



Late Anglo-Saxon, Medieval, Post-medieval and Modern Remains at Lower Brook Street, Ipswich Archaeological Excavation Report

March 2023

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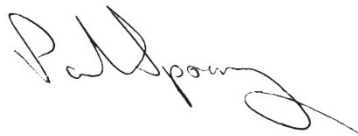
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Late Anglo-Saxon, Medieval, Post-medieval and Modern Remains at Lower Brook Street, Ipswich

Archaeological Excavation Report

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Summary

Between 16th January and 2nd August 2018 Oxford Archaeology East (OA East) carried out c.0.1ha of excavation and monitoring of demolition work at Lower Brook Street, Ipswich. The excavations followed two earlier phases of evaluation work conducted by OA East between 2016–17. Lastly, on 10th August 2021, OA East attended the site to monitor the excavation of a remediation pit into a localised area of fuel contaminated ground. Overall, the archaeological works uncovered evidence for activity spanning the Late Anglo-Saxon to modern periods with some residual Early to Middle Anglo-Saxon finds. The latter includes a rune inscribed lead charm and a coin of Aethelweard of East Anglia. Furthermore, the course of the Anglo-Saxon and medieval *Broc*, which gave its name to the street bordering the site to the east, was identified.

The excavations make a significant contribution to understanding the development of this – hitherto underreported – part of Ipswich. During the late 10th and 11th century, the site evidently lay well within the urban reach of the town. Any occupants were seemingly cleared/removed in the early 12th century when the site was incorporated into the Augustinian priory of St Peter and St Paul. The site appears to have been lain within the precincts of the priory until its dissolution, possibly within an open area given over to orchards or gardens within which only a modest build-up of medieval deposits had accumulated. Although of lower significance, these deposits yielded fragments of tile, architectural stone, and window glass, providing tentative clues about the appearance of the priory and later college buildings.

This situation continued into the post-medieval period, represented by accumulated layers across much of the site. Contemporary mapping shows that this area remained a partly open environment after the Dissolution, comprising orchards, gardens and backlands between the more built-up areas along St Peter's Street to the west and (to a lesser extent) Foundation Street (latterly Lower Brook Street?) to the east. The post-medieval soils produced moderately significant assemblages of pottery, vessel glass and tobacco-pipe (including clear evidence of a Dutch influence) perhaps relating to a population that was becoming more gentrified in this part of the town.

Furthermore, the discovery of an *in-situ* brick-built malt kiln furnace, possibly associated with the earliest configuration of late 17th to early 18th century malthouses off Turret Lane is a significant find for this field of study and to the wider town, with its rich beer making history.

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Thanks are also extended to the specialists for their contributions. Penelope Walton Rogers produced the textile report at the Anglo-Saxon Laboratory. Charlotte Wilkinson produced the textile conservation report at York Archaeological Trust Conservation Laboratories. The radiocarbon dates were supplied by the Scottish Universities Environmental Research Centre (SUERC). Documentary research into the former Turret Lane Maltings at the site was carried out at Suffolk Archives, who have kindly granted permission for the reproduction of the plan shown on Fig. 22.

1 INTRODUCTION

1.1 Scope of work

- 1.1.1 Between May 2016 and August 2018 Oxford Archaeology East (OA East) carried out two phases of evaluation trenching followed by mitigation excavation work at Lower Brook Street, Ipswich, Suffolk (IPS 865; NGR TM 1642 4420; Fig. 1). This work was commissioned by RPS (formerly CgMs) in respect of a proposed mixed residential and commercial development on the c.0.7ha site of a former printing works (Fig. 2). OA East also attended the site on 10th August 2021 to monitor the excavation of a remediation pit into a localised area of fuel contaminated ground.
- 1.1.2 The site lies in the centre of the historic town of Ipswich and in an area with a number of known Anglo-Saxon and medieval archaeological sites and remains (see Figs 2a-f). A Desk-Based Assessment (DBA) was undertaken for the development site in 2015 by RPS (Gailey 2015) which indicated that the site lay within an Area of Archaeological Importance as defined in the Ipswich Borough Local Plan.
- 1.1.3 Phase 1 of the evaluation work comprised two trenches (Test Pits 1 and 2) excavated south of the printing works building in May 2016. These works revealed natural ground at a depth of 2.3m overlain by soils dating from the medieval period onwards, in addition to 19th–20th-century brick structures probably representing malhouses which had stood on this site until the 1960s (Webster 2016; ESF 23986; <https://eprints.oxfordarchaeology.com/2866/> (OA library)). Following demolition of the printworks, Phase 2 evaluation work was undertaken in October 2017 and comprised a further five trenches (Trenches 3–7) placed within three areas of proposed development on the site. These revealed the possible course of a former brook; Anglo-Saxon features, soils and a cobbled surface; possible medieval/post-medieval buildings and deposits; and further walls probably associated with former malhouses (Fairbairn 2017; <https://eprints.oxfordarchaeology.com/6526/> (OA library)).
- 1.1.4 The subsequent OA East excavations were undertaken in accordance with a Framework Written Scheme of Investigation (WSI), prepared by OA East in November 2017 (Connor 2017a) governing the mitigation phase of the investigation, and approved by Suffolk County Council Archaeology Service (SCCAS). The Framework WSI was supplemented by approved Supplementary Method Statements for the mitigation works carried out between January and August 2018. Phase A monitored the removal of modern rubble and walls within the proposed 'Western Building' footprint development area in early 2018 and investigated underlying archaeological deposits exposed by these site works (Connor 2017b). Phase B involved the excavation of the 'Western Building' footprint; excavation of the 'North-west Building' footprint; a trench in the east of site to investigate the putative brook; and monitoring of site works across the centre and south of the site between April and August 2018 (Connor 2018).
- 1.1.5 A plan of these phases of archaeological work is presented as Fig. 3.

- 1.1.6 The site archive is currently held by OA East and will be deposited with SCCAS under the Site Code IPS 865 in due course.

1.2 Location, topography and geology

- 1.2.1 The development site is a brownfield site located in the urban centre of Ipswich. Prior to its demolition in 2018, the site was a printworks with associated outbuildings and car parking area. The site is bordered to the south by a car park with Star Lane beyond, to the west by Turret Lane, residential properties to the north and Lower Brook Street to the east (Fig. 1). The latter street is believed to preserve the name (and possibly the course) of a former brook which once joined the River Orwell, 200m south of the site.
- 1.2.2 The underlying solid geology of the development site comprises Newhaven Chalk Formation. Superficial deposits are indicated to comprise River Terrace Deposits (<https://www.bgs.ac.uk/map-viewers/bgs-geology-viewer/>, accessed 16th January 2023). During the 2016 evaluation Test Pit 2 encountered natural sand and gravel at a height of 1.6m OD.

