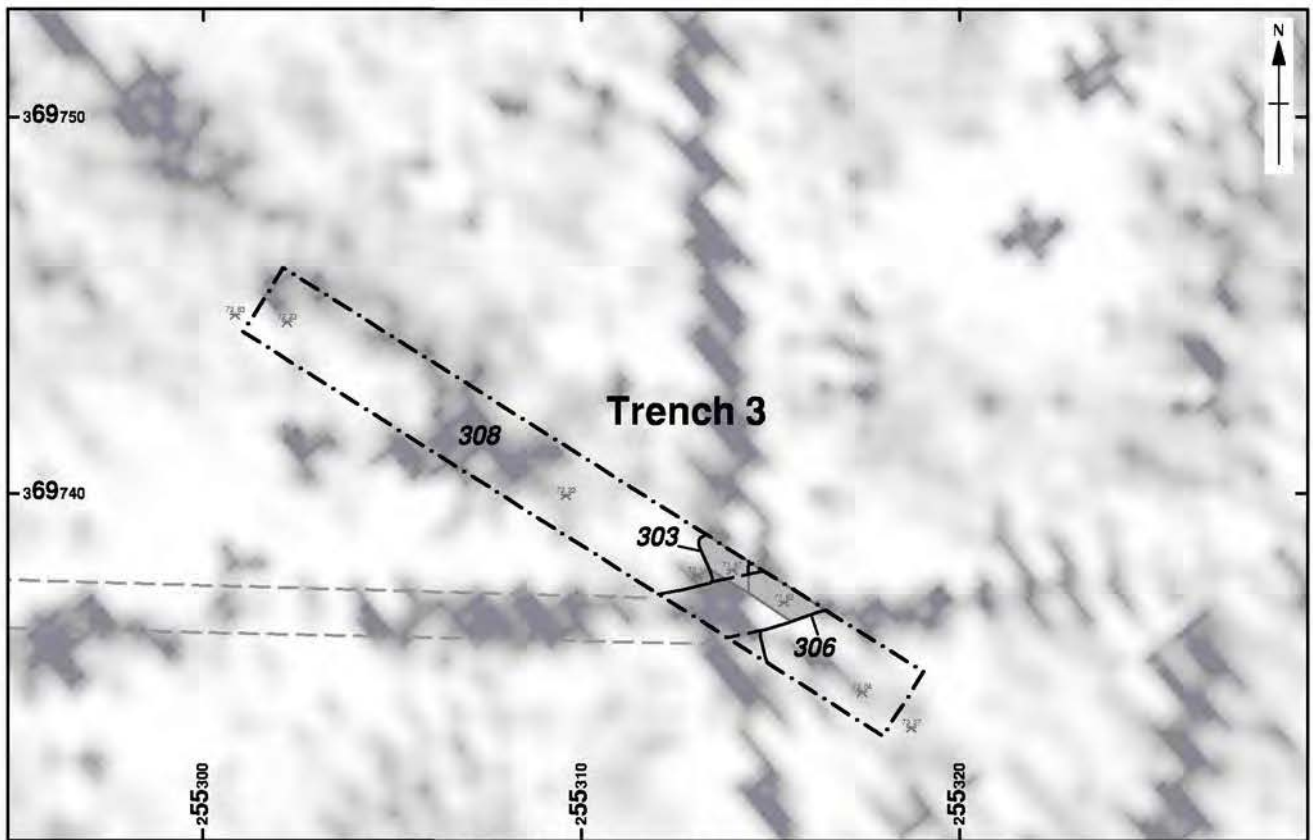


Figure 6: Archaeological features in Trench 3

 Limit of excavation Excavated section
 Archaeological feature **105** Context number 72.27 Level

