

**LAND AT WENDOVER ROAD,
RACKHEATH, NORFOLK:**

**INFORMATIVE TRENCHING AS
PART OF A PROGRAMME OF
MITIGATION**

**LOCAL PLANNING AUTHORITY:
NORFOLK COUNTY COUNCIL**

**PLANNING REFERENCE:
FUL/2020/0068**

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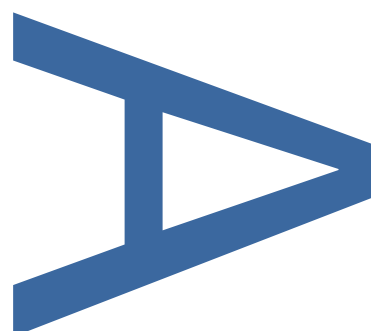
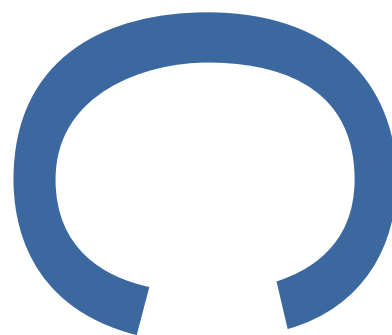
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PRE-CONSTRUCT ARCHAEOLOGY

LAND AT WENDOVER ROAD, RACKHEATH, NORFOLK

INFORMATIVE TRENCHING AS PART OF A PROGRAMME OF MITIGATION

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Land at Wendover Road, Rackheath: Informative Trenching as part of a Programme of Mitigation

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ABSTRACT

Pre-Construct Archaeology undertook Informative Trenching as part of a Programme of Mitigation at PSH Environmental, Wendover Road, Rackheath on March 1st and 2nd 2021. The project comprised four no. 30m trial trenches.

The results of the informative trenching indicate that in general there was limited evidence for archaeological finds or features across the site. An undated ditch [111] was recorded running east to west in Trench 2.

A large charcoal rich-pit [105] excavated in Trench 4, as with features found on other sites nearby, may be associated with charcoal production. This pit contained no finds but was dated through radiocarbon dating to the Late Saxon period, 773 - 988 Cal AD 95% (1152 ± 29; SUERC-98420).

1 INTRODUCTION

- 1.1 Informative Trenching as part of a Programme of Mitigation was undertaken by Pre-Construct Archaeology Ltd (PCA) on land at Wendover Road, Rackheath, Norfolk centred on Ordnance Survey National Grid Reference TG 27910 14070) on the 1st and 2nd of March 2021 (Figure 1; Plate 1).
- 1.2 The 8592m² proposed development is for extension to the existing industrial unit with hardcore area and construction of a screen bund and associated external works being planned (Planning Reference FUL/2020/0068). A condition for planning consent requiring archaeological work has been placed on the site due to the high archaeological potential of the proposed development. This is in line with the National Planning Policy Framework 2019.
- 1.3 The archaeological work was commissioned by Karly Chung of Chaplin Farrant on behalf of their client PSH Environmental Ltd. to undertake a programme of informative trenching at the proposed development site at Wendover Road, Rackheath in response to an archaeological brief issued by Steve Hickling of the Historic Environment Service of Norfolk County Council (HES/NCC).
- 1.4 A total of four 30m long x 2m wide trial trenches totalling 120 m of linear trenching were excavated and recorded (Figure 2).
- 1.5 The project was carried out in accordance with a Written Scheme of Investigation (WSI) prepared by PCA (PCA Crawley 2021). The aim of the trial trenching was to determine the location, date, extent, character, condition, and quality of any archaeological remains on the site, to assess the significance of any such remains in a local, regional, or national context, as appropriate, and to assess the potential impact of the development proposals on the site's archaeology.
- 1.6 This report describes the results of the trial trenching and aims to inform the design of an appropriate archaeological mitigation strategy. Following Transfer of Title, the site archive will be deposited at Norwich Castle Museum.

2 GEOLOGY AND TOPOGRAPHY

2.1 Geology

- 2.1.1 The underlying geology consisted of Crag Group - Sand and Gravel. Sedimentary Bedrock which formed approximately 5 million years ago in the Quaternary and Neogene Periods in a local environment previously dominated by shallow seas (BGS).
- 2.1.2 The upper geology in the western half of the site consists of Happisburgh Glacigenic Formation - Sand and Gravel. Superficial Deposits which formed up to 3 million years ago in the Quaternary Period in a local environment previously dominated by ice age conditions (BGS).
- 2.1.3 The superficial deposits comprise Wick 2 association described as deep well drained coarse loamy, often stone less soils (BGS).

2.2 Topography

- 2.2.1 The site is situated on relatively flat land at 30m AOD on the north side of Rackheath village. The trenches will be positioned in the current business-yard on the north side of PSH Environmental Ltd. Arable fields lay to the north.

3 ARCHAEOLOGICAL BACKGROUND

General Background

- 3.1 Pre-Construct Archaeology (PCA) has been commissioned by Karly Chung of Chaplin Farrant on behalf of their clients PSH Environmental Ltd to undertake a programme of informative trenching at the proposed development at PSH Environmental Ltd, Wendover Road, Rackheath (NGR TG 27910 14070) in response to an archaeological brief issued by Steve Hickling of the Historic Environment Service of Norfolk County Council (HES/NCC).
- 3.2 The 8592m² proposed development is for extension to the existing industrial unit with hardcore area and construction of a screen bund and associated external works being planned (Planning Reference FUL/2020/0068). A condition for planning consent requiring archaeological work has been placed on the site due to the high archaeological potential of the proposed development. This is in line with the National Planning Policy Framework 2019.
- 3.3 The project will be managed and directed by Peter Crawley, Project Manager of PCA Central.
- 3.4 The WSI conforms to the Standards for Development-Led Archaeological Projects in Norfolk (Robertson et al, 2018). This informative trenching is part of a program of mitigation and further mitigation may be required. If further phases of mitigation are required, they will require their own project designs as addenda to this WSI.

Archaeological Background

- 3.5 The following archaeological background is taken from the Archaeological Brief (Hickling 2020) and a search of the Norfolk HER.
- 3.6 The archaeological brief highlights the most relevant historic environment records and indicates that the proposed development site lies within an area of extensive multiperiod cropmarks, perhaps of Roman and Iron Age date. In addition, the site lies at the end of one of the runways of the World War Two Rackheath Airfield, and artefacts of that period may also be present (Hickling

2020).