1.3 Archaeological and historical background

- 1.3.1 A DBA of the development area was produced in 2015 which identified the high archaeological potential of the site. Key elements highlighted were its location within the Anglo-Saxon town, its potential location within the precincts of the Augustinian priory of St Peter and St Paul and Wolsey's 'Cardinal's College of St Mary', its proximity to one of the tributaries (a former brook) of the River Orwell and its potential for later post-medieval industry, particularly maltings (Gailey 2015).
- 1.3.2 A full search of the Suffolk Historic Environment Record (SHER) of a 250m radius centred on the excavation site was commissioned from SCCAS in May 2022. The following is a summary based on the DBA and results of the SHER search, with selected records shown on Fig. 4a-f, supplemented by gazetteers (Tables 82-9).

Later prehistoric: c.4000BC-AD43

- 1.3.3 The site (IPS 865) is located on river terrace deposits close to the alluvial floodplain of the River Orwell, which would have been favoured for prehistoric occupation. A Neolithic polished axe was found during road widening works approximately 175m north-east of the study site (IPS061 TM 1655 4438, not illustrated). No Bronze Age or Iron Age sites or finds have been recorded by the HER within a 250m radius of the study site.

Romano-British: c.AD43-410

- 1.3.4 No evidence of *in-situ* Roman settlement has been recorded in the immediate vicinity of the study site, although Roman pottery was found during investigations at Albions Wharf approximately 175m south-east of the study site (IPS054, TM 1661 4406, not illustrated) and a Roman artefact scatter, including a bronze vessel, was found in a garden at Wolsey's College approximately 100m south of the study site (IPS055, TM 1645 4405, not illustrated).

Anglo-Saxon: c. 410-1066 (Fig. 4a)

- 1.3.5 The site lay within the historic core of Ipswich, founded in the late 6th or early 7th century AD. By the Middle to Late Saxon period the town had developed as a substantial trading and craft production settlement or emporium and covered approximately 50ha.
- 1.3.6 There are numerous SHER entries within a 500m radius of the site, north of the River Orwell, relating to evidence for Anglo-Saxon occupation, along with findspots of metalwork and pottery. Sunken featured buildings were excavated 100m west of site at St Peter's Street (IPS 215). Early and Middle Saxon finds and features were found 160m south-west of the site at Greyfriars Road (IPS 747). Middle Saxon iron working remains were excavated 230m west of the site at Franciscan Way/Wolsey Street (IPS 720). A Middle Saxon Ipswich ware kiln was excavated 170m north of the site at Buttermarket Shopping Centre (IPS 228). Late Saxon pottery kilns were found 320m north-east of the site at Cox's Lane (IPS 206), 420m north-east of site at 22-4 Helen's Street (IPS 329) and 40m north of the site at Turret Lane School (IPS 384). Significant areas of Anglo-Saxon occupation have been identified through excavation to the north (IPS 228), north-east (IPS 210 and 355), east (IPS 211, 212 and 369), south-east (IPS 213) and south (IPS 214 and 455). Middle to Late Anglo-Saxon cemeteries have been unearthed 170m north of the site at Buttermarket Shopping Centre (IPS 228) and c.190m east of the site at Blackfriars (IPS 832 and 834). Further articulated burials have been discovered 80m west of the site at the former Oxborrows Hotel, St Peter's Street (IPS 305), 170m north of the site at St Stephen's Lane (IPS 313), 40m north of the site at Turret Lane (IPS 346), 125m north of the site at 6 Lower Brook Street (IPS 419), 130m south-east of the site at St Mary at the Quay (IPS 661) and 190m east of the site at Foundation Street (IPS 352). These past findings are mapped on Fig. 4a and summarised in a gazetteer in Appendix E, Tables 82 and 83. The Anglo-Saxon town lies within an Area of Archaeological Importance and a number of localised areas have been designated as Scheduled Monuments (Fig. 4f).
- 1.3.7 The site lies approximately 75m north-east of St Peter's Church (IPS 274 and IPS 1392), which is thought to have been the site of an early minster. The church is possibly the same as the church of Gislebert recorded in the Domesday book. It is possible that the main street system of the Anglo-Saxon town has largely survived. A brook is known to have extended along the eastern site boundary, from which Lower Brook Street later got its name. The brook possibly crossed the eastern part of the site on a north-south alignment, before it led down to the river.
- 1.3.8 During construction of the Suffolk Press buildings in the north-west part of the site in the 1960s, a wood-lined well '3 foot square' was found. It was recorded to a 'depth of 11 feet with sherds of Thetford ware, 2 boars tusks and a horn core' (IPS 364; Owles and Smedley 1964, 120).

Medieval: c. 1066-1530 (Fig. 4b)

- 1.3.9 By the medieval period the site may have lain within the grounds of the priory of St Peter and St Paul (speculative extent shown as IPS 839). This Augustinian foundation was established in the early 12th century (c.1130) and incorporated St Peter's Church (IPS 1392). Archaeological evaluation at the former Cardinal Works, approximately 20m

south-west of the site, recorded structural features and burials associated with the priory (IPS 448, 455 and 841; Martin *et al.* 2001, 101). A septaria wall and four skeletons, possibly associated with the priory or college, were also unearthed 80m south of the site (IPS 363). It is possible that the priory may have extended northwards into the study site. Human and animal bone were found in (possibly imported) gravel 15m north-west of the site (IPS 824).

- 1.3.10 The site lay within the grounds of the Cardinal's College of St Mary (IPS 275) – sometimes known as Cardinal Wolsey's college – constructed in 1528, built on the site of the former priory. Following Wolsey's death, the unfinished buildings were demolished and building materials sent to London for use in Whitehall Palace. The remains of a fine brick gateway (IPS 223) are located towards the former tidal reaches of the River Orwell, 80m south of the site.
- 1.3.11 The medieval town of Ipswich has been defined as an Area of Archaeological Importance in the Local Plan (IPS 419, not illustrated). By the medieval period the urban core was centred on Foundation Street/Smart Street to the east of the study site.
- 1.3.12 The SHERs relating to medieval settlement, priories, friaries and churches in the vicinity of site are mapped on Fig. 4b and summarised in a gazetteer in Appendix E, Table 84. In addition to the Augustinian priory, extensive parts of the surrounding town lay within the monastic precincts of a Franciscan Friary (IPS 726) to the west, a Dominican Friary (IPS 830) to the east and a Carmelite Friary (IPS 807) to the north. The only significant medieval settlement remains excavated in the near vicinity of the site were early medieval structures identified 45m to the south-east at the junction of Lower Brook Street and Foundation Street (IPS 733).