0 5 m
1:200 @ A4

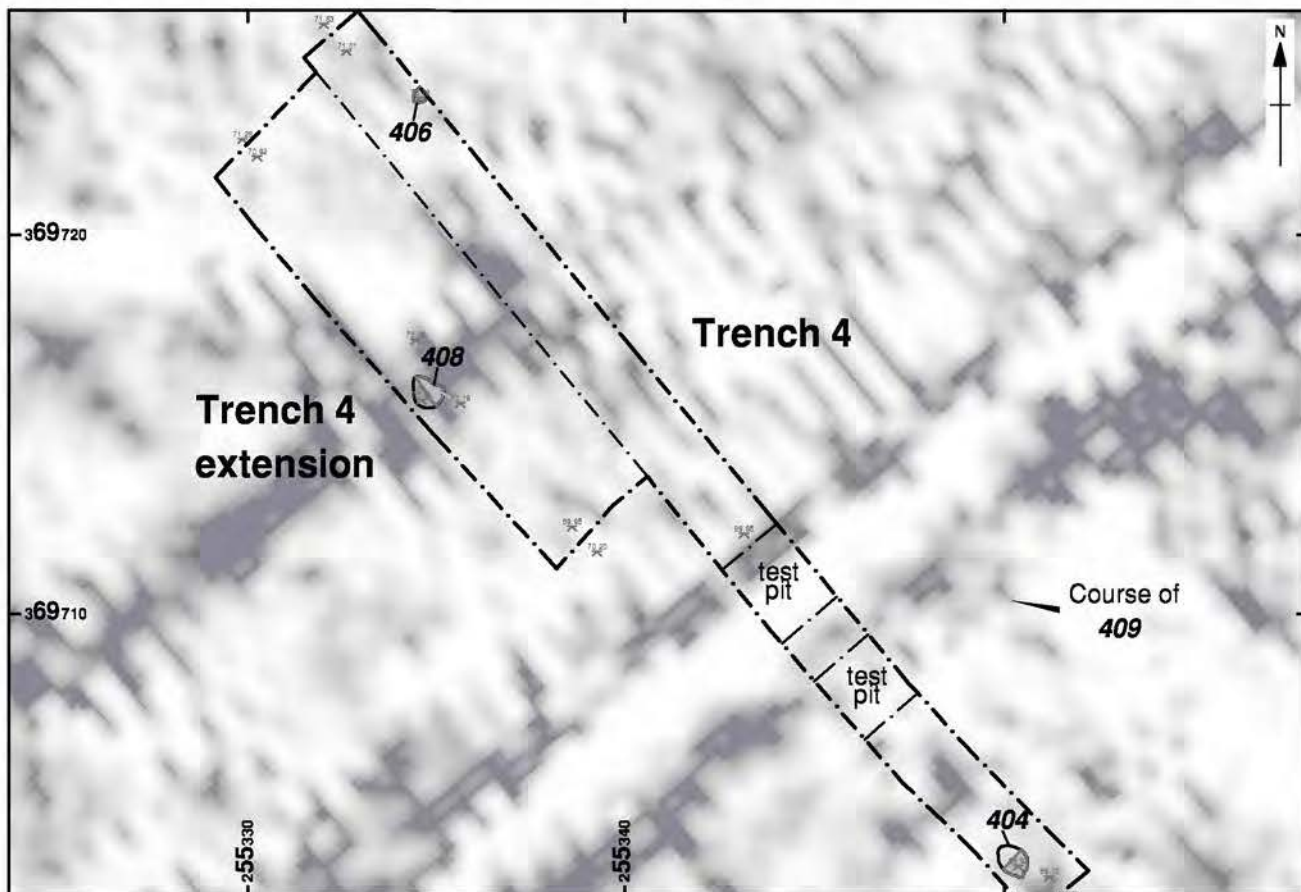


Figure 7: Archaeological features in Trench 4

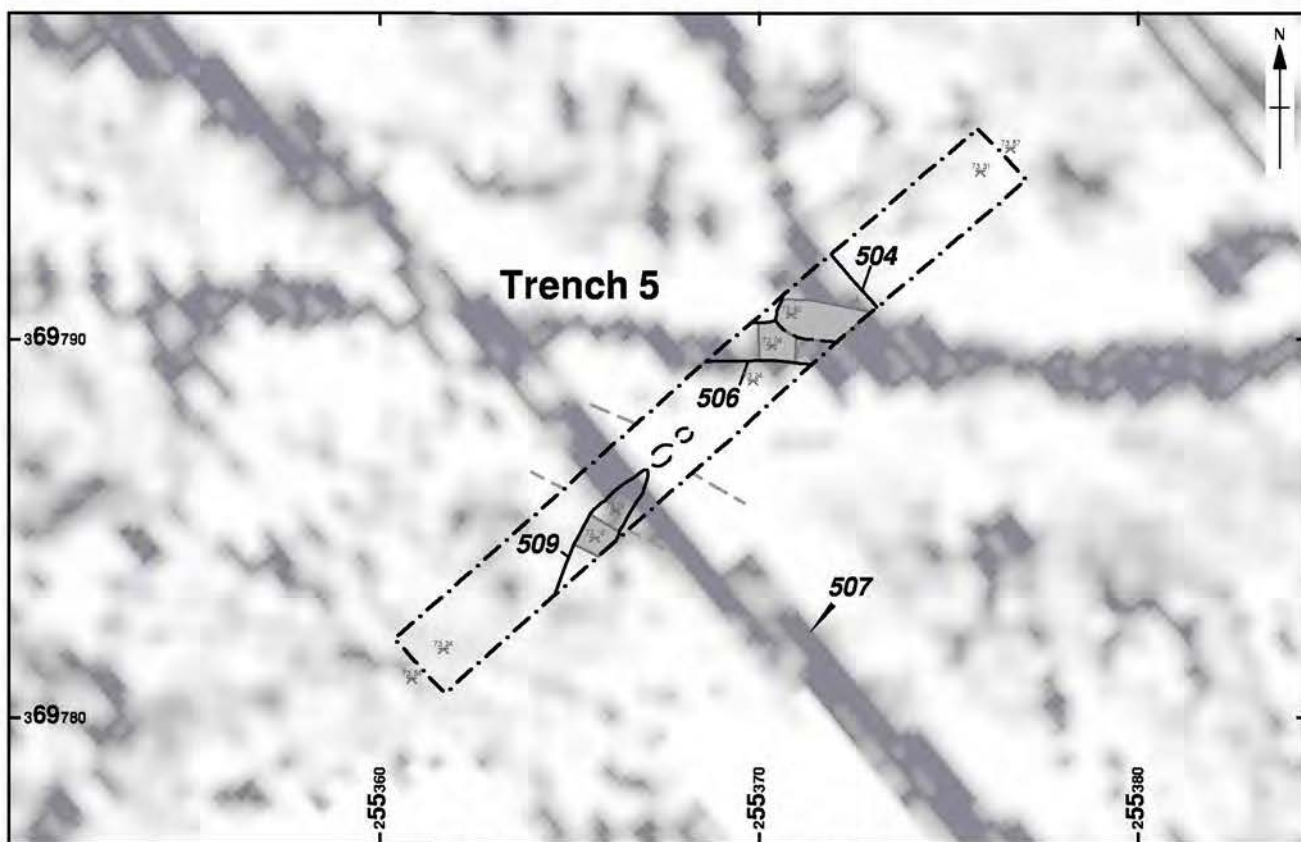




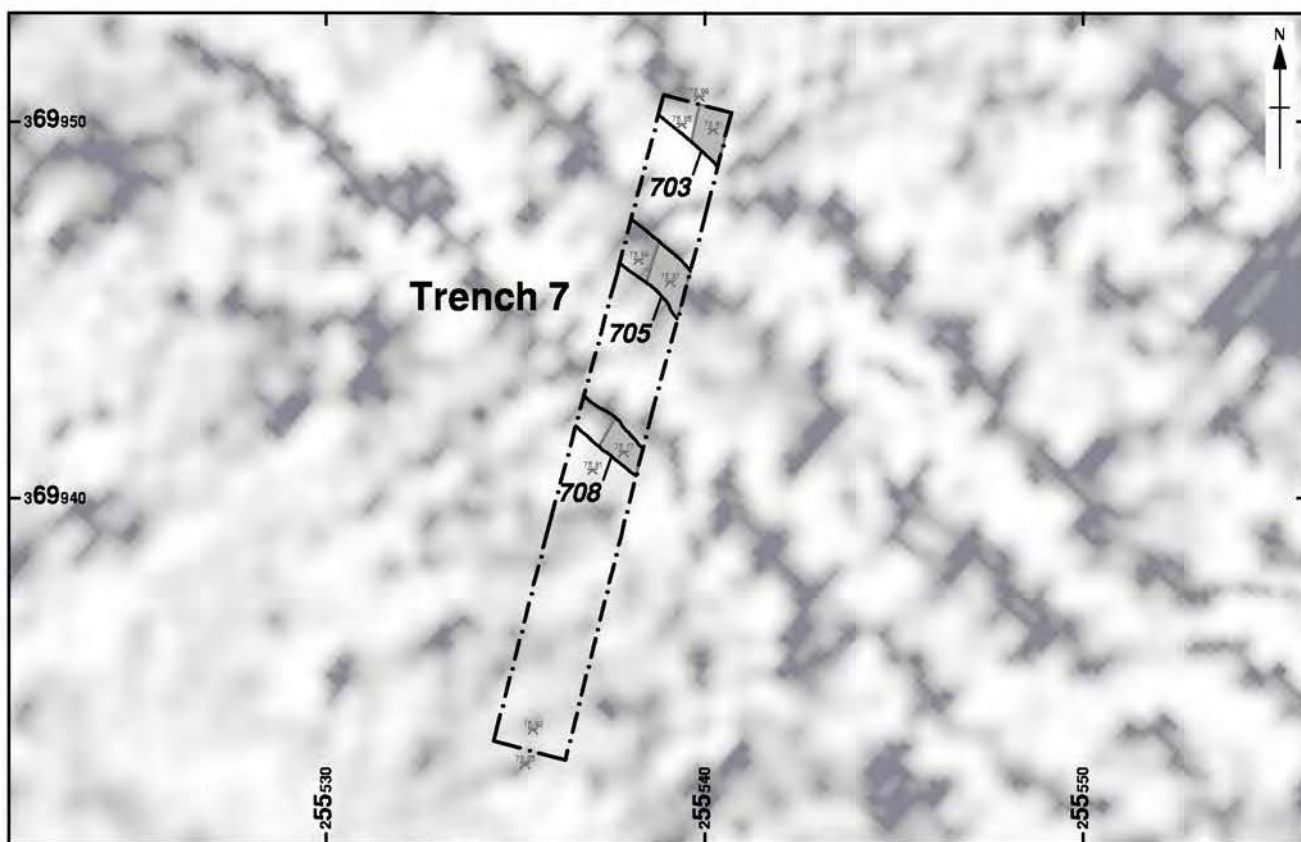
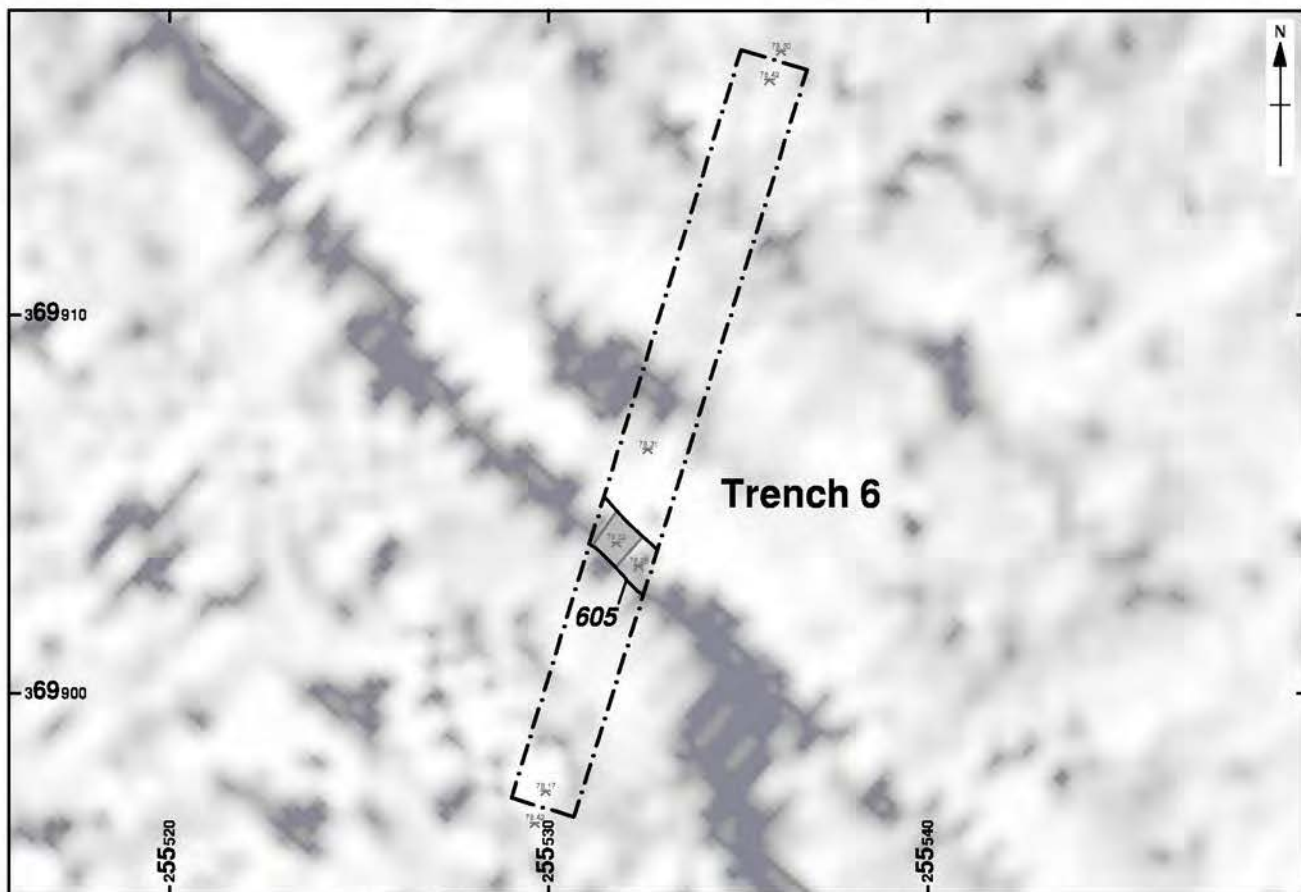


Figure 8: Archaeological features in Trench 5

- | | |
|--|---|
|  Limit of excavation |  Excavated section |
|  Archaeological feature | 509 Context number |
| |  Level |