Early Prehistoric

- 3.7 There appears to be little of Palaeolithic date in the vicinity of the site although an Upper Palaeolithic flake which was found in the wider Rackheath area (NHER 54173). Approximately 700m to the northwest of the site, a possible Mesolithic/Neolithic flint working site consisting of a large number of blades, borers, scrapers and flakes was recorded (NHER 12630). An important NHER record of Neolithic date was recorded approximately 400m to the south-east of the site, consisting of an oval barrow or mortuary enclosure (NHER 18875).
- 3.8 To the south west of the site a Neolithic Flint axe has been recorded NHER16104. Further polished stone axe heads have been found across the Rackheath area (NHER 8153, 8160, 8149), and a stone axe hammer was found approximately 1000m to the south east (NHER 8171). Several worked and burnt prehistoric flints have also been found as part of multi-period finds scatters across the general Rackheath area (NHER 33570, 49752, 50502).

Later Prehistoric to Roman

- 3.9 Ahead of the construction of the Northern Distributor Route, to the south east of the site, a metal detecting survey unearthed a middle Bronze Age spearhead (NHER 49751). Other finds of a similar date found further from the site include a late Neolithic or early Bronze Age barbed and tanged arrowhead, and a possible Bronze Age unidentified object (NHER 36254, 51314). Over 1000m to the south east in New Rackheath, there is the cropmark of a possible ring ditch which may represent the remains of a Bronze Age barrow, but could also be a later feature, such as a windmill base (NHER 51924).
- 3.10 Of most relevance, the present site lay within a polygon NHER 50725, recorded on the NHER and referring to a series of cropmarks. Many of the cropmarks in this area, particularly those on the eastern side of the former World War Two airfield, have been postulated Iron Age to Roman date, however a variety of dates may be present.

3.11 There are several other collections of cropmarks representing enclosures and trackways (NHER 50730 NHER 51930, NHER 51932) and curvilinear features (NHER 51923) recorded across the parish of Rackheath, thought to be Iron Age to Roman date. It is also likely that other recorded cropmarks represent landscape features which continued in use into the Roman period (NHER 50728, 50729, 50730, 50744, 51930, 51932). Low levels of Roman material have been recovered during fieldwalking within Beeston Park and it is considered that the Broad Walk at the western limit of Beeston Park could align with the route of the former Brampton to Thorpe St Andrew Roman road (NHER 7598).

Anglo Saxon to medieval

3.12 Of three Domesday entries for the settlement of Rackheath, the main entry relates to the larger village of Rackheath Magna which was located approximately 400m north-east of All Saints Church (the church is 1.3km north of modern Rackheath). The Domesday survey lists 27 heads of households comprising villagers, smallholders and free men, and had 5 men's ploughs and 7 acres of meadow. A second entry related to Rackheath Parva and a third to an unnamed strip of land, but details of those are not recounted here.

3.13 Within the wider parish there are several recorded medieval metalwork find spots, (NHER 36254, 51314, 52535), which include a leaf-decorated copper alloy strap end (NHER 19297), the quillon from a dagger (NHER 40112), and 13th century coins of Edward I and Alexander the III (NHER 39886). An earlier coin of William I was found near Rackheath Hall (NHER 8172).

3.14 Field walking to the south of the site produced one possible sherd of medieval pottery (NHER 49751). An important local historical event was recorded close to the site, whereby, during the Peasants Revolt in 1381, a large gathering of Norfolk rebels assembled at the northern end of Mousehold Heath at Rackheath and proclaimed their leader Geoffrey Litster, 'King of the Commons', before marching on to defeat at North Walsham.

Post-medieval to modern

- 3.15 To the south west of the site is NHER 30518, an area of land which had become part of a deer park by the late 16th century when the estate was owned by the Pettus family. It had passed to the Stracey family by the 18th century. At this time, following the c. 1801 Parliamentary Enclosure of Rackheath, the park was extended to the south, taking in part of former Mousehold Heath (NHER 53082) as it appeared on Fadens' map of Norwich 1797.
- 3.16 The Grade II listed Rackheath Hall to the west of the site was probably built, in 1777 although it could have been built as late as 1852-4 (NHER 8172). It replaced a 16th or 17th century hall, destroyed by fire, owned by Sir John Pettus, MP and Mayor for Norwich, who was knighted by Elizabeth I. A number of post-medieval finds have been metal detected from close to the site (NHER 49749, 49754, 50501).
- 3.17 In 1943, agricultural land between Rackheath Magna and Rackheath Parva (NHER 8170) was turned over to a new role as an airfield for the use of the United States Army Air Forces Eighth Air Force. The larger and heavier B24s required long concrete runways. As stated above, the current site lay at the end of one of the runways for this airfield, and artefacts of that period may be present.

4 METHODOLOGY

4.1 General

- 4.1.1 The archaeological trial trenching comprised four no. 2m x 30m trial trenches, totalling 120m of linear trial-trenching. The trenches were distributed across the site in order to provide a representative sample of the development area.

4.2 Excavation methodology

- 4.2.1 Ground reduction during the project was carried out using a 21 ton 360° tracked mechanical excavator. Topsoil and other overburden of low archaeological value was removed in spits down to the level of the undisturbed natural geological deposits where potential archaeological features could be observed and recorded.
- 4.2.2 Exposed surfaces were cleaned by trowel and hoe as appropriate, and all further excavation was undertaken manually using hand tools.

4.3 Recording and Finds Recovery

- 4.3.1 The limits of excavations, heights above Ordnance Datum (m OD) and the locations of archaeological features and interventions were recorded using a Geomax GPS rover unit with RTK differential correction, giving three-dimensional accuracy of 20mm or better.
- 4.3.2 Deposits or the removal of deposits judged by the excavating archaeologist to constitute individual events were each assigned a unique record number (often referred to within British archaeology as 'context numbers') and recorded on individual pre-printed forms. Archaeological processes recognised by the deposition of material are signified in this report by round brackets (thus), while events constituting the removal of deposits are referred to here as 'cuts' and signified by square brackets [thus]. Where more than one slot was excavated through an individual feature, each intervention was assigned additional numbers for the cutting event and for the deposits it contained (these deposits within cut features being referred to here as 'fills'). The record numbers assigned to cuts, deposits and groups are entirely arbitrary and in no way reflect the chronological order in which events took place. All features and deposits

excavated during the project are listed in Appendix 1. Artefacts recovered during excavation were assigned to the record number of the deposit from which they were retrieved.

4.3.3 Metal-detecting was carried out during the topsoil and subsoil stripping and throughout the excavation process. Archaeological features and spoil heaps were scanned by metal-detector periodically. There were no finds unearthed through this method.

4.3.4 High-resolution digital photographs were taken of all relevant features and deposits and were used to keep a record of the excavation process.

4.4 Sampling Strategy

4.4.1 Discrete features were half-sectioned, photographed and recorded by a cross-section scaled drawing at an appropriate scale (either 1:10 or 1:20).