Post-medieval: c. 1530-present (Fig. 4c)

- 1.3.13 After the demolition of the unfinished college, the site was subsequently subject to post-medieval and later phases of redevelopment.
- 1.3.14 Fieldwork to the east of St Peter's Church at the former Cardinal Works Site recorded walls and robbed out wall lines thought to relate to the College (IPS 455; Martin *et al.* 2001, 101).
- 1.3.15 A map regression exercise was carried out as part of the DBA (Gailey 2015, figs 4 and 5). Speed's map of 1610 shows the eastern and western boundaries of the study site were built-up along the street frontages of Turret Lane and Lower Brook Street (see Discussion Fig. 17). The remainder of the site appears to have comprised backlands and gardens. Ogilby's map of 1674 (see Discussion Fig. 18) confirms the built-up street frontage along Lower Brook Street, but of note is that the southern boundary did not front onto Star Lane. The buildings in the north-west of the study site may be malthouses (as shown on later historic maps). Vayshead Orchard occupied the northern portion of the site. A pond was located to the south-west of the study site (IPS1848).
- 1.3.16 There are numerous SHER entries in the vicinity relating to evidence for post-medieval occupation, along with findspots of imported pottery, clay tobacco pipe and glass vessels. These past findings are mapped on Fig. 4c and summarised in a gazetteer in Appendix E, Tables 85 and 86. Approximately 80m west of the site lies a notable row of

early post-medieval buildings recorded along St Peter's Street, including the site of Lord Curzon's House (IPS 412), with buildings of this period continuing north to St Nicholas Street and Silent Street. The site of the former cattle market (IPS 360) lay to the west of St Peter's Street. The site of the Duke of Suffolk's House and nearby fish market (IPS 1746) lies 70m north of the site with the site of the timber market (IPS 1757) and 19 century bread ovens (IPS 343) beyond. Approximately 100m to the south of the site, the former medieval foreshore (delineated by College Street) was subject to progressive reclamation from this period onwards, where a number of findspots of imported continental pottery, clay tobacco pipe and vessel glass have been found.

Modern: c. 1700-present (Fig. 4d)

- 1.3.17 By the late 18th century, as shown on Pennington's map of 1778 (Gailey 2015, fig. 6), the orchard still occupied the north of the site, whilst the pond formed part of a landscaped garden which lay to the south-west of the site boundary, possibly associated with Nos 30/32 Lower Brook Street, which had been constructed by this date on the site. The malthouses in the north-west of the site had expanded with additional development in the northern part of the site, to the north of the orchard (see Discussion Fig. 19).
- 1.3.18 By the mid-19th century, White's Map of 1867 (Gailey 2015, fig. 7) shows that the orchard and the buildings to the north had been cleared and replaced with terraced housing fronting onto Lower Brook Street with gardens to the rear. To the south, further buildings, possibly commercial or industrial, fronted onto Lower Brook Street whilst the malthouses in the north-west of the site had been extended eastwards.
- 1.3.19 The late 19th century (1884) (Gailey 2015, fig. 8) Ordnance Survey map shows the site in more detail. Malthouses occupied the north-west of the site accessed via Turret Lane, which at this date did not directly bound the site to the west. Terraced houses occupied the northern part of the site, whilst further buildings fronted Lower Brook Street (see Discussion Fig. 20).
- 1.3.20 Brewing-related SHER monuments are shown on Fig. 4d and summarised in a gazetteer in Appendix E, Table 87.
- 1.3.21 By the early 20th century there was little change to the study site. Between 1902 and 1950 (Gailey 2015, figs 9 and 10) Turret Lane had been widened and subsequently abutted the site to the west. The malthouses in the north-west of the site and the housing in the north of the site had been demolished and replaced by a substantial furniture factory.
- 1.3.22 Between 1950 and 1966 (Gailey 2015, fig. 11) all the former buildings on the site had been demolished apart from Nos 30 and 32 Lower Brook Street and the building in the south-eastern corner of the study site fronting Lower Brook Street. The north of the site comprised a printworks building.
- 1.3.23 A newspaper article dated 5th January 2016 shows a picture dated during the First World War in which the premises are shown as having been owned by Tibbenhams. The company was founded in 1904 and manufactured high class furniture, but during the First World War built wooden wings and propellers for the Royal Flying Corps. The

photograph is taken from Turret Lane, north-west of the site, and shows a fine timbered building that was demolished in 1966, to make way for the printworks. The former timber building was possibly of 17th-century date. Buildings were shown on the 1610 Speed map and the 1674 Ogilby Map, although with the timber building possibly the one shown on the Ogilby Map. This range of buildings associated with the furniture factory appeared on all maps leading up to the 1950 Ordnance Survey map.

- 1.3.24 By the 1980s (Gailey 2015, fig. 12) the building fronting Lower Brook Street was demolished and Star Lane/Foundation Street was expanded to bound the site to the south and south-east. A car park occupied the south of the site. There has been no subsequent change to the study site until the current works.

1.4 Previous work

Phase 1 evaluation (Fig. 3)

- 1.4.1 OA East undertook a test pitting investigation on the site in 2016 (IPS 865; ESF 23986) that comprised two test pits excavated within the printworks car park to provide information regarding the potential survival and character of any archaeological remains in this area.
- 1.4.2 **Test Pit 1** revealed a 19th-century cellar with an *in situ* asphalt floor located at a depth of 2.3m. The cellar had been subsequently backfilled with layers of brick and concrete rubble in the 1960s.
- 1.4.3 **Test Pit 2** uncovered natural sands and gravels at a depth of 2.3m below ground level (Fig. 15, Section 2). Above the natural was a 2m-thick sequence of soil layers, probably resulting from dumping and cultivation from the late medieval period to the early 19th century. The soils contained pottery and tile ranging in date from the medieval to the early post-medieval periods. Animal bones, oyster shells and charred seeds were found in addition to a small number of human bone fragments. Evidence for one or more possible garden structures of post-medieval date was also found. A 19th-century brick wall was thought to probably have been the remains of one of the industrial buildings that occupied the site during the 19th and 20th centuries (Webster 2016).

Phase 2 evaluation (Fig. 3)

- 1.4.4 A total of five additional trenches (Trenches 3–7) were opened in October 2017 to provide a further sample evaluation in areas of the demolished printworks buildings not previously investigated.
- 1.4.5 **Trench 3**, at the southern end of the site, was located close to an area where an ornamental pond was thought to have existed in the 18th century. The undulating stratigraphy revealed suggested that Trench 3 was located close to this feature (see below and Fig. 15; Section 16).
- 1.4.6 **Trench 4** was located in an area recently occupied by the 1960s printworks building and found evidence for massive stanchion blocks that were closely spaced and penetrated into the natural gravels more than 3m below ground level. These had caused widespread truncation and had disturbed archaeological deposits to such an extent little useful data could be retrieved.

- 1.4.7 **Trench 5** revealed a possible former water course that was probably open (or becoming gradually infilled) in the Middle Anglo-Saxon to medieval periods. A silver coin of Aethelweard and a lead plaque inscribed with runes was found in its fills (see App. B.2). Overlying the extinct brook were layers or dumps of soil, possibly associated with a 17th- to 18th-century orchard and gardens. In the 19th century the area was built over with brick houses, the foundations of which had survived (see below and Fig. 15; Section 17).
- 1.4.8 **Trench 6** revealed a Late Anglo-Saxon feature, possibly a sunken featured building with posts and remnants of possible wooden planks, with good survival of associated organic materials. Evidence for later layers/dumps of soil were found overlying it, although any subsequent deposits had been removed by a 19th- or 20th-century brick cellar (see below and Fig. 8; Section 20).
- 1.4.9 **Trench 7** revealed a complex stratigraphic sequence beginning with intercutting early medieval pits and a buried soil, overlying which was a series of soil layers/dumps that probably dated to the 17th century (see below and Fig. 15; Sections 10 and 13). During the late 17th century these soil layers were built over by a probable malthouse, of which the associated foundations, floors and yards had survived.