0 5 m
1:200 @ A4



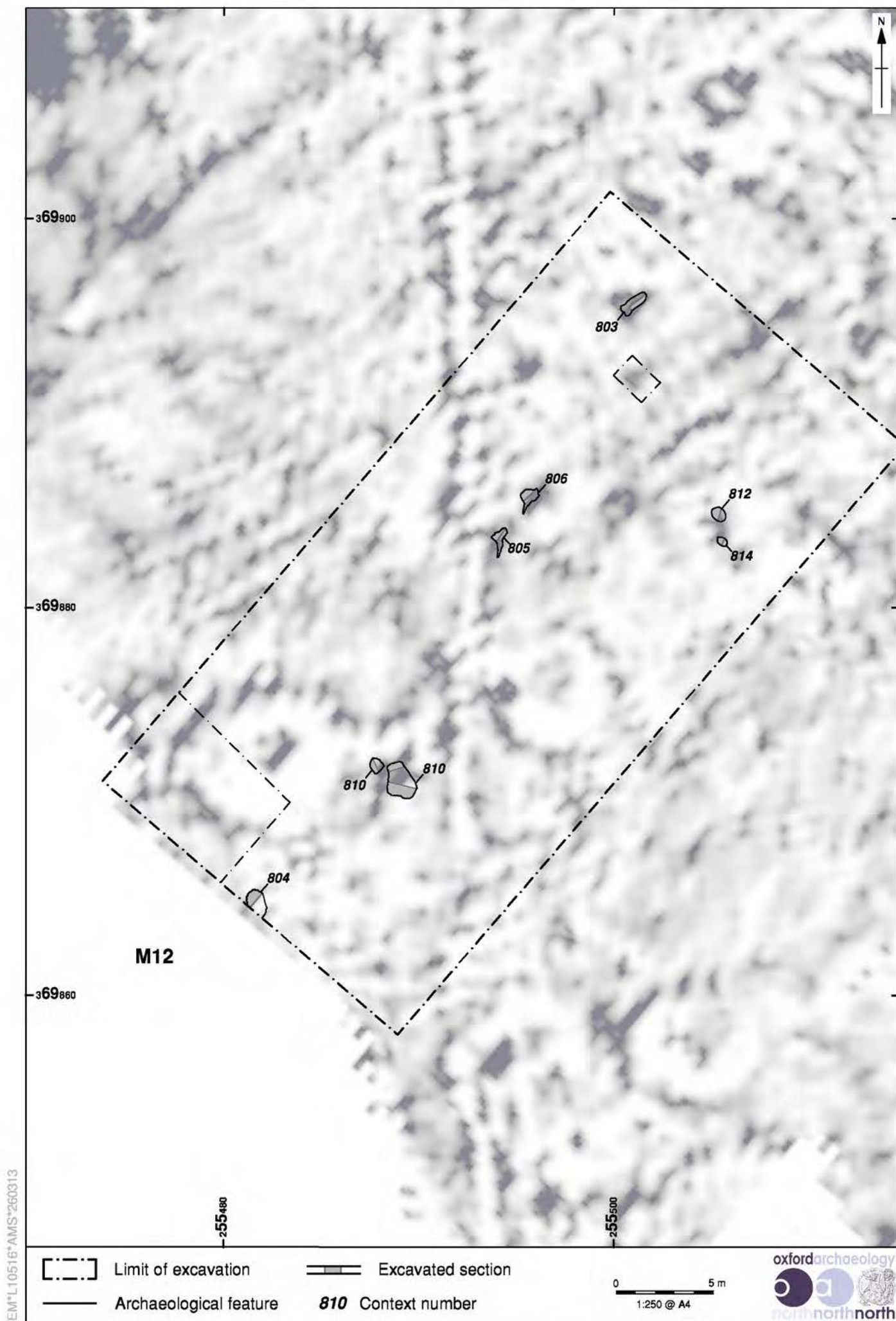


Figure 11: Archaeological features from strip and record area M12

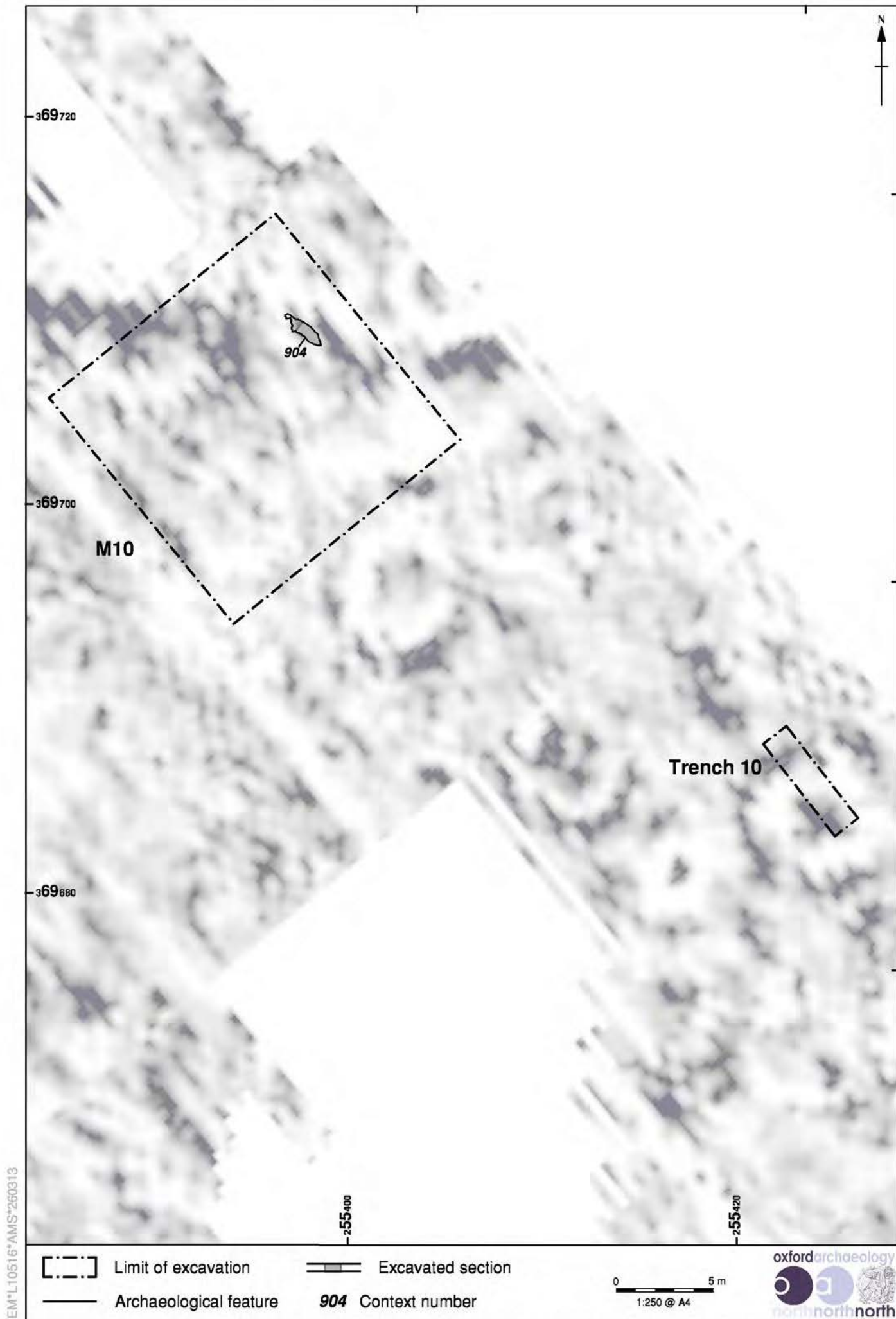
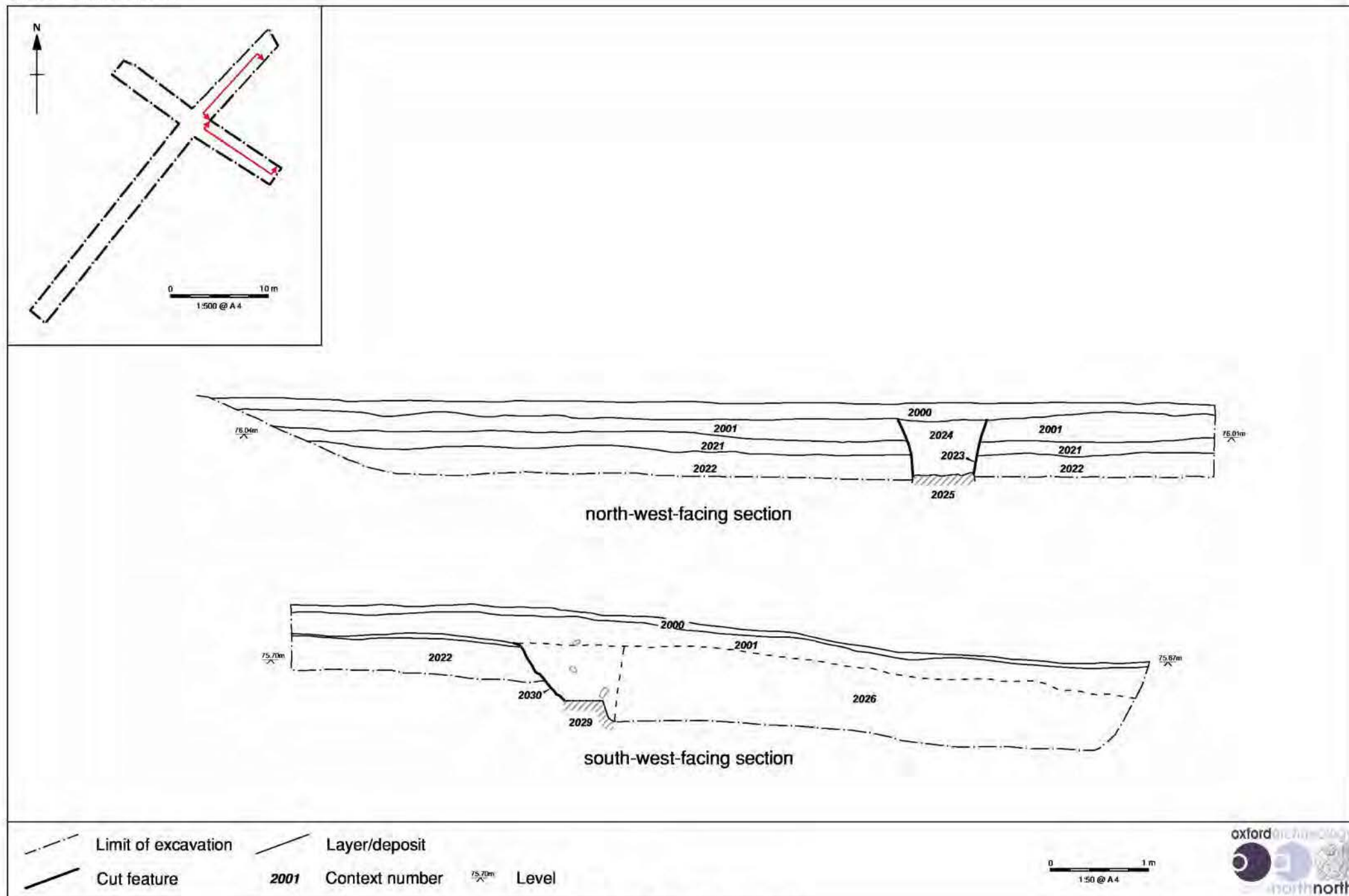


Figure 12: Archaeological features from strip and record area M10, and Trench10



APPENDIX 1: PROJECT BRIEF

DESIGN BRIEF FOR ARCHAEOLOGICAL ASSESSMENT AND EVALUATION

Site: Land off Penrhos Road, Bangor

Date: 17th July 2012

National Grid Reference: 255500, 370000

Planning reference: Pre-application Applicant: Redrow Homes

This design brief is only valid for six months after the above date. After this period Gwynedd Archaeological Planning Service should be contacted.

It is recommended that the contractor appointed to carry out the archaeological work visits the site of the proposed development and consults the regional Historic Environment Record (HER) for north-west Wales before completing their specification. Gwynedd Archaeological Planning Service cannot guarantee the inclusion of all relevant information in the design brief.

Key elements specific to this design brief have been highlighted.

1.0 Site Location and Description

- 1.1 For the purposes of this brief the site comprises an irregularly shaped plot totalling approximately 13.86 hectares in the Penrhosgarnedd area of Bangor, Gwynedd. The city of Bangor is located on the north coast of Wales, on the southern side of the Menai Strait.
- 1.2 The site consists mainly of agricultural land at the edge of existing development, and includes the existing farmstead of Goetre Uchaf. The site is bordered to the north by Ysbyty Gwynedd, to the east by agricultural land, to the south by the A55, and to the west by residential development. Internal boundaries are defined by hedgerows. The existing ground conditions and nature of agricultural usage is unknown at the time of writing.
- 1.3 The application site is set at approximately 80-90m OD, with a generally southerly/ south-easterly aspect.

2.0 Archaeological Background

- 2.1 The proposed development site includes the Goetre Uchaf barrow (scheduled monument Cn376); a second possible barrow, affected by historic quarrying, is recorded approximately 140m to the south-west of this (PRN 22). Other archaeological records within the site comprise a flint scraper (PRN 2) found in association with PRN 22 and an antiquarian reference to the discovery of a collection of querns approximately at the south-eastern boundary of the site (PRN 25).
- 2.2 An archaeological watching brief was carried out on cabling work (within the site) in the vicinity of Goetre Uchaf in 2010 (Gwynedd Archaeological Trust report 906). Despite the relatively limited dimensions of the work, a probable burnt mound and two undated intercutting ditches were recorded. This indicates the survival of undisturbed archaeological deposits within the site.
- 2.3 The extent, nature and significance of the archaeological resource above and below ground requires clarification in order to inform the development design and subsequent planning decisions at the site.

3.0 The nature of the development and archaeological requirements

- 3.1 Planning consent is being sought for the residential development of the site, including access roads, amenity space, etc.
- 3.2 This is a design brief for the first phase of a staged programme of archaeological works, to be undertaken prior to planning consent, in accordance with guidelines set out in Planning Policy Wales 2011 and Welsh Office Circular 60/96 (Planning and the Historic Environment: Archaeology). This phase will comprise an archaeological desk-based assessment and geophysical survey.
- 3.3 The objective of this programme of archaeological works is to make full and effective use of existing information to establish the archaeological significance of the site; to assess the impact of the development proposals on surviving monuments or remains; and to help inform future decision making, design solutions and potential mitigation strategies.
- 3.4 Following the desk-based assessment and geophysical survey, and informed by the findings of these elements, a programme of trial trenching will be required in order to verify the presence or absence of remains, their extent, nature, quality and character. Because it is impossible to state at this stage what the scope of this further evaluation might be, this will be covered by a separate brief.
- 3.5 Any additional stages of work further to that described by this brief will require prior approval of a new detailed specification by Gwynedd Archaeological Planning Service.
- 3.6 This design brief should be used by the archaeological contractor as the basis for the preparation of a detailed written archaeological specification. The specification must be submitted to the Gwynedd Archaeological Planning Service for approval before the work commences.
- 3.7 The specification should contain, as a minimum, the following elements:
- non-technical summary
 - details of the proposed works as precisely as is reasonably possible, indicating clearly on a plan their location and extent
 - a research design which sets out the site-specific objectives of the archaeological works
 - field methodology
 - post-fieldwork methodology
 - the level and grade of all key project staff
 - details of external specialists
 - a timetable for the proposed works, including contingency if appropriate
 - the intended method of publication
 - archive deposition
 - reference to relevant legislation
 - health and safety considerations
 - monitoring procedures

4.0 Archaeological Programme Detail

Desk-based assessment detail

- 4.1 The assessment must consider the following:
- a) the nature, extent and degree of survival of archaeological sites, structures, deposits and landscapes within the study area through the development of an archaeological deposit model. This deposit model should reflect accurately the state of current knowledge and provide a research agenda for further work if necessary [See 4.2 below for further details]

- b) the significance of any remains in their context both regionally and nationally
 - c) the history of the site [See section 4.3 below for further details]
 - d) the potential impact of any proposed development on the setting of known sites of archaeological importance.
- 4.2 Development of the archaeological deposit model will involve the following areas of research:
- a) collation and assessment of all relevant information held in the HER
 - b) assessment of all available excavation reports and archives (including unpublished and unprocessed material) affecting the site and its setting
 - c) assessment of all extant aerial photographic (AP) evidence and, where relevant, a re-plotting of archaeological and topographic information by a suitably qualified specialist at an appropriate scale. The main source of archaeological aerial photographic records is held at the Royal Commission on Ancient and Historical Monuments in Wales (RCAHMW), Aberystwyth
 - d) assessment of archive records held at Gwynedd Archives, Caernarfon, and as appropriate, RCAHMW and University College Bangor
 - e) assessment of the environmental potential of the archaeological deposits through existing data or by inference
 - f) assessment of the faunal potential of the archaeological deposits through existing data or by inference
 - g) assessment of the artefactual potential of the archaeological deposits through existing data or by inference
 - h) assessment of available geotechnical information for the area including the results of test pits and boreholes
 - i) assessment of the present topography and land use of the area through maps and site inspection
- 4.3 Assessment of the history of the site will involve the following:
- a) a review of relevant published sources
 - b) an analysis of relevant maps, plans and other relevant illustrative material. Cartographic evidence is held at the County Record Offices, including tithe maps, enclosure act plans, estate maps and all editions of the Ordnance Survey. Place and field-name evidence from these sources must be considered.
 - c) an analysis of the historical documents (e.g. county histories, local and national journals and antiquarian sources) held in museums, libraries or other archives, in particular local history and archives library.
 - d) a review of the aerial photographic evidence.

Archaeological field evaluation detail

- 4.4 The following non-destructive field evaluation techniques must be employed as part of this phase of work:
- Field visit / walk-over of all accessible areas.
 - A high resolution geophysical survey of all feasible parts of the site. A narrow sampling interval of 0.25m, traverse spacing of 0.5m, should be employed for magnetometer survey in order to identify discrete features.
- 4.5 This work should be informed by desk-based research. The effectiveness of the selected technique should be established through a test area before undertaking survey of the whole area and alternative methods of evaluation considered if necessary.

5.0 Results

- 5.1 The results must be presented in a bound report and should be detailed and laid out in such a way that data and supporting text are readily cross-referenced. **The HER Officer should be**

contacted to ensure that any sites or monuments not previously recorded in the HER are given a Primary Record Number (PRN) and that data structure is compatible with the HER.