4.5 Environmental Sampling

4.5.1 One bulk sample was taken to extract charcoal for radiocarbon dating from Pit [105].

5 QUANTIFICATION OF ARCHIVE

5.1 Paper Archive

| | |
|-------------------------------|----|
| Context register sheets | 1 |
| Context sheets | 13 |
| Plan registers | 0 |
| Plans at 1:50 | 0 |
| Plans at 1:20 | 0 |
| Plans at 1:10 | 0 |
| Plans at 1:5 | 0 |
| Section register sheets | 1 |
| Sections at 1:10 & 1:20 | 4 |
| Trench record sheets | 4 |
| Photo register sheets | 1 |
| Small finds register sheets | 0 |
| Environmental register sheets | 1 |

5.2 Digital Archive

| | |
|------------------|-----------------------|
| Digital photos | 60 (30 JPEG + 30 RAW) |
| GPS survey files | 2 |
| Digital plans | 0 |
| GIS project | 0 |
| Access database | 1 |

5.3 Physical Archive

| | |
|---|---|
| Struck flint | 0 |
| Burnt flint | 0 |
| Pottery | 0 |
| Ceramic building material (CBM) | 0 |
| Glass | 0 |
| Briquetage | 0 |
| Small Finds | 0 |
| Slag | 0 |
| Animal bone | 0 |
| Shell | 0 |
| Environmental bulk samples | 1 |
| Environmental bulk samples (10 litre buckets) | 4 |
| Monolith samples | 0 |
| Other samples (specify) | 0 |
| Black and white films | 0 |
| Colour slides | 0 |

6 ARCHAEOLOGICAL RESULTS BY TRENCH

6.1 Introduction

- 6.1.1 The results from each trench are summarised below. Feature descriptions and trench data are tabulated in Appendix 2.

6.2 Trench 1

(Fig 2; Plate 2 & Plate 8)

- 6.2.1 Trench 1 contained two features believed on balance to be of natural origin, though feature [115] was not sufficiently exposed to be certain with regards its interpretation as a natural feature (conceivably it could have been a small pit lacking finds). Feature [115], was also only partially seen. This feature had irregularly sloping sides and greyish organic fills. Both these features appeared to underlie the subsoil. The natural ground immediately to the east of feature [115] appeared to have been disturbed (Plate 8). Feature [117] was crescentic in shape - though it was partially seen and was almost certainly a treethrow. No finds were recovered from either of these features.

6.3 Trench 2

(Fig 2; Plate 3 & Plate 7)

- 6.3.1 A ditch [111] was recorded running E-W across the centre of Trench 2. The ditch truncated the subsoil, being visible at the base of the topsoil. Its base was rather irregular though in the baulk section its shape was consistent with this feature being a ditch. It was 1.7m in diameter below the topsoil and 0.52m deep. It contained two fills (110) and (120) but produced no dating material.
- 6.3.2 Three other small features [107], [109] and [113] were excavated. None of these features were convincing as archaeological remains and are likely the product of natural disturbances. Feature [107] contained small fragments of carbonised material at its base. Feature [113] appeared to be the product of rooting activity. No archaeological finds were recovered from any of these features.

6.4 Trench 3

(Fig; Plate 4)

6.4.1 No archaeological finds or features were present in Trench 3. Two rectangular features visible on the surface an c. 0.6m wide were clearly modern and likely to be the result of geotechnical investigations.

6.5 Trench 4

(Fig; Plate 5 & Plate 6)

6.5.1 A 3.5m+ wide pit, possibly associated with charcoal production was excavated at the eastern end of Trench 4. It contained two fills (103) and (104). Fill (104), the lower fill was stained black with charcoal. Small fragments of charcoal (to 20mm) were visible during excavation. No sign of in situ burning was present. The brighter orange colour seen at the base of the pit was a change in the colour of the natural ground. The upper fill (103) was a mid-brown sandy silt. No archaeological finds were recovered from the feature. The pit was subsequently dated through radiocarbon dating to the 773 - 988 Cal AD 95% (1152 ± 29; SUERC-98420).

6.5.2 A sample of the dark fill (104) was taken to extract charcoal for radiocarbon age determination. Sample <1> contained an extremely high abundance of charcoal fragments, each with more than 100 fragments of charcoal that were a suitable size for species identification (>4mm). A few whole terrestrial mollusc shells were noted in the sample, along with less than 10 pieces of burnt flint and glass fragments suggesting low levels of post-depositional disturbance of the context. A small concentration of uncharred seeds was also present.

7 THE FINDS AND ENVIRONMENTAL EVIDENCE

7.1 Environmental

Tegan Abel

Introduction

- 7.1.1 This report aims to summarise the findings from the assessment of 1 bulk environmental sample taken during trial trenching on land at Wendover Road, Rackheath, Norfolk. The sample volume was 34 litres, with the sample being extracted from a single pit. (table 1).

| Context No. | Feature No. | Environmental Sample No. | Context category | Feature Type |
|-------------|-------------|--------------------------|------------------|--------------|
| 104 | 105 | 1 | Fill | Pit |

Table 1: Context information for environmental samples

Aims

- 7.1.2 The aims of the report are as follows: 1- To give an overview of the ecofacts and artefacts extracted from the bulk samples; 2- To evaluate the potential of the environmental remains and, 3- To make recommendations for additional analysis.

Methodology

- 7.1.3 A single sample was retrieved during this project; prior to being processed, the sediment volume was measured and recorded, the data for which is presented in table 2. Samples were processed using a modified SIRAF floatation system; the flot residue was collected using a 300 µm mesh and the heavy residue, a 3mm mesh. After being left to dry naturally, the residue was sieved through 2mm, 5mm and 10mm sieves, and sorted to remove ecofacts and artefacts; material was recorded using a non-linear scale, as follows: 1- occasional (1-10), 2- fairly frequent (11-30), 3- frequent (31-100) and abundant (31-100).
- 7.1.4 The light residue was examined under a low-power binocular microscope and the contents recorded (table 2), with abundances being quantified as above.

Results

- 7.1.5 Sample <1> context (104) cut [105].
- 7.1.6 The sample contained an extremely high abundance of charcoal fragments, each with more than 100 fragments of charcoal that were a suitable size for species identification (>4mm). Charcoal specimens were also noted in an abundance of greater than 100 fragments in both the 2-4mm and <2mm fractions. A few whole terrestrial mollusc shells were noted in the sample, along with less than 10 pieces of burnt flint and glass fragments. A small concentration of uncharred seeds was present, along with occasional rooting and low amounts of modern plant material. The presence of these materials could indicate low levels of post-depositional disturbance of the context.