2 EXCAVATION AIMS AND METHODOLOGY

2.1 Aims

2.1.1 The original aims of the project were set out in the Framework WSI (Connor 2017a) and Supplementary Method Statements (Connor 2017b; Connor 2018) and further refined in the Post Excavation Assessment and Updated Project Design (Clarke 2021).

2.1.2 The overall aim of the investigation was:

To preserve by record or *in situ* as agreed the archaeological evidence contained within the footprint of the development area, during remediation and prior to development and investigate the origins, date, development, phasing, spatial organisation, character, function, status, and significance of the remains revealed, and to place these in their local, regional and national archaeological context.

2.2 Site specific research questions

2.2.1 Based on the results of the Phase 1 (Test Pits 1 and 2) and Phase 2 (Trenches 3–7) evaluation work, a suite of research questions was formulated. These were set out in the Framework WSI for the project and were considered sufficient for the mitigation work detailed in the two Supplementary Method Statements.

2.2.2 The aims and research questions (RQs) were:

1. to contribute to research themes associated with Anglo-Saxon urbanisation, industry and economy;
2. to contribute to research themes associated with the role of medieval religious establishments within an urban context;
3. to investigate the water management on the site and what influences urbanisation and the proximity of the priory had on water management;
4. to contribute to themes surrounding trade particularly in the Anglo-Saxon and medieval periods;
5. to contribute to an understanding of the influence of religion and other belief systems during the Anglo-Saxon and medieval periods;
6. to understand the character of the site in the immediate post-dissolution period and what role it played in the urban landscape - open space/urban food production/gentrification; and
7. to contribute to an understanding of the development of post-medieval industries, particularly related to the malting industry.

2.3 Regional research aims

2.3.1 The site specific research questions are relevant to, and will contribute to, the goals of Regional Research Frameworks relevant to this area:

Research and Archaeology: A Framework for the Eastern counties: 1. Resource Assessment (Glazebrook 1997, East Anglian Archaeology Occasional Papers 3);

Research and Archaeology: A Framework for the Eastern counties: 2. Research Agenda and Strategy (Brown & Glazebrook 2000, East Anglian Archaeology Occasional Papers 8);

Research and Archaeology Revisited: A Revised Framework for the East of England (Medlycott 2011, East Anglian Archaeology Occasional Papers 24); and

Latest review undertaken between 2018-20: <https://researchframeworks.org/eoe/>.

2.4 Post-excavation assessment

2.4.1 The post-excavation assessment (Clarke 2021) showed that all the original aims and objectives of the excavation stated above could be met through the analysis of the excavated materials. No additional aims were identified.

2.4.2 In general terms the site will contribute to the over-arching research into the evolving topography of Anglo-Saxon and medieval Ipswich and the nature of settlement activity close to the northern bank of the River Orwell. The site also provides an opportunity to study an early modern malt producing site and compare the construction of the newly discovered malt kiln with those of the wider region.

2.5 Fieldwork methodology

2.5.1 The methodologies for the earlier phases of evaluation test pit (Phase 1) and trenching (Phase 2) work are included in the relevant reports (Webster 2016; Fairbairn 2017).

Phase A: monitoring of site works (Fig. 3)

2.5.2 The methodology used followed that detailed in the Supplementary Method Statement (Connor 2017b) which required monitoring, excavation and recording primarily within the proposed building footprints.

2.5.3 The concrete slab surfacing was stripped from the area by the demolition contractor (Plates 1–4). Further modern rubble and walls were removed by machine to expose post-medieval archaeological layers and structures under the supervision of a suitably qualified/experienced archaeologist. The exposed surfaces were cleaned and a record made of the post-medieval buildings and any associated features. Once these features had been characterised, sampled and recorded to the satisfaction of the Planning Archaeologist, a mechanical excavator with a flat-bladed bucket removed post-medieval walls and associated structures to reveal underlying deposits.

2.5.4 The results of the Phase 2 evaluation (Trenches 6 and 7) suggested that some earlier deposits were present in this area. These deposits were mapped and characterised by means of a series of 1m-square hand dug test pits (Test Pits A–T) and sieving and metal detecting to aid finds recovery.

Phase B: Western Building excavation, North-west Building excavation, brook investigation and monitoring work (Fig. 3)

2.5.5 The methodology used followed that detailed in the Supplementary Method Statement (Connor 2018) which required archaeological investigation work in four areas of the development site, with each area having different parameters and a tailored strategy for each:

Brook investigation work: Area 8

- 2.5.6 Trench 5 of the evaluation exposed a sequence of apparently water-lain deposits that had been interpreted as a stream, the 'brook' of Lower Brook Street. The evaluation did not expose the western bank of this stream and it was proposed to excavate a trench to the north-west (to avoid dense piles that truncated this area) which would reach the base of the archaeological sequence to reveal the western bank of the stream. The base of this trench was 5m x 1.5m in area and the sides were shored to allow safe access for investigation, sampling and recording of the sequence.

North-west Building footprint excavation: Area 9

- 2.5.7 The North-west Building footprint was c.0.017ha. Due to the proximity of a party wall to the north of the proposed building and the street boundary on the west side (and taking into consideration that evaluation Trench 6 was excavated in this location), it was proposed to excavate the area to the south of the base of evaluation Trench 6. This c.14m x 10m area was excavated to the base of the archaeological sequence. It was shored to provide safe access to the entire sequence and a pump was used to ensure the base was excavated and recorded fully.

Western Building footprint excavation: Areas 10 and 11

- 2.5.8 The formation level for the piling mat for the 'Western Building' footprint determined the maximum depth and area of excavation with a contingency for deeper excavation determined in consultation with the consultant and the County Archaeology Advisor once the formation level was reached. The piling mat covered a c.0.08ha area. The excavation was to 3.41m OD in the northern part of the building footprint (300mm below formation level for the piling mat) and to 3.14m OD in the southern part of the building footprint (300mm below formation level for the piling mat).

Monitoring work

- 2.5.9 Obstruction removal in the central and southern areas of the site was undertaken by the demolition contractor and monitored by a suitably qualified and experienced archaeologist. The additional visit on 10th August 2021 monitored the excavation of a 10m x 8m wide by 1.6m-deep remediation pit, excavated into a localised area of fuel-contaminated ground within the northern part of Area 10 (Fig. 3). This work only revealed disturbed and truncated ground. No archaeological features were observed.