- 5.2 The deposit model should be presented graphically in plan and, where appropriate, in profile and at a scale that is commensurate with subsequent use as a working document.
- 5.3 Within the report an attempt should be made to indicate areas of greater or lesser archaeological significance and the sites should be ranked in level of overall archaeological importance (locally, regionally and nationally).
- 5.4 All relevant aerial photographs, re-plots and historic maps must be included and be fully referenced. Any site photographs included in the report should be appropriately captioned and clearly located on a suitably scaled site plan. The final report should specifically include the following:
 - a copy of the design brief and agreed specification
 - a location plan
 - all identified features and significant finds plotted on an appropriately scaled site plan
 - a gazetteer of all located sites with full dimensional and descriptive detail including grid reference and, where possible, period
 - a full bibliography of sources consulted
 - an archive compact disc
- 5.5 Any relevant desk-based sources included for the purposes of interpretation and analysis must be fully referenced, and related to both the archaeological mitigation work and the development proposals.
- 5.6 The report should include an assessment of the potential for further archaeological investigation and give recommendations for an appropriate future strategy.
- 5.7 The methodology for any subsequent phase of the archaeological programme must consider the use of the following techniques:
 - a) alternative methods of ground survey
 - b) a programme of archaeological trial trenching, test pits and/or cores to investigate the archaeological deposit model in more detail
 - c) strip, map and sample
 - d) design modification to preserve remains in situ
 - e) archaeological building recording
 - f) archaeological excavation
 - g) archaeological survey / recording
 - h) archaeological watching brief on construction works

6.0 General requirements

- 6.1 The archaeological assessment and evaluation must be undertaken by an appropriately qualified individual or organisation, fully experienced in work of this character.
- 6.2 Details, including the name, qualifications and experience of the project director and all other key project personnel (including specialist staff) should be communicated to the Gwynedd Archaeological Planning Service and all written work attributed to an author(s).
- 6.3 Contractors and subcontractors are expected to conform to standard professional guidelines. The following are of particular relevance to this project:
 - English Heritage, 1991. *Management of Archaeological Projects (MAP2)*

- English Heritage, 2006. *Management Of Research Projects in the Historic Environment (MORPHE)*
 - Brown D. H., 2007. *Archaeological Archives A guide to best practice in creation, compilation, Transfer and curation*. Archaeological Archives Forum
 - Richards, J. & Robinson, D., 2000. *Digital Archives from Excavation and Fieldwork: Guide to Good Practice (Second Edition)*. The Archaeology Data Service Guide to Good Practice: Oxbow Books <http://ads.ahds.ac.uk/project/goodguides/excavation/>
 - The Institute for Archaeologists, 1985 (revised 2010). *Code of Conduct*
 - The Institute for Archaeologists, 1990 (revised 2008). *Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology*
 - The Institute for Archaeologists, 1994 (revised 2009) *Standard and Guidance for Archaeological Desk-Based Assessment*
 - The Institute for Archaeologists 1994 (revised 2008) *Standard and Guidance for Archaeological Field Evaluation*
 - The Institute for Archaeologists, 2001 (revised 2008). *Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials*
 - The Institute for Archaeologists, 2008. *Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives*
- 6.4 Many people in North Wales speak Welsh as their first language, and many of the archive and documentary references are in Welsh. Contractors should therefore give due consideration to their ability to understand and converse in Welsh.
- 6.5 The archaeological contractor must satisfy themselves that all constraints to groundworks have been identified, including the siting of live services, Tree Preservation Orders and public footpaths. Gwynedd Archaeological Planning Service bears no responsibility for the inclusion or exclusion of such information within this brief.
- 6.6 Any changes to the specifications that the archaeological contractor may wish to make after approval by this office should be communicated to Gwynedd Archaeological Planning Service and approved before implementation.
- 6.7 Care must be taken in dealing with human remains and the appropriate environmental health regulations followed. Gwynedd Archaeological Planning Service and the local Coroner must be informed immediately human remains are discovered.
- 6.8 Arrangements for the long-term storage and deposition of all artefacts must be agreed with the landowner and Gwynedd Archaeological Planning Service before the commencement of investigation.
- 6.9 The involvement of Gwynedd Archaeological Planning Service should be acknowledged in any report or publication generated by this project.
- 6.10 A full archive including plans, photographs, written material and any other material resulting from the project should be prepared in accordance with standard guidance. All plans, photographs and descriptions should be labelled, crossreferenced and lodged in an appropriate place (to be agreed with Gwynedd Archaeological Planning Service) within six months of the completion of the project.
- 6.11 Two copies of the bound report must be sent to the address below, one copy marked for the attention of the Development Control Archaeologist, the other for attention of the HER Officer, who will deposit the copy in the HER.

7.0 Curatorial monitoring

- 7.1 The project will be monitored by Gwynedd Archaeological Planning Service to ensure the fulfilment of the brief and specifications. The Development Control Archaeologist will normally review the progress of reports and archive preparation. The archaeological contractor must inform Gwynedd Archaeological Planning Service in writing of the proposed start dates for the project and any subsequent phases of work.

8.0 Further information

- 8.1 This document outlines best practice expected for a programme of archaeological mitigation but cannot fully anticipate the conditions that will be encountered as work progresses. If requirements of the brief cannot be met they should only be excluded or altered after gaining written approval of the Gwynedd Archaeological Planning Service.
- 8.2 Further details or clarification of any aspects of the brief may be obtained from the Development Control Archaeologist at the address below.
Jenny Emmett
Archaeolegydd Rheoli Datblygiad -
Development Control Archaeologist
Gwasanaeth Cynllunio Archaeolegol Gwynedd - Gwynedd Archaeological Planning Service
Craig Beuno, Ffordd Y Garth, Bangor, Gwynedd LL57 2RT
Ffôn/Tel: 01248 370926
Ffacs/Fax: 01248 370925
jenny.emmett@heneb.co.uk

Glossary of terms

Archaeological Contractor

A professionally qualified individual or an organisation employing professionally qualified archaeological staff, able to offer appropriate and satisfactory treatment of the archaeological resource, who is retained by the developer to carry out archaeological work either prior to the submission of a planning application or as a requirement of the planning process.

Archaeological Curator

A person, or organisation, responsible for the conservation and management of archaeological evidence by virtue of official or statutory duties. In north-west Wales the archaeological advisors to the Local Planning Authorities are the Gwynedd Archaeological Planning Service, who work to the Welsh Archaeological Trusts' Curators' Code of Practice.

Archive

An ordered collection of all documents and artefacts from an archaeological project, which at the conclusion of the work should be deposited at a public repository, such as the local museum.

Brief

The Association of Local Government Archaeological Officers (1993) defines a brief as an outline framework of the planning and archaeological situation which has to be addressed together with an indication of the scope of works that will be required.

Historic Environment Record (HER)

A documentary record of known sites in a given area. In north-west Wales the HER is curated by the curatorial division of the Gwynedd Archaeological Trust.

Specification

The Association of Local Government Archaeological Officers (1993) defines a specification as a schedule of works outlined in sufficient detail to be quantifiable, implemented and monitored.

Watching brief

A formal programme of observation during non-archaeological works in order to identify, investigate and record any archaeological remains which may be present.

APPENDIX 2: PROJECT DESIGN FOR THE ARCHAEOLOGICAL EVALUATION

1.1 PROJECT BACKGROUND

- 1.1.1 Redrow Homes have commissioned Oxford Archaeology North (OA North) to undertake an archaeological investigation of land off Penrhos Road, Bangor, Gwynedd (NGR centred SH 55488 69830). Proposals are currently being submitted for a residential development on the site, which equates to an area of approximately 13.5ha. The investigation is being carried out in a phased manner, with each stage informing the next, and in consultation with Gwynedd Archaeological Planning Service (GAPS). The first stage was undertaken during July and August 2012 and included a desk-based assessment and geophysical survey (OA North 2012) to establish the archaeological resource and its significance across the site, together with a watching brief maintained during a geotechnical site investigation (SI). The results of this first stage has informed the requirements for a subsequent second stage, in the form of evaluation trial trenching that will be divided into two phases at the request of GAPS. Phase 1 of the trial trenching will target features of potential high archaeological significance identified in the initial assessment (*ibid*), whilst Phase 2 is likely to be more general sampling across the site.
- 1.1.2 The following project design includes the proposals for the Phase 1 evaluation, which have been agreed verbally with GAPS. In addition to this, a second phase of watching brief will also be maintained simultaneously on site during the excavation of geotechnical percolation test pits. This will follow the same methodology as the previous watching brief (*ibid*), for which a project design has already been compiled and agreed by GAPS. The results will be incorporated within the Phase 1 trenching report.
- 1.1.3 The site is an area of agricultural land surrounding the now demolished farmstead of Goetre Uchaf, and was initially identified by GAPS as having a high potential for buried archaeological remains to exist; the known archaeological resource consists of a scheduled barrow (Cn 376) of probable Bronze Age date, with a second possible barrow (PRN 22) positioned 140m to the south-west of this that would appear to have been affected by historic quarrying. Other archaeological assets include a flint scraper (PRN 2) found in association with the barrow (PRN 22), and an antiquarian reference to the discovery of a collection of querns on the south-eastern boundary of the site. Furthermore, a probably burnt mound and two undated intercutting ditches were recorded during a programme of watching brief for the purposes of the excavation of a cable trench in 2010. Consequently, GAPS requested that a programme of archaeological work is undertaken to inform the planning process.

1.2 ARCHAEOLOGICAL CONTEXT AND RESULTS OF THE FIRST STAGE OF INVESTIGATION

- 1.2.1 Activity in and around the proposed development area is known from at least as early as the Bronze Age (2400 – 700 BC), when burial mounds were created along the edge of the plateau above the Nant y Garth stream valley. The landuse of the area during the Iron Age (700 BC - AD 43), and early historical periods (AD 43 - 1066) is not known, but from the medieval or post-medieval periods until the later twentieth century the character of the local area was dominated by agriculture. The suburban extent of Bangor spread gradually south-westwards, as ribbon development along Penrhos Road, and a residential agglomeration with a hospital formed at Penrhos-Garnedd.
- 1.2.2 The desk-based assessment and walkover survey identified 43 heritage assets within the study area (*ibid*), including two prehistoric barrows, one of which, Goetre-uchaf barrow, is a scheduled monument (CN 376), a group of possible barrows, a group of circular features that might also be indicative of burial monuments, and a burnt mound. Most of the remaining sites were associated with the agricultural use of the fields around the Goetre-uchaf and Goetre-isaf farmsteads during the medieval or post-medieval periods, which included field boundaries and green lanes or trackways that may have been established during the medieval period.
- 1.2.3 During the watching brief of the geotechnical investigation, 50 test pits (TP1-50) were excavated measuring approximately 2.5m x 2m, most of which consisted of a mid-brown loamy topsoil overlying an orangey-brown sandy glacial till that included fractured rock

inclusions in places. Bedrock was encountered, on average, at approximately 0.8-1m. In one of the test pits (TP6) a pit of apparent archaeological origin was observed in section measuring approximately 1.1m wide and at least 0.3m thick, between approximately 0.6-0.7m depth, and the base was lined with a burnt deposit containing burnt stone. No finds were retrieved from which to date the pit but a sample was retrieved for radiocarbon dating purposes, which will be undertaken during this first phase of the trial trenching; an assessment of the undated burnt pit fill showed that there is a good potential for the scientific dating of the charcoal but there is no potential for the further analysis of the plant remains.

- 1.2.4 The geophysical survey comprised a detailed magnetometer survey over accessible areas of the site, which showed a number features of largely agricultural origin, many appearing to be of archaeological significance, and a number were attributed to those observed during the walkover. Generally, however, across the whole site there are two distinct set of anomalies that are of archaeological potential; a complexity of linear features, and two areas of discrete circular features. Apart from some modern drainage and areas of plough marks, the majority of the linear features appear to be associated with at least two phases of field systems.

1.3 OXFORD ARCHAEOLOGY NORTH

- 1.3.1 Oxford Archaeology is an educational charity under the guidance of a board of trustees with over 35 years of experience in archaeology, and can provide a professional and cost-effective service. We are the largest employer of archaeologists in the country (we currently have more than 300 members of staff throughout three regional offices in Oxford, Cambridge and Lancaster), and can thus deploy considerable resources with extensive experience to deal with any archaeological obligations you or your clients may have.
- 1.3.2 Oxford Archaeology North has considerable experience of sites of all periods, having undertaken a great number of small and large scale projects during the past three decades. Evaluations, assessments, watching briefs and excavations have taken place within the planning process, to fulfil the requirements of Clients and planning authorities, to very rigorous timetables.
- 1.3.3 OA North has the professional expertise and resources to undertake the project detailed below to a high level of quality and efficiency. OA North is an Institute for Archaeologists (IfA) registered organisation, registration number 17, and all its members of staff operate subject to the IfA *Code of Conduct* (2010).

2. AIMS AND OBJECTIVES

2.1 ACADEMIC AIMS

- 2.1.1 This first phase of evaluation trenching aims to investigate those potential archaeological features identified during the assessment and geophysical survey (OA North 2012) that appear to be significant, and understand any implications for the proposed development at this early stage. This phase will specifically target the two distinct set of anomalies seen in the geophysical survey, the complex of linear features and the two concentrations of circular features. The main aim, given the commercial nature of the development, will be to characterise the level of preservation and date the features, and to provide an understanding of their significance and potential.
- 2.1.2 A sample of charcoal collected during the first phase of watching brief (*ibid*) will also be radiocarbon dated as part of this assessment, contributing to a better understanding the potential and significance of the archaeological resource of the site.

2.2 OBJECTIVES

- 2.2.1 The objectives of the project may be summarised as follows:
- to assess the nature, date, density, extent, function and state of preservation of the archaeological remains;
 - to assess their potential for answering questions about the development of land use during the prehistoric and early historic periods;
 - to understand the relationships between the phases of linear features (possible field systems), and also between the linear and circular features;

- to identify the significance of these features
- to inform subsequent stages of any required archaeological work and inform the planning process.