Conclusion and Recommendations for further work

- 7.1.7 A rapid assessment of the environmental samples from Wendover Road has provided evidence for potential preservation of charcoal and charred plant macrofossils at this site.
- 7.1.8 The sample taken from this site contained an abundance of wood charcoal (more than 100 fragments greater than 4mm in size) and so are recommended for additional specialist analysis prior to archiving. No other archaeobotanical remains were present, though the wood charcoal may provide the potential for radiocarbon dating of the feature.
- 7.1.9 The uncharred seeds from the samples are intrusive species, as indicated through the degree of preservation of the specimens. The presence of these seeds along with un-burnt plant material, roots and insect remains, could indicate post depositional disturbance to the contexts.

| Cut | Context | Sam | Material | Material selected | Notes of maturity | Comments & recommendations |
|-----|---------|-----|---------------|--|---|--|
| 105 | 104 | 1 | Wood charcoal | A & B. Quercus (oak) roundwood (RW) x 2 frags; C & D. Betula (birch) RW x 2 frags. | A. With 2 growth rings & pith; B. With 8 growth rings pith & bark (diam. 6 mm); C. 4 growth rings & pith; D. 8 growth ring segment (without pith & bark). | Frag. A - from shortest lived (v narrow) RW but quite small. Frag. B - fairly short lived RW but larger & more complete (inc. pith & bark) than Frag A. Submit frags. A & B. Send frags B & C as back-ups. |

Table 2: Context information for environmental samples

7.2 Wood Charcoal

Sheila Boardman

Introduction

7.2.1 This report provides details and results of the wood charcoal investigation for one sample (34 litres in vol.): sample 1 from fill (104) of Pit [105]. The aims of the investigation were to extract suitable material for radiocarbon dating and assess evidence for the nature of the charcoal rich fill and use of the feature.

Assemblage Chronology

7.2.2 Sample 1 came from the lower fill (104) of pit [105], a 3.5m+ wide feature which resembled some medieval and later pits/clamps associated with charcoal production in the region (PCA Pullen 2021: 18; and below). A radiocarbon date of 1152 +/- 29 cal BP (SUERC-98420 [GU57802]) was obtained from an oak (Quercus) roundwood fragment. This is consistent with a Saxon/early medieval date: of cal AD 773-988 (95.4% probability) (cal AD 822-988 [87.3%] and 773-790 [8.1%]).

Methods

7.2.3 The sample was processed using standard PCA flotation procedures (Abel in PCA Pullen 2021: 16). Greater than 2 mm wood charcoal fragments for identification were randomly extracted from the flots and sorted charcoal

fractions. They were prepared and identified following methods and keys in Hather (2000), Gale and Cutler (2000) and Schweingruber (1990), using a Leica GZ6 microscope (with x10 - x40 magnifications) and Lomo Metam P1 metallurgical microscope (with up to x400 magnifications). Plant nomenclature follows Stace (2010).

Assemblage Composition

- 7.2.4 At least five tree and shrub taxa were conclusively or tentatively identified in sample 1. They included oak (*Quercus*), birch (*Betula*), willow/poplar (*Salix/Populus*), elder (*Sambucus nigra*) and possible lime (cf. *Tilia*) (see Table 1).

Sample 1, context 104, Pit [105] - Discussion

- 7.2.5 Most oak remains were from timber, and these included similar proportions of heartwood and sapwood fragments. Four oak roundwood fragments were also seen in the subsample (of 110 fragments). The birch and willow/poplar fragments were from a mixture of mature and immature timber, and roundwood. One elder fragment may be from larger roundwood or immature timber. Lime charcoal is relatively rare archaeologically. Lime wood has a light, open structure making it less likely than denser woods, such as oak, to survive burning, burial and recovery (Gale & Cutler 2000).
- 7.2.6 Rackheath lies in an area of heathland, with historic and ancient woodlands; arable fields lie to the north (Rackheath Parish Council 2017; PCA Pullen 2021). Larger trees in sample 1 are represented by oak and possible lime. Local place names such as Woodbastwick attest to the presence of lime trees in the landscape in Saxon times. Birch, the second most common taxon after oak, may represent trees growing on the heath, or in areas where woodland regeneration was taking place. Oak and birch make excellent wood and charcoal fuels (Edlin 1949; Gale & Cutler 2000), so may have been used for a variety of domestic and industrial purposes. Willow/poplar was the third most common of the taxa groups. Willows are trees of damp and marshy ground, often growing by rivers and streams. At Rackheath willows may have grown close to the Springs or Dobbs' Beck, to the west and north of the site, or along

the rivers Hor and Bure further north. Willow burns slowly and does not make a good fuel unless seasoned or used as charcoal (Gale & Cutler 2000). Poplars are associated with rich alluvial soils, and the wood was widely used in construction, to line floors of wagons and carts, and to make objects such as sabots and pattens, arrow shafts and stoppers (Gale & Cutler 2000). Poplar burns easily but rapidly so is most useful for lighting fires (Edlin 1949). Elder, represented by two fragments in sample 1, is common on nitrogen rich and manured soils (Stace 2010), so this may have grown close to human habitations.

- 7.2.7 Pit [105] had no evidence for in situ burning so this is unlikely itself to have been a charcoal clamp (PCA Pullen 2021). Sample 1 had similar proportions of oak to the non-oak fragments combined. At least five woody taxa were present. A more limited range of taxa (often a single taxon) would normally be used for charcoal production. Elements of similar sizes and maturity might also be expected. Here, there was a mixture of oak heartwood and sapwood with some roundwood, and timber and roundwood of the other two main taxa: birch and willow/poplar. This combination is more consistent with a series of dumps. As well as domestic fuel refuse, this could include waste from one or more charcoal clamps which was considered to uneconomical to transport (see below). Similar pits of varying ages have been found at other sites in the region. Those with Saxon/early medieval dates are discussed further below.

Significance and conclusions

- 7.2.8 All of the woody taxa are native species which can be found in the modern landscape. At Salhouse Road, Thorpe End, Norfolk, c.1.5 miles southwest of Wendover Road, small quantities of wood charcoal were identified in samples from ten of eleven charcoal rich pits, primarily for radiocarbon dating (PCA Furniss & Crawley 2021). All ten samples were dominated by oak heartwood (Boardman in PCA Furniss & Crawley 2021). Of the five pits dated at Salhouse Road, four had Late Saxon dates. Further afield, at Round House Way, Cringleford, Norfolk, c.9 miles southwest of Wendover Road, a series of scattered charcoal rich pits produced a cluster of late Saxon (9th to 10th/early

11th century) dates (Woodhouse & Challinor, in prep). Oak heartwood from the trunks and large branches of mature trees dominated the samples. As here, there was no evidence for in situ burning but the pits were nevertheless thought to be related to charcoal production. One suggestion was that they contained waste fragments that were too small or uneconomic to transport. The products of charcoal burning may have supplied Saxon Norwich, particularly the iron working industry which flourished during this period (Woodhouse & Challinor, in prep).

- 7.2.9 On the basis of the charcoal remains and a quick survey of similar-aged sites in the Norwich area, it seems likely that the Wendover Road pit contained dumped material. The mixture of taxa and different elements may indicate general fuel waste, including from domestic hearths. As has been suggested elsewhere, however, the Wendover Road pit also may have included waste/unwanted material from local charcoal clamps. The latter seem to have been an important feature of the local landscape from the Iron Age to the medieval period.