All works

- 2.5.10 A toothless ditching bucket was to be used to strip bulk deposits of no archaeological value. Where bulk deposits were encountered and assessed to have some archaeological value, they were subject to a sampling strategy to collect environmental and economic indicators prior to machine stripping. Evaluation suggested that some deposits of this character would be found within this area, it was proposed that these were mapped, and the deposits characterised by means of a series of 1m square hand dug test pits, sieving and metal detecting to be used to aid finds recovery. Where machine excavation was employed, deposits were excavated in spits not greater than 0.1m thick.

- 2.5.11 All machine excavation took place under the supervision of a suitably qualified and experienced archaeologist.
- 2.5.12 The site survey was carried out using a Leica GPS GS08 with SmartNET.
- 2.5.13 Spoil, exposed surfaces and features were scanned with a metal detector. All metal-detected and hand-collected finds were retained for inspection, other than those which were obviously modern.
- 2.5.14 To aid retrieval of small items such as fish bones, artefacts etc on site, sieving was to be utilised to target medieval and earlier features in order to contribute towards the project research aims.
- 2.5.15 If human remains were encountered during excavation, the Client, RPS (formerly CgMs), and the Planning Archaeologist were to be informed immediately. Human remains were to be excavated in accordance with all appropriate legislation and Environmental Health regulations. Excavation would only take place after Oxford Archaeology had obtained a Ministry of Justice exhumation license.
- 2.5.16 Sufficient excavation was carried out in line with the proportions of each feature class to be excavated outlined in the Supplementary Method Statements.
- 2.5.17 All archaeological features and deposits were recorded using OA East's pro-forma sheets. Trench locations, plans and sections were recorded at appropriate scales and high-resolution digital photographs were taken of all relevant features and deposits.
- 2.5.18 All contexts were subject to initial on-site bulk soil sample processing to provide rapid assessment of environmental remains. Where contexts proved to be devoid of environmental remains, they were discarded on site. During this initial scan, 45 samples were assessed as having potential for preservation of environmental remains and these were retained and will be subject to full processing and analysis. These each totalled between 10-40L and are stored at OA East's environmental processing facility at Bourn.

3 RESULTS

3.1 Introduction and presentation of results

- 3.1.1 The development site was subject to four open-area excavations (Areas 8–11) totalling *c.*0.1ha (Fig. 5). Area 8 was opened to investigate the course of the possible brook identified in Phase 2 evaluation Trench 5. Area 9 targeted Saxo-Norman remains encountered by Phase 2 evaluation Trench 6 beneath the 'North-west Building' footprint. Areas 10 and 11 were opened to investigate the northern and southern extent of the 'Western Building' footprint where remains of medieval origin were encountered by Phase 2 evaluation Trench 7. In addition, archaeological monitoring of site works was undertaken across a large extent of the site (see Fig. 3).
- 3.1.2 The phasing presented below is based on stratigraphy and spatial associations, with similarity of morphology of features also considered. Where possible this has been combined with dating evidence provided by stratified artefacts and radiocarbon dating (Table 17; Appendix C.6).
- 3.1.3 Summary descriptions of the features identified are given in this section supplemented by a full context inventory presented in Appendix A, Table 19. Finds and environmental reports are provided in Appendices B and C respectively. An overall plan of the results of the excavation is presented in Fig. 5. Excavation plans of Areas 8–11 with phasing and grouping of features are presented in Figs 6, 7 and 9–13. Selected sections are presented as Figs 8 and 15. Photographs of a selection of features are provided in Plates 5–17.
- 3.1.4 Four main periods of activity have been identified:
- Period 0: brook
 - Period 1: Late Anglo-Saxon (*c.*AD850–1066)
 - Period 1.1: (Area 9) relict soil, east-west plot boundary, gullies, pits and postholes
 - Period 1.2: (Area 9) north-south plot boundary, pits and postholes
 - Period 2: medieval (*c.*AD1066–1530)
 - Period 3: post-medieval (*c.*AD1530–1700)
 - Period 4: modern (*c.*AD1700 – present)
 - Period 4.1: *c.*18th–19th century malshouses
 - Period 4.2: early 20th-century furniture factory
 - Period 4.3: later 20th-century printworks

3.2 Residual material

- 3.2.1 A small assemblage of 16 prehistoric flints, Roman (coins and ceramic building material (CBM)) and Early to Middle Anglo-Saxon (pottery) finds was recovered from the former brook deposits and from Period 1–4 excavated features and deposit layers. This material is likely to have derived from nearby prehistoric, Roman and Early to Middle Anglo-Saxon activity that was subsequently reworked into these features and deposits.

3.3 Unstratified material

- 3.3.1 A small proportion of the pottery assemblage (43 sherds, 1159g) was recovered as unstratified surface finds during the monitoring of site demolition works which, by sherd count, comprised Mid–Late Anglo-Saxon wares (61%), medieval wares (14%) and modern material (25%). The monitoring work also recovered 12 fragments (4680g) of unstratified CBM of post-medieval date.

3.4 Stratigraphic overview

Natural ground level

- 3.4.1 Natural sands and gravels comprising the River Terrace Deposits were only exposed in a few locations across the development site. Test Pit 2 encountered clean sand and gravel at a height of *c.*1.6m OD (Fig. 15, Section 2). This deposit was overlain by a *c.*0.2m- thick buried soil (211) containing 10th–12th century pottery to a height of *c.*1.8m OD which probably approximates the height of natural ground in the southern part of the site. However, further south along the southern margins of the site, Trench 3 revealed that the natural ground had probably been truncated to *c.*0.7m OD by a large ornamental pond shown on historical maps of the site (Fig. 15, Section 16). Natural deposits were also encountered by Area 8 at a height of *c.*1.8m OD, but probably extended further as their upper horizon was truncated by Late Anglo-Saxon pits, themselves cut from a height of *c.*2m OD (Fig. 8, Section 549). To the west, Area 9 also encountered Late Anglo-Saxon pits and ditches truncating natural deposits and a *c.*0.2–0.3 thickness of relict soil between *c.*1.7–2m OD. The natural land surface across the site may be described as fairly level with perhaps a gradual fall in elevation from *c.*2m OD in the north to *c.*1.8m OD in the south.
- 3.4.2 The eastern margins of the site, east of the brook, may have lain at a higher elevation. In Trench 5, the eastern side of the brook's channel (**507**) was defined by a bank of sand and gravel overlain by successive lenses of mid greyish brown silty sand to a height of *c.*2.6m OD (Fig. 15, Section 17). However, it is possible this layered bank material was not a build-up of alluvium but a man-made levy, perhaps to prevent flooding.

Deposit sequence

Late Anglo-Saxon deposits

- 3.4.3 In the north of the site, the Late Anglo-Saxon features encountered in evaluation Trench 6 were truncated by post-medieval deposits from a height of 1.43m OD. During the excavation phase of the investigation, both the geological horizon and buried soil in Areas 8 and 9 were cut by Late Anglo-Saxon features between heights of *c.*1.7–2m OD (Fig. 8). In the southern part of the site, no features were observed cutting the buried soil or geological horizon in Test Pit 2, which lay at *c.*1.8m OD (Fig. 15, Section 2). There was no evidence for any build-up of deposits resulting from Late Anglo-Saxon occupation across the site.