2.2.2 To these ends, the following programme of archaeological work has been designed, in accordance with English Heritage guidelines (1991 and 2006) and the Institute for Archaeologists (IfA) (2008a-c and 2010) standards and guidelines;

- **Strip, map and record:** two areas will be stripped each within the two groups of circular anomalies shown in the geophysical survey (M10 and M12, Fig A attached). The smaller area, measuring 15m x 15m, targeting M10 has been positioned to not only understand the form and function of the circular features but also incorporates an overlap of one of the linear features thought to belong to an early field system complex, thereby exploring the stratigraphical relationship between the two sets. The larger area, measuring 40m x 15m, has been positioned to investigate the circular features in area M12 and incorporate an area of magnetic noise to the north-east to assess whether there is any archaeological association between the geophysical anomalies. These two areas will be cleaned, mapped and recording in accordance with the general trenching methodology;
- **Trial trenching:** a programme of trial trench evaluation to target the principle arrangement of linear geophysical survey anomalies, believed to be early field systems, will include five trenches measuring 20m x 2m (Trenches 1, 3, 5-7) and two trenches measuring 30m x 2m (Trenches 2 and 4);
- **Radiocarbon dating:** charcoal from a sample taken from a burnt pit from TP6 during the watching brief of the first phase of geotechnical investigation will be dated. The results will be incorporated into the evaluation report;
- **Report and archive:** an illustrated report of the findings of the evaluation, second phase of the watching brief and the result of the radiocarbon dating will be produced, with an assessment of the significance of the features, for submission to the client and to GAPS. The archive of original records and finds will be deposited with the appropriate museum.

3 HEALTH AND SAFETY

3.1 RISK ASSESSMENT

3.1.1 OA North provides a Health and Safety Statement for all projects and maintains a Company Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997). OA North will liaise with the client to ensure all health and safety regulations are met. A detailed risk assessment will be completed in advance of any on-site works, with continuous monitoring and updating during the fieldwork. This can be supplied to all interested parties on request.

3.1.2 All project staff will wear full basic PPE whilst on site, to include safety helmets, safety boots and high-visibility jackets, and will be CSCS certified. Noise defenders and eye protectors will be made available to staff as necessary. It will be ensured that drivers of plant contracted by OA North will be CITB certified, or equivalent, and that the plant will have the appropriate certification.

3.1.3 All open archaeological sites, especially in the event of deep excavations, will be inspected by the Site Director or other appointed and competent person. These inspection records will be signed and dated, and form part of the on-site Health and Safety folder, which will always be available to all interested parties on request.

3.2 SERVICES

3.2.1 Full regard will, of course, be given to all constraints (services etc.) during the fieldwork as well as to all Health and Safety considerations. As a matter of course the field team will use a Cable Avoidance Tool (CAT) prior to any excavation to test for services. However, this is only an approximate location tool. Any **information regarding services**, i.e. drawings or knowledge of live cables or services, within the study area and held with the client should be

made known to the OA North project manager prior to the commencement of the investigation. If the client does not hold the remaining service drawings, OA North can purchase these at cost on behalf of the client, although this may delay the commencement of the site work.

- 3.2.2 Between Trenches 3 and 4 is an overhead cable. Therefore, advice will be taken from the plant contractor and the necessary precautions, such as the use of restrictors, put into place. Care will be taken to avoid excavating too close to the cables. In addition, the geophysical survey identified two cables, one at either side of the site close to the west and east boundaries, and both running approximately north-east/south-west. It has not been ascertained whether these are live, but it will be treated as such.

3.3 CONTAMINATION

- 3.3.1 Any known contamination issues or any specific health and safety requirements on site should be made known to OA North by the client to ensure all procedures can be met, and that the risk is dealt with appropriately. Should any presently unknown contamination be discovered during excavation, it may be necessary to halt the works and reassess the risk assessment. Should it be necessary to supply additional PPE or other contamination avoidance equipment this will be costed as a variation. All OA staff will maintain a high level of hygiene throughout the duration of the project.

3.4 FENCING REQUIREMENTS

- 3.4.1 Netlon fencing or barrier tape will be used to demarcate the trenches and around features exceeding 0.5m depth. However, should the client take the decision that heras-type security fencing is required then this will be arranged and costed as a variation.

3.5 STAFF ISSUES

- 3.5.1 All project staff will be CSCS qualified, proof of which can be provided in the form of CSCS cards.
- 3.5.2 A toilet and hand washing facilities, together with a messing facility and tool storage area are required during the fieldwork. It is understood that the client has the use of a house adjacent to the site that OA North can use for such purposes.

4 METHOD STATEMENT

4.1 TOPSOIL STRIP, MAP AND RECORD

- 4.1.1 For the areas investigating M10 and M12 (Fig A), the initial phase of work will consist of the stripping and planning of the area. This will be followed by the investigation and recording of features in line with the general trenching methodology described in *Section 4.2*, below.
- 4.1.2 This will aim to:
- expose archaeological remains across both of the archaeological sites by the mechanical removal of topsoil and any masking subsoil;
 - create a pre-excavation plan of exposed deposits;
 - collect datable/activity specific material from the surface of exposed deposits;
 - evaluate the nature, date, extent, level of preservation and significance of the remains.
- 4.1.3 Two areas, measuring 15m x 15m (M10) and 40m x 15m (M12), will be stripped of their topsoil and any other subsoil overburden using a 16 tonne 360° excavator or similar with a toothless bucket.
- 4.1.4 Soils will be excavated in successive spits down to the top of the natural or the top of any archaeological level, whichever is the higher. All machine stripping will be carried out under the direct control of the archaeological team and at a speed which will leave a good standard of finished surface; close attention will be paid to achieving a clean-stripped surface, using the mechanical plant, to reduce the need for extensive hand-cleaning, which uses either hoes, shovel scraping, and/or trowels depending on the soil conditions. Limited areas may still require hand-cleaning, to clarify complex feature intersections. Mechanically excavated spoil will be monitored in order to recover artefacts that will assist in meeting the aims of the project,

before being removed to designated storage areas for each site. Once areas of the site are stripped no plant or machinery will track over these areas.

- 4.1.5 Spoil resulting from the topsoil stripping, and smaller quantities from the excavation, will be stored alongside the excavation areas with a minimum 2m wide access strip between it and the spoil heap. The spoil will be tamped down by the mechanical excavator and stored downhill from the excavation, in an attempt to reduce the risk of silt-laden run-off. Spoil will be transported using a 4 tonne dumper or similar.
- 4.1.6 If stratified land surfaces are encountered mechanical excavation will be to the first archaeological horizon only and re-machining to subsequent horizons will be undertaken during the evaluation of the features.
- 4.1.7 Plans will be maintained as stripping progresses and features will be defined on the ground by a process of scoring around the feature, or other such methods. A general site plan will be produced at an appropriate scale to map the exposed features.
- 4.1.8 The archaeological team will record features as soon as possible following on from the machining, as is practical, to avoid damage from weathering. Conversely, however, over the course of several days, archaeological features can also 'weather-out' and become visible as the minerals within their fills oxidise (i.e. rust) upon exposure to the air. This means that features such as ditches and pits may only be visible after several days.
- 4.1.9 The area will be planned digitally by experienced surveyors utilising GPS to record the sites according to Ordnance Survey (OS) coordinates. A Leica differential GPS will be employed that uses real-time (RTK) corrections using mobile SmartNet technology to achieve an accuracy of $\pm 0.01\text{m}$. The accuracy of the OA North GPS system provides for a quick and effective means of recording the position and extent of sites. The digital survey data will be transferred, via Leica Geo Office (V.4), as shp files into a CAD system (AutoCAD Map 2004), and superimposed onto the embedded digital OS data. Should coverage prevent the use of GPS, a EDM Total Station will be used, based on a site grid related to the national grid obtained from client base mapping. The mapping will include height information across the stripped natural to allow contour modelling of the site should it be required during the post-excavation process.

4.2 TRIAL TRENCHING

- 4.2.1 Seven trenches will be excavated during Phase 1 of the evaluation. Trenches 1, 3, 5-7 will measure 20m x 2m, and Trenches 2 and 4 will measure 30m x 2m. The overburden will be removed by machine (fitted with a toothless ditching bucket) under archaeological supervision, and thereafter excavation will proceed in level spits of a maximum 0.25m each down to the surface of the first significant archaeological or natural deposit, whichever is encountered first. This deposit will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and inspected for archaeological features. All features of archaeological interest will be investigated and recorded unless otherwise agreed by the client and GAPS. It is not anticipated that the trenches will be excavated deeper than 1.2m to accommodate health and safety constraints, although any requirements to excavate below this depth will involve stepping out or battering of the trench sides, which will require the agreement of a variation to the costing.
- 4.2.2 The trenches will be excavated in a stratigraphical manner, whether by machine or by hand, and will be located by the use of differential GPS, based on a site grid related to the national grid obtained from the client base mapping. Altitude information will be established with respect to Ordnance Survey Datum.
- 4.2.3 Any investigation of intact archaeological deposits will be exclusively manual. Selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal. It is hoped that in terms of the vertical stratigraphy, maximum information retrieval will be achieved through the examination of sections of cut features. All excavation, whether by machine or by hand, will be undertaken with a view to avoiding damage to any archaeological features, which appear worthy of preservation *in situ*.
- 4.2.4 All information identified in the course of the site works will be recorded stratigraphically, using a system, adapted from that used by Centre for Archaeology Service of English

Heritage, with sufficient pictorial record (plans, sections, and monochrome contacts) to identify and illustrate individual features. A Harris Matrix will be compiled during the fieldwork. Primary records will be available for inspection at all times.

- 4.2.5 Results of all field investigations will be recorded on *pro forma* context sheets. The site archive will include both a photographic record (both black and white (35mm) and digital shots for illustration purpose) and accurate large scale plans and sections at an appropriate scale (1:50, 1:20 and 1:10). At least one long section of the trench will be recorded. All artefacts and ecofacts will be recorded using the same system, and will be handled and stored according to standard practice (following current Institute for Archaeologists guidelines) in order to minimise deterioration.

- 4.2.6 **Contingency plan:** a contingency costing may also be employed for unseen delays caused by prolonged periods of bad weather, vandalism, discovery of unforeseen complex deposits and/or artefacts which require specialist removal, use of shoring to excavate important features close to the excavation sections etc. This has been included in the costings document and would be utilised in agreement with the client.

4.3 GENERAL PROCEDURES

- 4.3.1 **Environmental Sampling:** environmental samples (bulk samples of 40 litres volume, to be sub-sampled at a later stage) will be collected from stratified undisturbed deposits and will particularly target negative features (gullies, pits and ditches). An assessment of the environmental potential of the site will be undertaken through the examination of suitable deposits by the in-house palaeoecological specialist, who will examine the potential for further analysis. The assessment would include soil pollen analysis and the retrieval of charred plant macrofossils and land molluscs from former dry-land palaeosols and cut features. In addition, the samples would be assessed for plant macrofossils, insect, molluscs and pollen from waterlogged deposits. The costs for the palaeoecological assessment are defined as a contingency and will only be called into effect if suitable deposits are identified.
- 4.3.2 Advice will also be sought as to whether a soil micromorphological study or any other analytical techniques will enhance the understanding of the site formation processes, including the amount of truncation to buried deposits and the preservation of deposits within negative features. Should this be required the costs for analysis have been provided as a contingency.
- 4.3.3 **Faunal remains:** if there is found to be the potential for discovery of bones of fish and small mammals a sieving programme will be carried out. These will be assessed as appropriate by OA North's specialist in faunal remains, and subject to the results, there may be a requirement for more detailed analysis. A contingency has been included for the assessment of such faunal remains for analysis.
- 4.3.4 **Human Remains:** any human remains discovered will be left *in situ*, covered and protected. No further investigation will continue beyond that required to establish the date and character of the burial. GAPS and the local Coroner will be informed immediately. If removal is essential the exhumation of any funerary remains will require the provision of a Home Office license, under section 25 of the Burial Act of 1857. An application will be made by OA North for the study area on discovery of any such remains and the removal will be carried out with due care and sensitivity under the environmental health regulations. Any delays caused by unforeseen and complex excavation of inhumations may be subject to a variation to the cost of the contract and will be agreed with the client.
- 4.3.5 **Treatment of finds:** all finds will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the United Kingdom Institute for Conservation (UKIC) *First Aid For Finds*, 1998 (new edition) and the recipient museum's guidelines.
- 4.3.6 All identified finds and artefacts will be retained, although certain classes of building material can sometimes be discarded after recording if an appropriate sample is retained on advice from the recipient museum's archive curator.
- 4.3.7 **Treasure:** any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996. Where removal cannot take place on the same working day as discovery, suitable security will be employed to protect the finds from theft.