8 DISCUSSION

Ditch [111]

- 8.1.1 Ditch [111] contained no datable material. Its stratigraphic position above the subsoil indicates this feature is probably post-Roman and may well be associated with a medieval or post-medieval field system, perhaps of a similar date to Late Saxon pit [105] close-by. The lack of finds within the ditch and the relatively pale colour of its fills can be taken to indicate that it was located away from any settlement. The ditch aligns only very roughly with the field system visible on the 1881 OS Six Inch Map (Norfolk LII.SW Surveyed: 1881, Published: 1887 viewed online National Library of Scotland - Map Images nls.uk) which may suggest a pre-19th century date.

Pit [105]

- 8.1.2 Pit [105] was dated through radiocarbon dating to the 773 - 988 Cal AD 95% (1152 ± 29; SUERC-98420). Such pits, located in areas of former heathland are thought to be associated with charcoal production and other similar features have been found in this area of former heathland dating from the mid-Saxon to medieval periods.
- 8.1.3 A number of similar pits thought to be associated with charcoal production were found at Cringleford (Woolhouse & Challinor in prep), Salhouse Road (PCA Furniss & Crawley 2021), Sprowston Road (NHER15344) and near Rackheath (NHER 15338).
- 8.1.4 Although Pit [105] may be a clamp for charcoal production, the lack of obvious in situ burning at the feature's edges might suggest that though this pit was involved in charcoal production, it does not represent the clamp itself but rather was used to take the dumped waste material from a nearby charcoal clamp. The mixture of taxa and different elements such as mollusc shell and burnt seeds may also indicate that general waste, including fuel from domestic hearths was also present. (see discussion in PCA Furniss & Crawley 2021). As only part of Pit [105] was revealed within the trial trench, our understanding of how this feature functioned is limited.

9 CONCLUSIONS

- 9.1.1 Only two archaeological features, Ditch [111] and Pit [105] were identified at the PSH Environmental site. Ditch [111] is probably a medieval or post-medieval field boundary.
- 9.1.2 Pit [105], dated through radiocarbon dating to the Late Saxon period represents a feature associated with charcoal production; similar features have been recorded locally. No archaeological finds were recovered from these features.
- 9.1.3 Apart from Pit [105] and Ditch [111], only features of probable natural origin (including treethrows) were encountered.