Medieval deposits

3.4.4 In the south of the site, Test Pit 2 and Trench 3 revealed medieval deposits extending to a height of *c.*2.5m OD (Fig. 15, Sections 2 and 16). To the north, Trench 5 revealed the upper horizon of medieval deposits that infilled the brook at a height of *c.*2.6m OD (Fig. 15, Section 17). To the west, in Trench 6, Late Anglo-Saxon deposits were directly overlain by post-medieval deposits, suggesting a degree of truncation in the north-western corner of the site may have removed medieval material. Trench 7 encountered medieval deposits extending up to a height of *c.*2.5m OD (Fig. 15, Section 10). During the mitigation phase of work, hand-excavated Test Pits A, J, K, O and Q in Areas 10 and 11 encountered medieval deposits to heights of between *c.*2.5–2.6m OD (Fig. 15, Sections 559, 563, 567, 569 and 573). Therefore, across the medieval period there was a build-up of between *c.*0.5–0.7m of deposits on the site which by the end of the period had raised the ground level to between *c.*2.6m OD in the north and *c.*2.5m OD in the south of the site.

Post-medieval deposits

3.4.5 In the southern part of the site, Trench 3 revealed post-medieval deposits at a height of 2.6m OD (Fig. 15, Section 16). To the north, the datable artefacts from the brook infill in Trench 5 suggest the brook was probably infilled during the early post-medieval period. The upper horizon of the brook deposits extended to a height of *c.*2.5m OD and overlain by further post-medieval layers to *c.*3m OD (Fig. 15, Section 17). The upper horizons of post-medieval deposits in Trenches 6 and 7 were truncated by modern brick-built structures and a floor (Fig. 8, Section 20 and Fig. 15, Sections 10 and 13). However, during the mitigation excavations, Test Pits J, K and Q in Areas 10 and 11 revealed post-medieval deposits extending to a height of *c.*2.8m OD (Fig. 15, Sections 559 and 563; Fig. 15, Section 569). Therefore, across the post-medieval period there was a further build-up of between *c.*0.1–0.4m of deposits on the site which by the end of the period had further raised the ground level to between *c.*2.8–3m OD in the north and *c.*2.6m OD in the south. An exception to this interpretation was Test Pit 2, where a build-up of garden soil was recorded to a height of 3.1m OD (Fig. 15, Section 2). These deposits contained a wealth of artefacts and ecofacts from multiple periods and may represent middening or 'night soil' activity (or extensive soil movement/dumping) in that part of the site across this period.

Modern deposits

3.4.6 Trench 3 revealed modern deposits up to a height of *c.*2.9m OD in the southern part of the site, where they were truncated by works associated with recent demolition in this area (Fig. 15, Section 16). To the north, Trench 5 revealed a *c.*18th–19th century brick-built wall foundation from a height of 2.95m OD and a brick floor at a height of *c.*3.9m OD (Fig. 15, Section 17). To the north-west, Trench 6 revealed the floor of a brick-built cellar excavated down to a height of *c.*2m OD (Fig. 8, Section 20). Trench 7 encountered an 18th century brick-built wall foundation which extended between *c.*2.6–3.6m OD (Fig. 15, Sections 10 and 13). Within excavation Areas 10 and 11, a total of 16 test pits (Test Pits A–M, O, Q and S) recorded numerous brick-built wall foundations between heights of *c.*2.7–3.6m OD (examples shown on Fig. 15). Metalled or cobbled stone surfaces (representing internal floors or external yards) were also uncovered in the

western part of the site by Test Pits C, E, H, I and O at heights of between *c.*2.8–3.3m OD. Test Pit L also revealed a chalk and mortar floor at a height of *c.*3m OD. Therefore, across the modern period (prior to the building of the printworks in the 1950s) the ground level was raised by a further *c.*1.1–1.3m of deposits. These resulted from the building of brick structures and the laying of floors and cobbled surfaces across the site, to a (truncated) height of *c.*3.9m OD.

3.4.7 The ground level of the site after the demolition of the former printworks lay between *c.*3.5–4m OD.

Summary

3.4.8 This stratigraphic framework forms the basis of the phasing of the site given in the following sections, with the brook described separately in Section 3.5; its suggested course is shown on Figs 5 and 9. A summary of the site's stratigraphy is given in the following table.

Deposit date	Thickness of deposits	Height of upper horizon in north of site	Height of upper horizon in south of site	Period
Modern	<i>c.</i> 1.1–1.3m	<i>c.</i> 3.9m OD		4
Post-medieval	<i>c.</i> 0.1–0.4m	<i>c.</i> 2.8–3m OD	<i>c.</i> 2.6mOD	3
Medieval	<i>c.</i> 0.5–0.7m	<i>c.</i> 2.6m OD	<i>c.</i> 2.5m OD	2
Late Anglo-Saxon	-	<i>c.</i> 2m OD	-	1
Natural geology and overlying soil	<i>c.</i> 0.2–0.3m thickness of buried soil overlying geology	<i>c.</i> 2m OD	<i>c.</i> 1.8m OD	-

Table 1: Summary of deposit sequence

3.5 Period 0: brook

Trenches 4 and 5 (Figs 5 and 9)

3.5.1 The eastern side of a possible watercourse or brook was mapped in the eastern part of the site during the Phase 2 evaluation work (Fairbairn 2017), although its course was not well-defined in plan and water-ingress prevented detailed investigation. In Trench 5, this brook was evident as a steep-sided, irregular and diffuse 'cut' between *c.*1.67–2.4m OD (Fig. 15, Section 17, 507). A raised lip or natural bank of sand and gravel defined the eastern side of the brook. A small sondage was machine-excavated to the base of this feature a depth of 1.17m OD. The lower profile of the brook contained a series of alluvial deposits that produced no finds, to a height of 1.56m OD. Its basal fill (522) was a 0.18m thick, soft dark grey containing virtually no coarse components. This was overlain by a thin band 0.05m thick of mid orange sand (521) beneath a mixed layer of sands and silts (520) up to 0.16m thick. A succession of thin lenses of mid greyish brown silty sand (523) was recorded overlying the natural ground or bank between *c.*2–2.6m OD east of the brook. These were described as waterlain and may represent an earlier defunct channel.

3.5.2 In Trench 4 to the south, a series of organic light to dark greyish/reddish/orange brown sandy or clayey silt fills of the brook (413) was also revealed at the base of the trench (400–404; not illustrated). Together the fills measured 0.9m thick, with fill 401 producing

a single sherd of 10th–13th-century pottery. However, it was not possible to enter this trench to make an accurate record of their extent as it contained contaminated ground.

Area 8

- 3.5.3 Area 8 was opened to locate the western bank of the brook. This trench was excavated to a depth of 1.22m OD. However, evidence for alluvial deposits or a water cut channel was not forthcoming. Therefore, the course of the brook's western bank presumably ran between Trench 5 and Area 8, with its suggested course shown on Fig. 9.