4.4 REPORT

4.4.1 The results of the evaluation and watching brief will be incorporated into the same report. A draft will be initially submitted to the client for approval and subsequently GAPS.

4.4.2 The finalised report will include a bound copy of a written synthetic report to be submitted to the client, together with a digital copy (pdf) on CD. A bound copy will also be submitted to the HER for reference purposes and a copy forwarded to the Development Control Archaeologist (GAPS). The report will present, summarise, and interpret the results of the programme detailed above in order to come to as full an understanding as possible of the significance of the archaeology and its implications to the proposed development. The report will include

- a site location plan related to the national grid
- a front cover to include the planning application number, where relevant, and the NGR
- a concise, non-technical summary of the results
- the circumstances of the project and the dates on which the fieldwork was undertaken
- description of the methodology
- a summary of the historical background of the study area
- appropriate plans showing the location and position of features
- a statement, where appropriate, of the archaeological impact
- photographs as appropriate
- a copy of this project design, and indications of any agreed departure from that design
- the report will also include a complete bibliography of sources from which data has been derived, and a list of any further sources identified but not consulted

4.4.3 **Confidentiality:** all internal reports to the client are designed as documents for the specific use of the client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.

4.5 ARCHIVE

4.5.1 This archive will be collated in accordance with the relevant IfA guidelines and a synthesis will be submitted to the HER (the index to the archive and a copy of the report). OA North will deposit the original record archive of projects (paper, magnetic and plastic media), and a full copy of the record archive together with the with material archive (artefacts, ecofacts, and samples) in an appropriate repository to be agreed with GAPS.

5 OTHER MATTERS

5.1 PROJECT MONITORING

5.1.1 Whilst the work is undertaken for the client, monitoring of the archaeological investigations will be undertaken by Jenny Emmett, the Development Control Archaeologist for GAPS. Consultation will be ongoing as to the discovery of features and requirements for recording throughout the fieldwork. A site monitoring visit will take place on Thursday 15th November 2012.

5.2 PROGRAMME

5.2.1 **Evaluation fieldwork:** the anticipated duration for the strip, map and record, and trial trenching is expected to be three weeks.

5.2.2 **Reinstatement:** the site is currently occupied by livestock. Therefore, unless significant findings require trenches to remain open for inspection for monitoring purposes, the remaining trenches will be reinstated once fully recorded. The subsoil and topsoil will be

replaced in the correct order and the area roughly graded with a machine (no further or more complex reinstatement has been costed).

- 5.2.3 **Report and archive:** approximately six to eight weeks will be required for the compilation of the report and archive following the completion of the fieldwork. An interim statement on any salient results can be produced sooner, if required. The archive will be submitted within approximately six months.

5.3 SCHEDULE

- 5.3.1 The evaluation fieldwork is expected to commence on Monday 12th November 2012 for a duration of approximately three weeks, with both the open strip areas and the trenches being investigated simultaneously. The watching brief of the percolation pits will also be being completed during this time.

5.4 STAFFING

- 5.4.1 The project will be under the direct management of **Emily Mercer** (OA North Senior Project Manager) to whom all correspondence should be addressed.
- 5.4.2 The fieldwork will be undertaken under the direction of **Becky Wegiel** (OA North project officer) who is a highly experienced field archaeologist, used to working with on-site plant, and capable of running sites of all sizes. Becky will be accompanied by a team of up to four additional OA North staff of varying grades, depending on their role within the team. All OA North field staff hold CSCS cards and the vast majority are qualified to degree and often, to post-graduate level.
- 5.4.3 Health and Safety advice will be provided by **Murray Cook** (OA North Project Manager) who is NEEBOSH training.
- 5.4.4 Assessment of any finds from the excavation will be undertaken by OA North's in-house finds specialist **Christine Howard-Davis** (OA North Finds Manager). Christine has extensive knowledge of all finds of all periods from archaeological sites in northern England.
- 5.4.5 Assessment of any palaeoenvironmental samples will be undertaken by or under the auspices of **Elizabeth Huckerby MSc** (OA North project officer). Elizabeth has extensive knowledge of the palaeoecology of the North West through her work on the English Heritage-funded North West Wetlands Survey.
- 5.4.6 **Andrew Bates** (OA North project officer) has considerable experience in commercial archaeology as both an archaeozoologist and field archaeologist throughout Britain. As a freelance and in-house archaeozoologist, he has been involved in the examination and stabilisation of animal bones both during the post-excavation process and as an on-site specialist.

BIBLIOGRAPHY

English Heritage, 1991 *Management of Archaeological Projects*, 2nd edition, London

English Heritage, 2006 *Management of Research Projects in the Historic Environment (MoRPHE)*, London

Institute for Archaeologists (IfA), 2008a *Guidelines for Data Collection and Compilation*, Reading

Institute for Archaeologists (IfA), 2008b *Standards and Guidance for Archaeological Field Evaluation*, Reading

Institute for Archaeologists (IfA), 2008c *Standards and Guidance for Archaeological Excavation*, Reading

Institute for Archaeologists (IfA), 2010 *Code of Conduct*, Reading

Museums' and Galleries' Commission, 1992 *Standards in the Museum Care of Archaeological Collections*, London

OA North, 2012 *Land off Penrhos Road, Bangor, Gwynedd; Archaeological Assessment*, unpubl

Standing Conference of Archaeological Unit Managers (SCAUM), 1997 *Health and Safety for Field Archaeologists Manual*, 3rd Edition, Southampton

United Kingdom Institute for Conservation (UKIC), 1990 Guidelines for the preparation of archives for long-term storage, London

United Kingdom Institute for Conservation (UKIC), 1998 *First Aid for Finds* London

APPENDIX 3: PROJECT DESIGN FOR THE WATCHING BRIEF

1. INTRODUCTION

1.1 PROJECT BACKGROUND

- 1.1.1 Redrow Homes have requested that Oxford Archaeology North (OA North) undertake consultation with Gwynedd Archaeological Planning Service (GAPS) as to the requirements for an assessment to accompany a planning application for residential development of land off Penrhos Road, Bangor, Gwynedd (NGR centred SH 55488 69830). As part of the general collation of pre-application information, a geotechnical site investigation (SI) will be undertaken across the site, and OA North have been invited to monitor the groundworks associated with the trial trenches and window samples to further inform the archaeological assessment.
- 1.1.2 The site is an area of agricultural land, equating to nearly 14ha, surrounding the existing farmstead of Goetre-uchaf, and has a high potential for buried archaeological remains to exist. The known archaeological resource consists of a scheduled barrow (Cn 376), with a second possible barrow (PRN 22) positioned 140m to the south-west of this that would appear to have been affected by historic quarrying. Other archaeological assets include a flint scraper (PRN 2) found in association with the barrow (PRN 22), and an antiquarian reference to the discovery of a collection of querns on the south-eastern boundary of the site. Furthermore, a probably burnt mound and two undated intercutting ditches were recorded during a programme of watching brief for the purposes of the excavation of a cable trench in 2010. These features all indicate that there is a high potential for as yet unknown archaeological features to be discovered during the forthcoming work in association with the proposed development.
- 1.1.3 A formal brief has been prepared by GAPS for the purposes of a desk-based assessment and geophysical survey to inform a programme of evaluation trenching. However, this project design deals solely with the watching brief of the geotechnical SI works and has been prepared in line with a verbal brief from GAPS. The remainder of the work will be detailed in a separate project design.

1.2 OXFORD ARCHAEOLOGY NORTH

- 1.2.1 OA North has considerable experience of fieldwork and post-excavation, having undertaken a great number of small and large-scale projects during the past 30 years. Such projects have taken place to fulfil the requirements of the clients to rigorous timetables. OA North has the professional expertise and resources to undertake the project detailed below to a high level of quality and efficiency. OA North is an Institute for Archaeologists (IfA) registered organisation, registration number 17, and all its members of staff operate subject to the IfA Code of Conduct (2010).

2. OBJECTIVES

2.1 INTRODUCTION

- 2.1.1 The following programme has been designed to preserve by record any archaeological deposits or features that may be present that will be exposed and disturbed during the excavation of window samples and trial trenches associated with the SI works. The following will be undertaken in order to mitigate the impact of the proposals on any such archaeological remains. The fieldwork will be carried out in line with current IfA guidelines (2008a) and in line with the IfA *Code of Conduct* (2010). It will be conducted within the general parameters defined by Chapter 6 of the Planning Policy Wales (2011).
- 2.1.2 **Watching Brief:** a permanent presence archaeological watching brief is required during groundworks associated with the proposed SI works. This will aim to determine the quality, extent and importance of any archaeological remains, and record their presence.

- 2.1.3 **Report:** the results of the fieldwork will be incorporated into the proposed assessment report for the desk-based assessment and geophysical survey, and used to inform the requirements for the subsequent programme of trial trenching.
- 2.1.4 **Archive:** a site archive will be produced to IfA guidelines (2008b). The information will be finally disseminated through the deposition of the combined evaluation archive in a repository to be agreed with GAPS.

3. HEALTH AND SAFETY

3.1 RISK ASSESSMENT

- 3.1.1 OA North provides a Health and Safety Statement for all projects and maintains a Company Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997). OA North will liaise with the client and/or on-site contractors to ensure all health and safety regulations are met. A detailed risk assessment will be completed in advance of any on-site works, with continuous monitoring and updating during the fieldwork. This can be supplied to all interested parties on request.

- 3.1.2 All open archaeological sites, especially in the event of deep excavations, will be inspected by the Site Director or other appointed and competent person. These inspection records will be signed and dated, and form part of the on-site Health and Safety folder, which will always be available to all interested parties on request.

3.6 STAFF ISSUES

- 3.6.1 All project staff will be CSCS qualified, proof of which can be provided in the form of CSCS cards.
- 3.6.2 All project staff will wear full basic PPE whilst on site, to include safety helmets, safety boots and high-visibility jackets. Noise defenders and eye protectors will be made available to staff as necessary.
- 3.6.3 It is assumed that OA North staff will be able to use the on-site contractor's welfare facilities.

3.7 CONTAMINATION

- 3.7.1 Any known contamination issues or any specific health and safety requirements on site should be made known to OA North by the client or main contractor on site to ensure all procedures can be met, and that the risk is dealt with appropriately.
- 3.7.2 Should any presently unknown contamination be discovered during excavation, it may be necessary to halt the works and reassess the risk assessment. Should it be necessary to supply additional PPE or other contamination avoidance equipment this will be costed as a variation.

4. METHOD STATEMENT

4.6 WATCHING BRIEF

- 4.6.1 A programme of field observation will accurately record the location, extent, and character of surviving archaeological features and/or deposits within the excavations for the SI works. For such purposes the on-site contractor will need to use a toothless ditching bucket for excavating purposes.
- 4.6.2 A systematic examination will be carried out of any subsoil horizons exposed during the course of the groundworks, and all archaeological features and horizons, and any artefacts identified during observation will be accurately recorded.
- 4.6.3 The discovery of archaeological remains will require stoppage of the clearance/construction work to allow the OA North archaeologist sufficient time to adequately record the remains. This would aim to minimise disruption to the construction works.
- 4.6.4 Putative archaeological features and/or deposits identified by the machining process, together with the immediate vicinity of any such features, will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and where appropriate sections will be studied and drawn. Any such features will be sample excavated (i.e. selected

pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal).

- 4.6.5 During this phase of work, recording will comprise a full description and preliminary classification of features or materials revealed, and their accurate location (either on plan and/or section, and as grid co-ordinates where appropriate). Features will be planned accurately at appropriate scales and annotated on to a large-scale plan provided by the client.
- 4.6.6 A monochrome photographic record will be undertaken simultaneously for archiving purposes, although a digital photographic record will be maintained for reporting purposes.
- 4.6.7 A plan will be produced of the areas of groundworks showing the location and extent of the ground disturbance and one or more dimensioned sections will be produced.
- 4.6.8 **Contingency plan:** in the event of significant archaeological features being encountered during the watching brief, discussions will take place with the Development Control Archaeologist (GAPS) or a representative, as to the extent of further works to be carried out. All further works would be subject to a variation to this project design.