10 ACKNOWLEDGEMENTS

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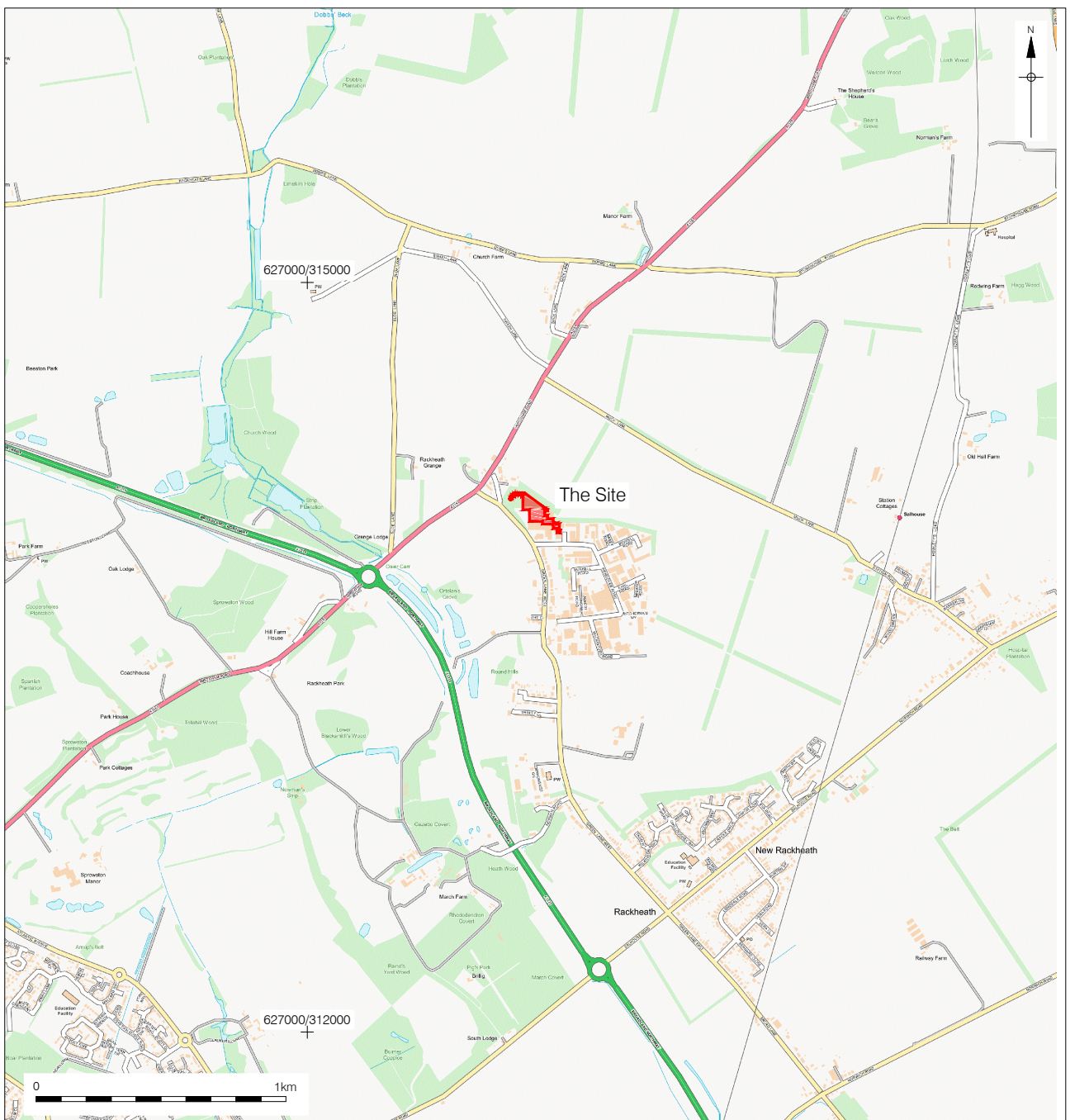
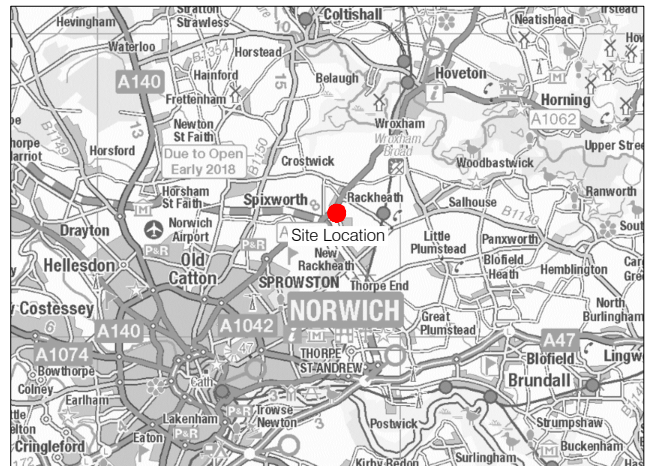
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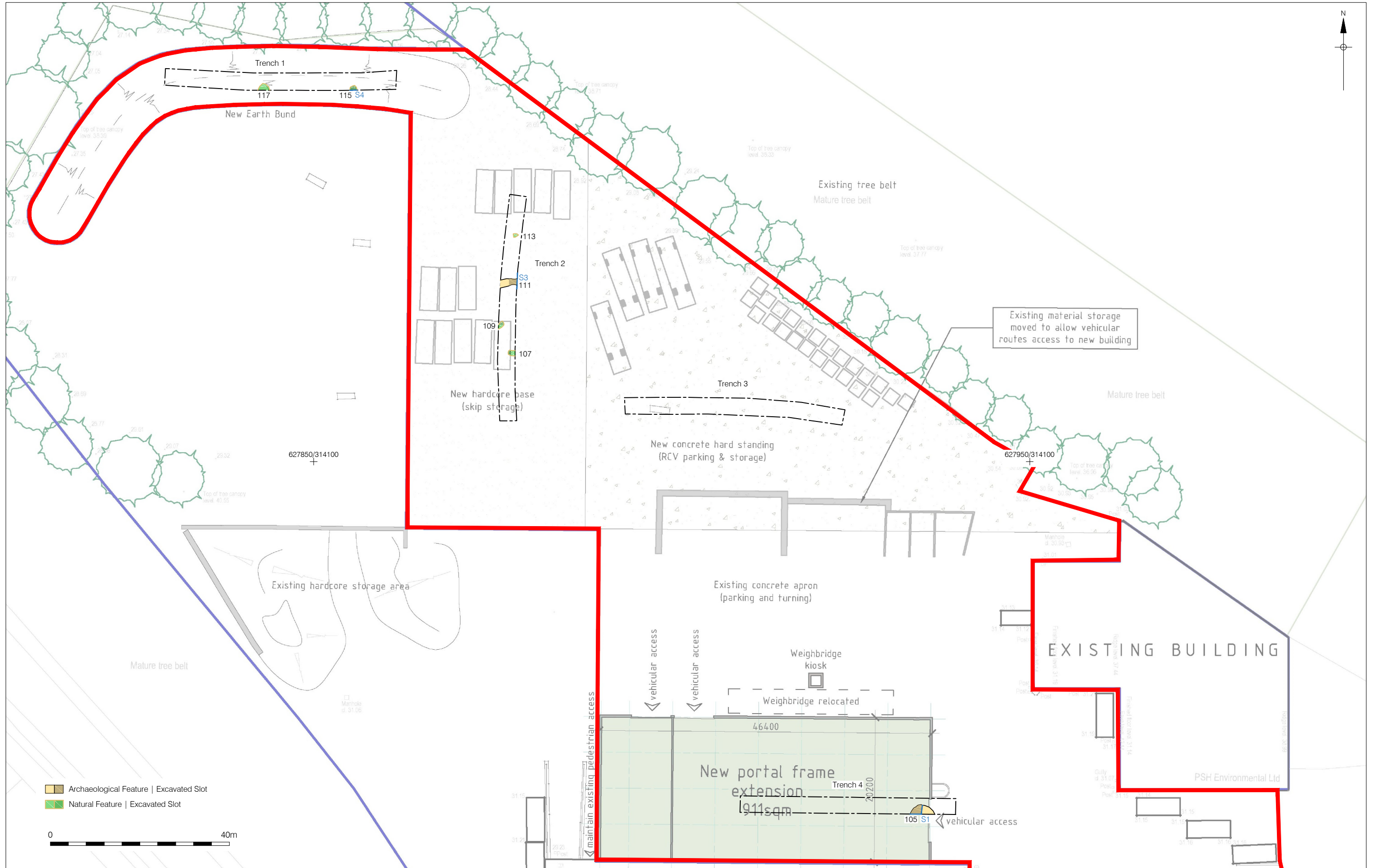
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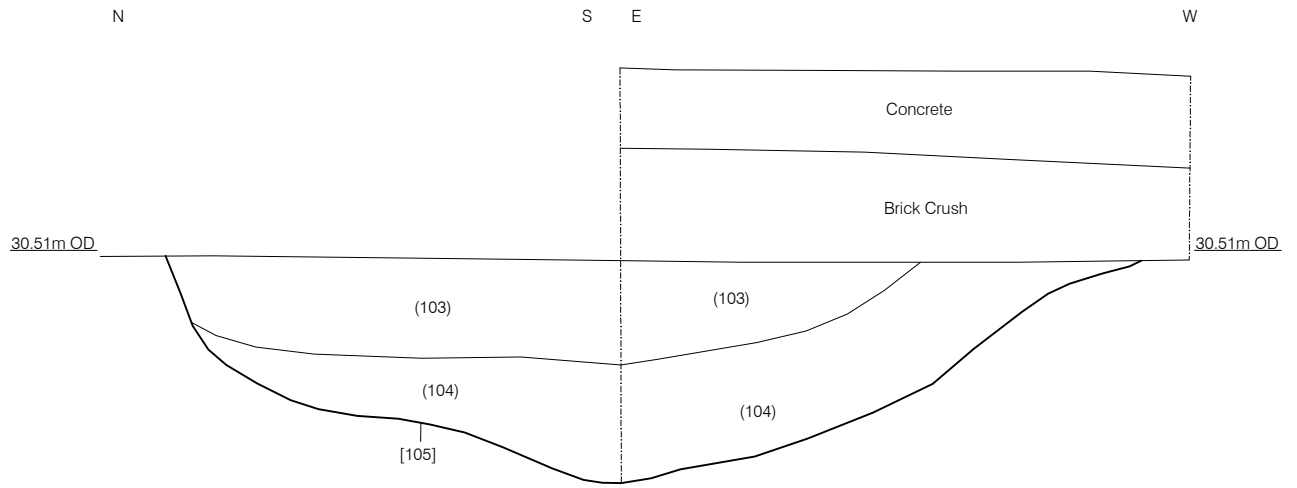
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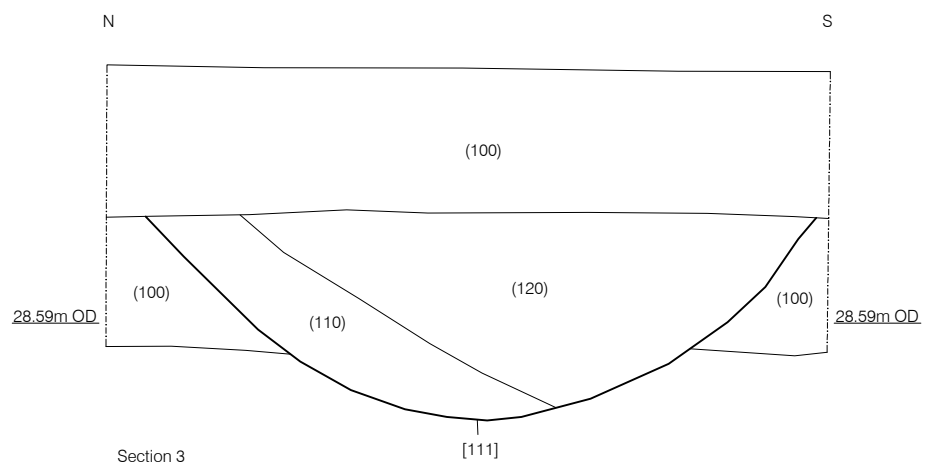
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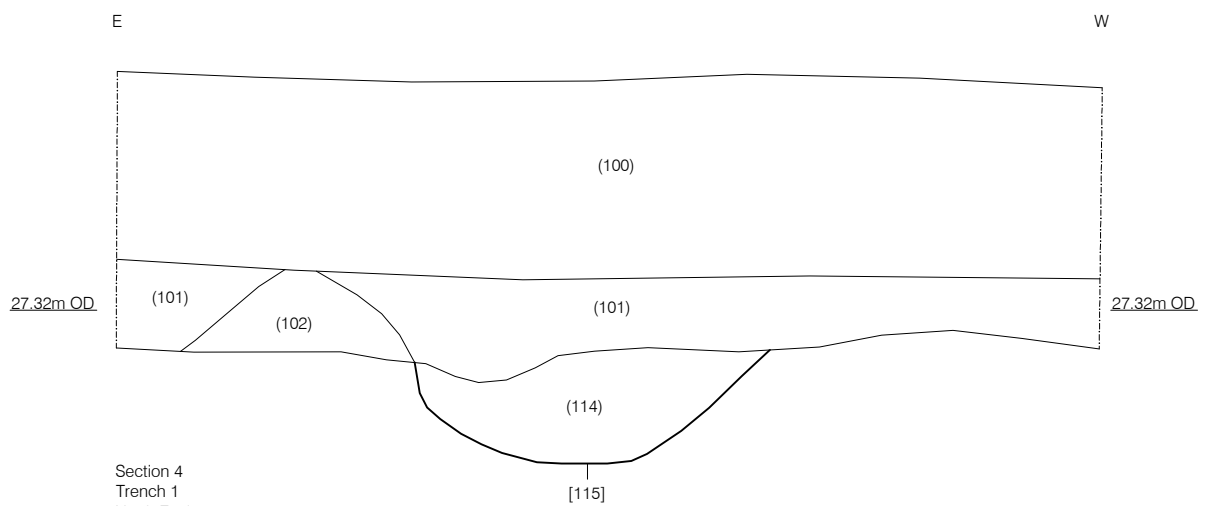