3.6 Period 1: Late Anglo-Saxon (c.AD850-1066)

Introduction (Fig. 5)

- 3.6.1 In the western part of the site, pits containing Late Anglo-Saxon artefacts were recorded in evaluation Trench 6. The low elevation of contact between Late Anglo-Saxon and post-medieval deposits recorded by Trench 6 (c.1.4m OD) compared with the rest of the site indicated that the north-western corner of the site had suffered a significant degree of truncation during the post-medieval period. Full descriptions of deposits excavated during the evaluation can be found in the Phase 2 evaluation report (Fairbairn 2017). Presumably, the eastern margins of the site were traversed from north to south by the open watercourse of the brook.
- 3.6.2 Areas 8 and 9 were machine-excavated down to 2.1m OD and between 1.8–2m OD respectively. Natural sands and gravels and an intermittent relict soil were encountered at these levels, which were cut by a high density of linear and discrete features dated by associated pottery, worked bone items, metalwork and a radiocarbon date, to the Late Anglo-Saxon period. Towards the northern limit of Area 9, an east–west boundary alignment was defined by a succession of four closely-spaced linear ditches (Period 1.1). This alignment was cut by a substantial north-south aligned ditch with evidence for a parallel ditch to its west (Period 1.2). Both the earlier and later ditch alignments appear to have been respected by a number of pits and postholes, suggesting intensive occupation of the site that may have extended in all directions from Area 9 and at least as far as Area 8 to the east, possibly up to the brook (Fig. 5).

Area 8 (Figs 5 and 6)

- 3.6.3 A group of five intercutting pits (**1035**, **1037**, **1230**, **1232** and **1234**) in this area – close to the brook – produced Late Anglo-Saxon pottery. Each pit was sub-circular in plan with steep-sided profiles that measured between 0.8-1.7m in diameter and, with the exception of pit **1035**, a maximum of 0.8m deep. Pit **1035** continued below the excavated depth of the trench and may represent a well. Their single fills consisted of similar mid to dark grey sandy silty clays with occasional gravel inclusions (**1036**, **1038**, **1229**, **1231** and **1233**). Two fills (**1036** and **1038**) produced a combined total of five sherds of Thetford-type ware and Badorf ware, including an 11th-century type jar rim (App. B.8.29). The upper horizon of these pits was cut by a modern (Period 4) truncation level (**1033**) at c.2m OD (Fig. 8, Section 549).

Period 1.1

Trench 6 (Figs 5 and 7 and Fig. 8, Section 20)

- 3.6.4 The earliest feature encountered in Trench 6 was a pit (**606**) extending from *c.*1.05-1.4m OD (Fig. 8, Section 20). It contained three fills (605, 607 and 608) that consisted of dark greenish grey/reddish brown silt and sand which produced Late Anglo-Saxon pottery sherds (some possibly burnt), a piece of vitrified hearth lining, a copper-alloy buckle plate (SF 22) and mounts (SFs 14 and 23), oyster shell, and butchered animal bone. Fragmentary remains of wooden planks were also present overlying fill 605; four of these items (SF 37–40) were recovered. On the eastern side of the feature were the remains of three stakes on a broad north–south alignment, only one of which had survived sufficiently to enable its retrieval (SF 36; see App. B.13). It was cut on its eastern side by a steep-sided pit (**610**) measuring *c.*2m long, 0.96m wide and 0.09m deep which contained two fills (611 and 612) that produced fragments of cattle bone (Fig. 7).
- 3.6.5 Both these features were overlain by a 0.18m-thick sequence of deposits (603–4) which produced further finds of the period, including a lead disc brooch (SF 20; App. Fig. B.3.1) and a cylindrical lead weight (SF 21). The features and layers produced a combined total of 38 sherds of Ipswich Thetford-type ware, two sherds of Saxo-Norman Wares and three sherds of St Neots-type ware, suggesting a late 10th/11th-century date (App. B.8.28). These layers were overlain by Period 3 (post-medieval) deposits (see below).

Area 9 (Figs 5 and 7)

Relict soil

- 3.6.6 Intermittent vestiges of a buried soil (1039=1054=1070=1075=1146=1219-20; 1075 shown on Fig. 7) between *c.*0.2–0.3m thick were recorded above the geological horizon. It consisted of dark greenish grey or brownish grey sandy silt and was cut by Period 1 features. It produced mostly sherds (63) of Late Anglo-Saxon pottery (Ipswich Thetford-type ware (including a spouted pitcher; App. Fig. B.8.1, no. 2), St Neots-type ware and Saxo-Norman Wares) along with a few residual Early to Middle Anglo-Saxon (10) and intrusive medieval (6) sherds. Overall, this group of pottery may be of mid to late 11th century date (App. B.8.30). A large piece of a Scandinavian-style bone comb (SF 160) was recovered from layer 1146 (App. Fig. B.12.3). This layer also contained the complete skeletal remains (296 fragments, 6220g) of a neonatal pig (App. C.2.5).

Ditch 1182

- 3.6.7 The earliest feature appeared to be a short length of sinuous ditch (Ditch 1182; comprising cuts **1182** and **1186**) in the north-east corner of the area. The ditch, which extended southwards from the northern edge of excavation for 2.2m before terminating, measured 0.76m wide and 0.15m deep, with a U-shaped profile. It was filled by dark brownish grey silty sand with occasional charcoal and gravel inclusions (1183 and 1187). The fills produced two sherds of Early Saxon handmade wares, a fragment of North French blackware and a small sherd of Ipswich Thetford-type ware (App. B.8.31). In addition, the fills contained 68 fragments (1502g) of animal bone. This feature was cut by east-west Ditch 1174.

Ditches 1154, 1158, 1174 and 1180

3.6.8 A long-lived plot boundary consisting of four closely-spaced linear ditches was uncovered in the northern part of Area 9 that extended across its full extent on an east-west alignment (Plate 5) These ditches possibly truncated feature **610**, however, the previous excavation of Trench 6 had heavily disturbed the archaeology in that part of Area 9. Ditch 1158 (comprising cuts **1158** and **1190**) was reinstated by Ditch 1154 (comprising cuts **1154**, **1160** and **1194**). Approximately 1m to the north lay Ditch 1174 (comprising cuts **1174**, **1184** and **1196**) with Ditch 1180 (comprising cuts **1180** and **1198**) a further 0.5m beyond to the north.

3.6.9 These features measured on average *c.*1m wide and *c.*0.3m deep with U-shaped profiles. Their fills (1155/1161/1195/1205, 1159/1191/1204, 1175/1185/1197 and 1181/1199 respectively) generally consisted of dark brownish or reddish grey silty sand with occasional charcoal and gravel inclusions. Combined, the fills yielded 75 sherds of Late Saxon pottery (mostly Ipswich Thetford-type ware and North French blackware (see App. Fig. B.7.1, no. 6)) and 27 residual sherds of Early and Middle Saxon pottery. The Late Saxon assemblage includes a baluster lamp (App. Fig. B.8.1, no. 4). The presence of a couple of sherds of Early medieval ware and Yarmouth-type ware suggests the use of this plot boundary continued into the 11th century (App. B.8.32). Fill 1159 of Ditch 1158 produced a fragment of a bone mount from a casket (SF 167; App. Fig. B.12.3) and a small, perforated slate whetstone (SF 119; App. Fig. B.5.1). In addition, the fills yielded a combined total of 622 fragments (11220g) of animal bone (see Section 3.6.18).