4.7 GENERAL PROCEDURES

- 4.7.1 **Environmental Sampling:** samples (bulk samples of 40 litres volume, to be sub-sampled at a later stage) will be collected from stratified undisturbed deposits and will particularly target negative features (gullies, pits and ditches). Monolith samples will be collected from freshly exposed sections through all buried soils/old ground surfaces by trained staff. These will be returned to OA North's offices for processing.
- 4.7.2 Deposits of particular interest may incur additional sampling, on advice from the appropriate in-house specialist.
- 4.7.3 The location of all samples will be recorded on drawings and sections with heights OD etc.
- 4.7.4 Between 50%-100% of bulk samples shall be selected for processing, based on the advice from OA North's in-house environmental manager. An assessment of the environmental potential would include soil pollen analysis and the retrieval of charred plant macrofossils and land molluscs from former dry-land palaeosols and cut features. In addition, the samples would be assessed for plant macrofossils, insect, molluscs and pollen from waterlogged deposits.
- 4.7.5 It may be required to obtain dating evidence through radiocarbon dating, dendrochronological or other such techniques. This would only be undertaken in consultation with the client.
- 4.7.6 **Human remains:** should evidence of burials be identified, the Development Control Archaeologist (GAPS) and the local Coroner will be informed immediately. All work will cease until the proper authorities were satisfied before the burials are able to be removed. In normal circumstances, field recording will also include a continual process of analysis, evaluation, and interpretation of the data, in order to establish the necessity for any further more detailed recording that may prove essential. The grave cut and/or coffin and contents will be recorded in plan at 1:20. Significant details of any grave goods, should they be discovered, will be planned at 1:10. Photography will be used to provide a further detailed record of the skeleton. The removal of such remains will be carried out with due care and sensitivity.
- 4.7.7 **Finds:** all finds recovered during the evaluation investigation (metal detecting and trial trenching) will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the United Kingdom Institute for Conservation (UKIC) *First Aid For Finds*, 1998 (new edition) guidelines.
- 4.7.8 Finds recovery and sampling programmes will be in accordance with best practice (current IfA guidelines) and subject to expert advice. Neither artefacts nor ecofacts will be collected systematically during the mechanical excavation of the topsoil unless significant deposits are encountered. In such an eventuality, material will be sampled in such a manner as to provide data to enhance present knowledge of the production and dating of such artefacts. Other finds recovered during the removal of overburden will be retained only if of significance to the

dating and/or interpretation of the site. It is not anticipated that ecofacts (e.g. unmodified animal bone) will be collected during this procedure.

- 4.7.9 All finds will be treated in accordance with OA standard practice, which is cognisant of IfA and UKIC Guidelines. In general this will mean that (where appropriate or safe to do so) finds are washed, dried, marked, bagged and packed in stable conditions; no attempt at conservation will be made unless special circumstances require prompt action. In such case guidance will be sought from OA North's consultant conservator.
- 4.7.10 All waterlogged finds will be treated as appropriate. In the case of large deposits of waterlogged environmental material (e.g. unmodified wood), advice will be sought with the OA North consultant with regard to an appropriate sampling strategy.
- 4.7.11 Where possible, spot dates will be obtained on pottery and other finds recovered from the site. Artefacts will be examined and commented upon by OA North in-house specialists. Initial artefact dating shall be integrated into the site matrix.
- 4.7.12 Any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996. Where removal cannot take place on the same working day as discovery, suitable security will be employed to protect the finds from theft.

4.8 REPORT

- 4.8.1 The results of the watching brief will be incorporated into an all encompassing assessment report of the site, including the forthcoming results of the desk-based assessment and geophysical survey. This will include a bound copy of a written synthetic report to be submitted to the client, together with a digital copy (pdf) on CD. A bound copy will also be submitted to the HER for reference purposes and a copy forwarded to the Development Control Archaeologist (GAPS). The report will present, summarise, and interpret the results of the programme detailed above in order to come to as full an understanding as possible of the archaeology of the development area. The overarching assessment report will include;
- a front cover to include the NGR,
 - a concise, non-technical summary of the results,
 - the circumstances of the project and the dates on which the fieldwork was undertaken,
 - a summary of the historical background of the study area,
 - description of the methodology, including the sources consulted,
 - a statement, where appropriate, of the archaeological implications of the impact,
 - a copy of this project design, and indications of any agreed departure from that design,
 - the report will also include a complete bibliography of sources from which data has been derived, and a list of any further sources identified but not consulted,
 - a site location plan related to the national grid,
 - appropriate plans showing the location and position of features or sites located,
 - plans and sections showing the positions of deposits and finds,
 - illustrative photographs as appropriate.
- 4.8.2 **Confidentiality:** all internal reports to the client are designed as documents for the specific use of the client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.
- #### **4.9 ARCHIVE**
- 4.9.1 This archive will be collated in accordance with the relevant IfA guidelines (2008b) and a synthesis will be submitted to the HER (the index to the archive and a copy of the report). OA North will deposit the original record archive of projects (paper, magnetic and plastic

media), and a full copy of the record archive together with the with material archive (artefacts, ecofacts, and samples) in an appropriate repository to be agreed with GAPS.

5. OTHER MATTERS

5.1 PROJECT MONITORING

5.1.1 Whilst the work is undertaken for the client, monitoring of the work will be undertaken by the Development Control Archaeologist (GAPS).

5.2 WORK TIMETABLE

5.2.1 **Archaeological Watching Brief:** the duration of the archaeological presence for the watching brief will be dictated by the client's schedule of works, but is anticipated as being four days.

5.2.2 **Report:** the client report will be completed within approximately six weeks following completion of all assessment elements, subject to any outstanding specialist reports.

5.2.3 **Archive:** the archive will be deposited within six months following completion of the site work.

5.3 STAFFING

5.3.1 The project will be under the direct management of **Emily Mercer** (OA North Senior Project Manager) to whom all correspondence should be addressed.

5.3.2 The fieldwork will be undertaken by an OA North supervisor or assistant supervisor experienced in this type of project, who will be responsible for liaison with the site contractors and the client, and other relevant interested parties with regards to on-site work and procedures. The attending archaeologist will be supported by specialist staff based both on site and in the office in Lancaster.

5.3.3 **Christine Howard-Davis** (OA North finds manager) has extensive knowledge of all categories of artefacts of all periods and is a recognised expert in the analysis of post-medieval artefacts. The assessment and subsequent analysis of all artefacts recovered during the course of the investigation will be undertaken by or under the auspices of Christine.

5.3.4 Environmental management will be undertaken by **Elizabeth Huckerby** (OA North environmental manager), who will also provide specialist input on pollen analysis/charred and waterlogged plant remains. Elizabeth has extensive knowledge of the palaeoecology of the North, and has contributed to all of the English Heritage funded volumes of the Wetlands of the North West. Elizabeth has also acted as palaeoenvironmental consultant for several archaeological investigations. Elizabeth will advise on site sampling procedures and co-ordinate the processing of samples and organise internal and external specialist input as required.

BIBLIOGRAPHY

Institute for Archaeologists (IfA), 2008a *Standards and Guidance for an Archaeological Watching Brief*, Reading

Institute for Archaeologists (IfA), 2008b *Standards and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives*, Reading

Institute for Archaeologists (IfA), 2010 *Code of Conduct*, Reading

SCAUM (Standing Conference of Archaeological Unit Managers), 1997 *Health and Safety Manual*, Poole

United Kingdom Institute for Conservation (UKIC), 1990 *Guidelines for the preparation of archives for long-term storage*

United Kingdom Institute for Conservation (UKIC), 1998 *First Aid for Finds* London

Welsh Assembly Government, 2011 *Planning Policy Wales (edn 4); Chapter 6, Conserving the Historic Environment*

APPENDIX 4: SUMMARY OF TEST-PIT CONTEXTS

CONTEXT NO.	TEST PIT NO.	DESCRIPTION	THICKNESS (M)
01	24	Loose, mid-brown sandy-silt turf and topsoil	0.38
02	24	Dark-yellow sandy natural gravels	0.34+
03	25	Loose, dark-brown sandy-silt turf and topsoil	0.11
04	25	Mid-orange clayey-sand natural geology with frequent igneous stones	0.27+
05	34	Dark-brown clayey-silt topsoil	0.12
06	34	Loose, mid-brown sandy-silt subsoil	1.08+
07	27	Loose, mid-brown sandy-silt turf and topsoil	0.32
08	27	Dark orange sandy-gravels	0.20+
09	28	Loose, mid-brown sandy-silt turf and topsoil	0.28
10	28	Dark orange sandy-gravels	0.20+
11	12	Loose, mid-brown sandy-silt turf and topsoil	0.28
12	12	Dark orange sandy-gravels	0.18+
13	29	Loose, mid-brown sandy-silt turf and topsoil	0.24
14	29	Light-mid yellow sand with frequent fractured igneous stones	0.16+
15	29	Sub-rounded cut of posthole	0.11
16	29	Loose, dark brownny-orange sandy-silt fill of 15 with frequent pea gravels	0.11
17	11	Loose, mid-brown sandy-silt turf and topsoil	0.26
18	11	Dark orange sandy-gravels	0.11+
19	13	Loose, mid-brown sandy-silt turf and topsoil	0.33
20	13	Light-creamy grey clayey-sand geology with frequent fractured igneous stones	0.08+
21	10A	Mid-grey clayey-silt topsoil	0.39
22	10A	Mottled orange and grey sandy-clay geology	0.05+
23	33	Firm, mid-brown sandy-silt topsoil	0.12
24	33	Hard dark-grey sandy igneous rock	0.01+
25	30	Loose, mid-brown sandy-silt turf and topsoil	0.34
26	30	Loose, mid-brown sandy-silt subsoil with occasional well rounded stones	0.22
27	30	Light-mid yellow sand natural geology with frequent fractured igneous stones	0.05+
28	31	Mid-grey clayey-silt topsoil	0.30
29	31	Mottled orange-grey sandy-clay natural geology	0.05+
30	32	Loose, mid-brown sandy-silt turf and topsoil	0.24
31	32	Light-mid yellow sand natural geology with frequent fractured igneous stones	0.12+
32	15	Loose, mid-brown sandy-silt turf and topsoil	0.27
33	15	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.07+
34	08	Loose, mid-brown sandy-silt turf and topsoil	0.28
35	08	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.05+
36	09	Loose, mid-brown sandy-silt turf and topsoil	0.29
37	09	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.10+
38	14	Loose, mid-brown sandy-silt turf and topsoil	0.34
39	14	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.06+
40	16	Loose, mid-brown sandy-silt turf and topsoil	0.25

41	16	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.03+
42	17	Loose, mid-brown sandy-silt turf and topsoil	0.24
43	17	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.05+
44	07	Loose, mid-brown sandy-silt turf and topsoil	0.40
45	07	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.06+
46	06	Loose, mid-brown sandy-silt turf and topsoil	0.38
47	06	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.04+
48	06	Irregular linear cut of tree throw	0.10
49	06	Loose, mid-brown sandy-silt fill of 48	0.10
50	05	Loose, mid-brown sandy-silt turf and topsoil	0.34
51	05	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.04
52	18	Loose, mid-brown sandy-silt turf and topsoil	0.31
53	18	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.05+
54	26	Loose, mid-brown sandy-silt turf and topsoil	0.28
55	26	Dark-orange sand with frequent fractured igneous stones	0.06+
56	26	Sub-circular cut of tree throw	0.23
57	26	Loose, mid-brown sandy silt fill of 56	0.23
58	23	Loose, mid-brown sandy-silt turf and topsoil	0.30
59	23	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.06+
60	35	Loose, mid-brown sandy-silt turf and topsoil	0.34
61	35	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.06+
62	36	Loose, mid-brown sandy-silt turf and topsoil	0.29
63	36	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.07+
64	22	Loose, mid-brown sandy-silt turf and topsoil	0.27
65	22	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.04+
66	21	Loose, mid-brown sandy-silt turf and topsoil	0.37
67	21	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.22+
68	21	Cut of linear	0.30
69	21	Loose, mid-brown sandy-silt fill of 68	0.30
70	20	Loose, mid-brown sandy-silt turf and topsoil	0.22
71	20	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.03+
72	03	Loose, mid-brown sandy-silt turf and topsoil	0.60
73	03	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.10+
74	04	Loose, mid-brown sandy-silt turf and topsoil	0.44
75	04	Dark yellow clayey sand natural geology with frequent fractured igneous stones	0.05+
76	39	Loose, mid-brown sandy-silt turf and topsoil	0.17
77	39	Light-mid yellow sand natural geology with frequent fractured igneous stones	0.04+
78	38	Loose, mid-brown sandy-silt turf and topsoil	0.23
79	38	Light-mid yellow sand natural geology with frequent fractured igneous stones	0.06+
80	40	Loose, mid-brown sandy-silt turf and topsoil	0.32

81	40	Light-mid yellow sand with dark grey patches natural geology with frequent fractured igneous stones	0.06+
82	41	Loose, mid-brown sandy-silt turf and topsoil	0.48
83	41	Light-mid yellow sand natural geology with frequent fractured igneous stones	0.10+
84	42	Loose, mid-brown sandy-silt turf and topsoil	0.42
85	42	Light-mid yellow sand natural geology with frequent fractured igneous stones	0.04+
86	37	Loose, mid-brown sandy-silt turf and topsoil	0.20
87	37	Light-mid yellow sand natural geology with frequent fractured igneous stones	0.03+