Section 1
Trench 4
West and North Facing



Section 3
Trench 2
West Facing



Section 4
Trench 1
North Facing



APPENDIX 1: PLATES



Plate 1: View E of site



Plate 2: Trench 1 view W



Plate 3: Trench 2, view N



Plate 4: Trench 3, view E



Plate 5: Trench 4, view W



Plate 6: Pit [105], Trench 4, view E



Plate 7: Trench 2, Ditch [111], view E



Plate 8: Treethrow [115], view S

APPENDIX 2: CONTEXT INDEX & TRENCH DATA

12.1 CONTEXT INDEX

| Context No | Cut | Trench | Type | Category | Length (m) | Width (m) | Depth (m) | Section | Description |
|------------|-----|--------|-------|-----------|------------|-----------|-----------|---------|--|
| 100 | 100 | | Layer | Topsoil | 0 | 0 | | | mid-brown sandy silt |
| 101 | 101 | | Layer | Subsoil | 0 | 0 | | | light brown sandy silt |
| 102 | 102 | | Layer | Natural | 0 | 0 | | | yellow sands and gravels with mineralized patches |
| 103 | 105 | 4 | Fill | Pit | 1.75 | 1.2 | 0.25 | 1 | mid-brown silty sand |
| 104 | 105 | 4 | Fill | Pit | 1.75 | 1.08 | 0.34 | 1 | black charcoal rich sandy silt |
| 105 | 105 | 4 | Cut | Pit | 3.45 | 1.2 | 0.59 | 1 | circular, moderate sides, concave base |
| 106 | 107 | 2 | Fill | Unknown | 0.55 | 0.5 | 0.1 | 2 | pale brown silty sand, carbonised material at base |
| 107 | 107 | 2 | Cut | Unknown | 0.55 | 0.5 | 0.1 | 2 | irregular, flat base |
| 108 | 109 | 2 | Fill | Unknown | 0.5 | 0.3 | 0.1 | | pale brown |
| 109 | 109 | 2 | Cut | Unknown | 0.5 | 0.3 | 0.1 | | irregular, irregular sides, flat base, |
| 110 | 111 | 2 | Fill | Ditch | 1 | 1 | 0.5 | 3 | mid-orangey brown sandy silt |
| 111 | 111 | 2 | Cut | Ditch | 1 | 1.7 | 0.52 | 3 | concave moderately sloping sides, concave base |
| 112 | 113 | 2 | Fill | Unknown | 0.5 | 0.4 | 0.1 | | dark brown sandy silt |
| 113 | 113 | 2 | Cut | Unknown | 0.5 | 0.4 | 0.1 | | highly irregular - rooting |
| 114 | 115 | 1 | Fill | Treethrow | 0.6 | 1.2 | 0.3 | 4 | brownish grey sandy silt |
| 115 | 115 | 1 | Cut | Treethrow | 0.6 | 1.2 | 0.3 | 4 | sub-circular, moderate and steep sides, concave base |
| 116 | 117 | 1 | Fill | Treethrow | 0.94 | 1.65 | 0.2 | | brownish grey sandy silt with some organic content |
| 117 | 117 | 1 | Cut | Treethrow | 0.94 | 1.65 | 0.2 | | sub-circular, shallow sides, irregular base |
| 120 | 111 | 2 | Fill | Ditch | 1 | 1.7 | 0.52 | 3 | loose, mid brown |