APPENDIX 5: SUMMARY OF EVALUATION AND STRIP AND RECORD CONTEXTS

U/S = unstratified

Trench	Context No	Description
1	100	U/S
1	101	Topsoil
1	102	Subsoil
1	103	Cut of shallow irregular ditch
1	104	Fill of 103 , dark greyish-brown, sandy-silt
1	105	Natural
2	201	Topsoil, dark brownish-grey, sandy-silt
2	202	Natural, orangey-yellow, sandy silt
3	300	U/S
3	301	Topsoil, dark greyish-brown, sandy-silt
3	302	Stony subsoil deposit, similar to topsoil 301
3	303	Cut of irregular stepped ditch
3	304	Upper fill of 303 , mid greyish-brown, sandy-silt
3	305	Primary fill of 303 , light brown, stony, sandy-silt
3	306	Cut of shallow ditch
3	307	Fill of 306 , mid greyish-brown, sandy-silt
3	308	Natural
4	401	topsoil, mid to dark brown, sandy-silt
4	402	Natural, orangey-yellow, silty-sand
4	403	Fill of pit 404 , dark to mid brown, silt
4	404	Cut of small oval, U-shaped pit
4	405	Fill of posthole 406 , reddish-brown, silt
4	406	Cut of circular, U-shaped posthole
4	407	Fill of pit 408 , mid to dark brown, sandy-silt
4	408	Cut of rounded, shallow U-shaped pit
5	501	Topsoil, mid to dark brown, sandy silt
5	502	Natural, yellowish-orange, silty-sand
5	503	Fill of ditch 504 , mid to dark brown, sandy-silt
5	504	Cut of U-shaped ditch, related to 506
5	505	Fill of ditch 506 , mid to dark brown, sandy-silt
5	506	Cut of U-shaped ditch, related to 504
5	507	Earthwork/Bank feature, cut by trench 5
5	508	Fill of ditch 509 , dark brown, sandy-silt
5	509	Cut of shallow U-shaped ditch
6	600	U/S
6	601	Topsoil, dark greyish-brown, sandy-silt
6	602	Subsoil, dark brown, sandy-silt
6	603	Natural, mid brown, sandy-silt, shale
6	604	Fill of linear feature 605 , dark greyish-brown, sandy-silt
6	605	Cut of shallow linear feature
7	701	Topsoil, dark brown, sandy-silt
7	702	Natural, orangey-yellow, sandy-clay
7	703	Cut of shallow linear feature
7	704	Fill of linear feature 703 , mid to dark brown, sandy-silt
7	705	Cut of shallow linear feature
7	706	Fill of linear feature 705 , mid to dark brown, sandy-silt
7	707	Fill of linear feature 708 , mid to dark brown, sandy-silt
7	708	Cut of shallow linear feature
8	800	U/S
8	801	Topsoil, dark greyish-brown, sandy-silt

8	802	Natural, weathered shale deposit
8	803	Cut of irregular tree-throw, filled with dark brown sandy-silt
8	804	Unknown, probable natural/geological feature
8	805	Unknown, probable natural/geological feature
8	806	Unknown, probable natural/geological feature
8	807	Fill of pit 808 , orangey-brown, silt
8	808	Cut of irregularly shaped pit
8	809	Fill of shallow pit 810 , brownish-orange, silt
8	810	Cut of shallow, sub-square pit
8	811	Fill of ovoid pit 812 , predominately brown with orangey patches, silt
8	812	Cut of ovoid pit
8	813	Fill of posthole 814 , dark brown, silt
8	814	Cut of posthole
8	815	Natural geology, brownish-yellow silt, mixture of sedimentary and igneous rock fragments
9	900	U/S
9	901	Topsoil, dark greyish-brown, sandy-silt
9	902	Stony subsoil deposit, similar to topsoil 901
9	903	Natural shale
9	904	Cut of irregular feature/part of ditch
9	905	Fill of 904 , mid to dark brown, sandy-silt
10	1000	Topsoil, dark brown, silt
10	1001	Natural, brownish-orange, silt
10	1002	Circular surface feature visible only on the surface as saucer shaped depression some 10m in diameter
11	1100	Topsoil, mid greyish-brown, sandy-silt
11	1101	Natural, mid reddish-yellow, silty-sand
12	1200	U/S
12	1201	Topsoil, dark greyish-brown, sandy-silt
12	1202	Subsoil, same as 1201
12	1203	Natural, reddish-yellow, sandy-silt
12	1204	Fill of linear 1205 , mid brown, sandy-silt
12	1205	Cut of shallow U-shaped linear
13	1300	Topsoil, mid greyish-brown, sandy-silt
13	1301	Natural, reddish-orange, clay-sand
14	1400	Topsoil, mid brown, silt
14	1401	Subsoil, light orangey-brown, silt
14	1402	Natural, very light brown, silt/gravel
15	1500	Topsoil, mid greyish-brown, sandy-silt
15	1501	Natural, reddish-orange, clay-sand
15	1502	Cut of sub-oval V-shaped pit/posthole
15	1503	Fill of pit/posthole 1502 , mid brownish-red, silty-sand
15	1504	Cut of sub-square posthole
15	1505	Fill of sub-square posthole 1504 , mid reddish-brown, silty-sand
16	1600	Topsoil, dark brown, silt
16	1601	Subsoil, mid brown, silt/gravel
16	1602	Natural, light brown, silt/gravel
17	1700	U/S
17	1701	Topsoil
17	1702	Subsoil
18	1801	Topsoil, dark brown, silty-sand
18	1802	Natural, yellowish-orange, sandy gravel
19	1900	U/S
19	1901	Topsoil, dark brown, silt
19	1902	Natural, brownish-yellow, silt
19	1903	Fill of gully 1904 , reddish-brown, silt
19	1904	Cut of linear gully
19	1905	Fill of posthole 1906 , dark greyish-brown, sandy-silt

19	1906	Cut of sub-square posthole
19	1907	Primary fill of pit 1908 , mid brown, sandy-silt
19	1908	Cut of circular, U-shaped pit
19	1909	Secondary fill of pit 1908 , mid orangey-brown, silt
20	2000	Topsoil, dark brown, silt
20	2001	Demolition deposits in NE of trench
20	2002	Subsoil, mid brown, silt/gravel
20	2003	Natural, light brown, silt/gravel
20	2004	Fill of posthole 2005 , brown, slightly clay-silt
20	2005	Cut of oval posthole
20	2006	Secondary fill of posthole 2007 , brown, slightly clay-silt
20	2007	Cut of ovoid posthole
20	2008	Primary fill of posthole 2007
20	2012	Fill of posthole 2013 , dark greyish-brown, sandy-silt
20	2013	Cut of sub-square posthole
20	2017	Cut of ovoid posthole
20	2018	Fill of posthole 2017 , dark brown, silt
20	2021	Black gravel deposit, possible surface
20	2022	Compacted mid grey, silt/gravel/stone deposit
20	2023	Cut of squared linear foundation trench
20	2024	Fill of foundation trench 2023 , light brown, silt/stone/rubble
20	2025	Concrete foundation
20	2026	Backfill/demolition rubble deposit
20	2027	Backfill of foundation trench 2030 , light greyish-white, mortar/rubble
20	2028	Wall foundation remaining within trench 2030
20	2029	Concrete foundation
20	2030	Cut of squared linear foundation trench
20	2031	Compacted dark blackish-brown silt/gravel, possible track/surface

APPENDIX 6: SUMMARY FINDS TABLE

Test Pits								
Site sub-division	Cxt No	OR No	Material	Cat	Quant	Description	Period	Cent
TP2	201	1007	Ceramic	vessel	1	1x refined white earthenware plain	Post-medieval	19th-20th
TP4	400	1006	Ceramic	vessel	1	1x refined white earthenware; 1x ?china/porcelain	Post-medieval	19th-20th
TP10a	21	1011	Ceramic	vessel	2	2x refined white earthenware plain	Post-medieval	19th
TP11	17	1013	Ceramic	vessel	1	1x refined white earthenware transfer printed	Post-medieval	19th-20th
TP15	32	1019	Ceramic	vessel	3	2x refined white earthenware plain; 1x inducing slip red earthenware with applied rough cast decoration	Post-medieval	19th
TP16	40	1014	Ceramic	vessel	2	1x Yellow ware; 1x Salt glazed stone ware	Post-medieval	19th
TP18	1801	1000	Ceramic	CBM	1	1x Machine made engineering brick, with cement adhering	Modern	20th
TP18	1801	1001	Stone	slate	1	1x Welsh slate fragment	Post-medieval	NCD
TP18	1801	1002	Ceramic	vessel	1	Blackware body sherd	Post-medieval	18th-19th
TP21	2103	1005	Ceramic	vessel	1	1x Black	Post-medieval	18th-19th
TP22	2201	1009	Ceramic	vessel	3	2x Black; 1x coloured grew	Post-medieval	18th-19th
TP28	9	1020	Ceramic	vessel	1	refined white earthenware transfer printed	Post-medieval	19th-20th
TP28	2801	1008	Ceramic	vessel	1	refined white earthenware transfer printed	Post-medieval	19th-20th
TP29	16	1012	Ceramic	vessel	1	1x Glazed red earthenware	Post-medieval	19th
TP29	2901	1010	Ceramic	vessel	2	2x refined white earthenware transfer printed and plain	Post-medieval	19-20th
TP32	30	1015	Ceramic	vessel	3	2x refined white earthenware plain; 1x stoneware jar rim	Post-medieval	19th
TP33	3301	1004	Ceramic	vessel	1	1x buff earthenware teapot spout (?silver shape)	Post-medieval	18th-19th
TP34	6	1023	Iron		3	1x sheet iron; 1x large bolt (tractor part); 1x complete square section nail; 1x entrenching tool head	Modern	20th

TP34	6	1017	Ceramic	Tob pipe	1	1x Tobacco pipe stem	Post-medieval	18th-19th
TP34	6	1022	Ceramic	vessel	29	1x unglazed red earthenware (plant pot); 4x blackware pancheon rim, pancheon/milk pot rim and handle, plus 3 body sherds; 4x plain china/porcelain; 5x Grey stoneware; 1x salt glazed stoneware; 1x Brown glazed earthenware; 1x Yellow; 9x refined white earthenware, including a handle and transferred printed and plain	Post-medieval	19th
TP34	6	1021	Glass	vessel	2	1x mould blown, square section bottle, Natural blue-green metal. 1x beer bottle, applied top, dark olive green	Post-medieval	L 19th
TP34	6	1021	Glass	vessel	3	1x machine blown, colourless; 1x beer bottle fragment, dark olive green; 1x mould blown, screw top	Post-medieval	L 19th
TP34	6	1018	Bone		3	2x cow tibia, sawn; 1x cow radius sawn	Post-medieval	
TP34	6	1021	Glass	vessel	3	1x 2 piece mould, applied rim, machine blown, 2 pint. Natural blue-green metal Complete; 1x "Kb ltd, Smith's all in one". Applied lip, screw thread, 2 piece mould blown, Natural blue-green metal	Post-medieval	19th-20th
TP34	36	1016	Glass	vessel	2	1x dark olive green fragments; 1x blue fragment	Post-medieval	19th
Evaluation Trenches								
Tr5	500		Ceramic	Tob pipe	1	1x pipe bowl	Post-medieval	19th
Tr5	503		Glass	Bottle	1	1x dark olive green glass fragment	Post-medieval	19th
Tr5	508		Iron		1	1x sheet iron	Post-medieval	NCD
Tr5	508		Ceramic	vessel	1	Westerwald decorated fragment (?seventeenth century)	Post-medieval	NCD
Tr6	600		Glass	window	1	1x window glass fragment	Modern	20th
Tr6	600		Ceramic	vessel	3	1x Blackware; 1x refined white earthenware; 1x sprigged decoration (c 1840s plus)	Post-medieval	19th
Tr6	604		Ceramic	vessel	1	1x porcelain	Post-medieval	19th

Tr7	704		Ceramic	vessel	11	1x porcelain; 1x yellow ware; 1x Blackware; 7x refined white earthenware, including handle and transfer printed	Post-medieval	19th
Tr7	704		Glass	Window	1	1x window glass fragment	Modern	20th
Tr7	704		Ceramic	Tob pipe	1	1x Tobacco pipe stem	Post-medieval	NCD
Tr7	704		leather		2	2x small leather fragments	Post-medieval	NCD
Tr7	706		Ceramic	Tob pipe	1	1x Tobacco pipe stem	Post-medieval	NCD
Tr7	706		Ceramic	Vessel	2	1x refined white earthenware transfer printed; 1x yellow ware handle	Post-medieval	19th

Cxt No - Context number; OR No - Object record number; Quant - Quantity; Cat - Category; Cent - Century; Tob pipe - Tobacco pipe