12.2 Trench Data

| Trench Number | Alignment | Length (m) | Max Machine depth (m) | Topsoil depth End 1 (m) | Subsoil depth End 1 (m) | Natural depth End 1 (mOD) | Topsoil depth End 2 (m) | Subsoil depth End 2 (m) | Natural depth End 2 (mOD) | Features |
|---------------|-----------|------------|-----------------------|-------------------------|-------------------------|---------------------------|-------------------------|-------------------------|---------------------------|---------------------------------|
| 1 | E-W | 30 | 0.86 | 0.38 | 0.2 | 26.87 | 0.42 | 0.2 | 27.13 | [115], [117] |
| 2 | N-S | 30 | 0.66 | 0.4 | 0.2 | 28.29 | 0.36 | 0 | 29.5 | [107], [109, Ditch [111], [113] |
| 3 | E-W | 30 | 0.37 | 0.37 | 0 | 29.77 | 0.3 | 0 | 29.81 | Blank |
| 4 | N-S | 30 | 0.62 | 0 | 0 | 30.37 | 0 | 0 | 30.67 | [105] |

APPENDIX 3: ENVIRONMENTAL

| | |
|------------------------------|-----|
| Sample Number | 1 |
| Context Number | 104 |
| Feature Number | 105 |
| Volume of flot (millilitres) | 125 |
| Volume of residue (litres) | 34 |
| FLOT RESIDUE: | |
| Charcoal | |
| Charcoal >4mm | 4 |
| Charcoal 2-4mm | 4 |
| Charcoal <2mm | 4 |
| Seeds | |
| Un-charred seeds | 1 |
| Other plant macrofossils | |
| Modern plant material | 1 |
| Roots/ tubers | 1 |
| Molluscs | |
| Terrestrial molluscs | 1 |
| HEAVY RESIDUE: | |
| Charcoal | |
| Charcoal >4mm | 4 |
| Charcoal 2-4mm | 4 |
| Finds | |
| Burnt flint | 1 |
| Glass | 1 |

Table 2: Context information for environmental samples, ENF150987.

Key: 1- Occasional, 2- fairly frequent, 3- frequent, 4- abundant.

APPENDIX 4: C14 DATING

RADIOCARBON DATING CERTIFICATE

30 June 2021

Laboratory Code SUERC-98420 (GU57802)
Submitter Sian O'Neill
Pre-Construct Archaeology
The Granary
Rectory Farm
Pampisford
CB22 3EN
Site Reference ENF150987
Context Reference 104
Sample Reference 2
Material Charcoal : Quercus roundwood
 $\delta^{13}\text{C}$ relative to VPDB -25.6 ‰
Radiocarbon Age BP 1152 \pm 29

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD) and requires calibration to the calendar timescale. The error, expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Laboratory and should be quoted as such in any reports within the scientific literature. The laboratory GU coding should also be given in parentheses after the SUERC code.

Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon* 58(1) pp.9-23.

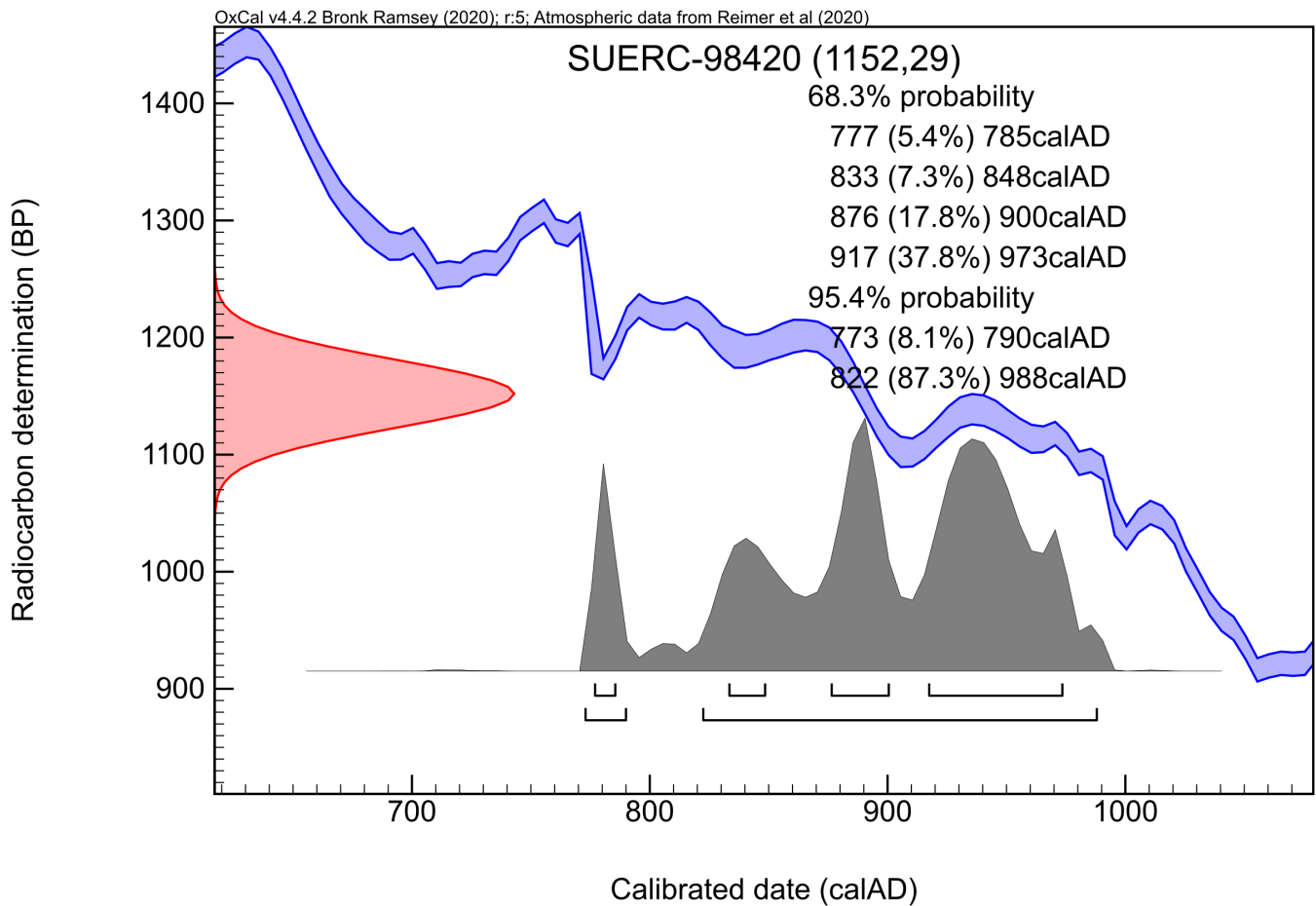
For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by :



Checked and signed off by :





The radiocarbon age given overleaf is calibrated to the calendar timescale using the Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.*

The above date ranges have been calibrated using the IntCal20 atmospheric calibration curve†

Please contact the laboratory if you wish to discuss this further.

* Bronk Ramsey (2009) *Radiocarbon* 51(1) pp.337-60

† Reimer et al. (2020) *Radiocarbon* 62(4) pp.725-57

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