Gullies

3.6.10 Two short gullies (**1088=1095** and **1164=1166=1172=1180**) were revealed south of Ditch 1154 which measured a maximum of 2.5m long, 0.63m wide and 0.28m deep. These features were filled by dark brownish grey silty sand with occasional gravel inclusions (1089=1096 and 1165=1167=1173=1181); and frequent charcoal in the fill of gully **1088=1095**. Their fills produced only a couple of sherds of Late Saxon and early medieval pottery. Combined, the gully fills yielded 43 fragments (1712g) of animal bone.

Fence line

3.6.11 A vestige of a possible fence line was observed to extend for 2.5m, on an east-west alignment, *c.*0.8m south of Ditch 1154. It comprised five post holes (**1065**, **1067**, **1069**, **1072** and **1074**) which measured between 0.15–0.3m in diameter and 0.1–0.25m deep, with U-shaped profiles. Their dark grey sandy silt fills (1064, 1066, 1068, 1071 and 1073) did not yield any finds.

Pits

3.6.12 A group of five pits (**1097**, **1099**, **1109**, **1117** and **1123**) were uncovered in the south-western part of the excavation of which four were truncated by Period 1.2 features. The pits measured between 0.42–0.71m in diameter and 0.08–0.6m deep with varying profiles. Most of the pits contained mid-dark brownish grey silty sand fills (1098, 1100, 1110, 1118 and 1124). The only notable find excavated from the pits was a bone skate (SF 107) from pit **1097** (App. Fig. B.12.2). Combined, the pits contained 40 fragments (900g) of animal bone.

Period 1.2

Ditches 1040 and 1208

- 3.6.13 The east-west plot boundary in the northern part of Area 9 was cut by a larger north-south aligned Ditch 1040 (comprising cuts **1078**, **1056=1119**, **1121** and **1040=1151**) which measured a maximum of *c.*2m wide and *c.*1m deep with a U-shaped profile. It was filled by mid olive brown or greenish grey sandy silt or silty sand with occasional charcoal and gravel inclusions (1079, 1057-8=1120, 1122 and 1041/1049/1050/1055=1152-3). A possible raised earth bank (1053; not illustrated) up to 0.5m thick was recorded in section on its eastern side. The northern end of this ditch terminated within the excavation area. Beyond a 1.1m-wide gap or entranceway this boundary alignment continued northwards beyond the excavation limit, represented by Ditch 1208 (cut **1208**, filled by 1207, 1209-11, 1217-8, 1225 and 1235; Plate 6) of similar morphology.
- 3.6.14 A large post pit (**1188**), measuring 0.99m in diameter by 0.26m deep, lay directly 3.5m to the east of the gap between Ditch 1040 and Ditch 1208 which contained an *in situ* wooden post (Plate 7). Its fill (1189) produced 26 sherds of Late Saxon pottery and 46 fragments (421g) of animal bone.
- 3.6.15 The fills of this ditch alignment produced a combined total of 159 sherds of mostly Late Saxon Ipswich Thetford-type ware pottery with lesser proportions of St Neots-type ware (see App. Fig. B.8.1, no. 5), North French blackware (see App. Fig. B.8.1, no. 7) and other fabrics. A late 10th/early 11th century radiocarbon date range was achieved for a fragment of hazel from the basal fill (1218) of ditch **1208** (see Table 17). This date supports the composition of the pottery assemblage with the presence of a couple of early medieval sherds suggesting the ditch was open in the 11th century (App. B.8.33). Waterlogged basal fill 1218 contained multiple unmodified roundwood fragments of birch, alder, willow, ash and oak (SF 128) and a textile fragment (SF 122; App. Plate B.15.3), while waterlogged basal fill 1225 also produced wooden stakes/wattling and bark (SFs 127 and 129). Furthermore, fill 1041 yielded a copper alloy folding balance (SF 102; App. Fig. B.3.1) of possible 10th-century date and fill 1211 produced a complete bone needle (SF 121; App. Fig. B.12.3). Combined, the ditch fills yielded 490 fragments (12805g) of animal bone (see Section 3.6.18), seven fragments (177g) of fired clay with wattle impressions and a human mandible bone.

Ditch 1101

- 3.6.16 Approximately 4m west of Ditch 1040 lay the northern end of a parallel ditch (Ditch 1101; comprising cuts **1101**, **1105** and **1107**) which measured *c.*0.6m wide and *c.*0.3m deep with a U-shaped profile. Its fill (1102, 1106 and 1108) consisted of dark brownish grey silty sand and yielded two Late Saxon pottery sherds, a fragmentary bone comb (SF 108; App. Fig. B.12.3) and 38 fragments (1476g) of animal bone. This alignment was later recut by a ditch **1103** which measured 0.6m deep and at least 0.6m wide.

Postholes

- 3.6.17 A total of 11 sub-circular postholes attributed to this phase formed no obvious groupings or wall/fence lines could be discerned. These features probably represent deeper surviving vestiges of post-built structures or fence lines.

- 3.6.18 Two adjacent groups of intercutting postholes (**1111**, **1113**, **1115** and **1125**, **1127**, **1129**) lay between Ditch 1040 and Ditch 1101 that measured up to 0.3m in diameter by 0.1m deep. A bone skate was recovered from the fill (1128) of posthole **1127** (App. Fig. B.12.2).
- 3.6.19 A further five postholes (**1139**, **1142**, **1144**, **1162** and **1202**) lay east of Ditch 1040 which measured between 0.2–0.4m in diameter and 0.13–0.25m deep. Their mid greyish brown sandy silt fills (1131, 1133, 1137/1138, 1143, 1145, 1163 and 1203) yielded only 15g of fired clay and two animal bone fragments.

Pits

- 3.6.20 A total of 18 pits (**1059**, **1061=1091** (Fig. 8, Section 514; Plate 8), **1076**, **1080**, **1082**, **1084**, **1136**, **1141**, **1147**, **1156**, **1168** (Fig. 8, Section 536), **1170** (Fig. 8, Section 536), **1176**, **1178** (Fig. 8, Section 537), **1192**, **1200** and **1226**) were uncovered to the east of Ditch 1040 and Ditch 1208. The pits measured between 0.3–1.1m in diameter and 0.1–0.6m deep with varying profiles. Most of the pits contained single fills of mid-dark brownish grey/reddish grey/greenish grey silty sand or sandy silt with occasional gravel inclusions (1060, 1062-3/1092-4, 1077, 1081/1090, 1083, 1085-7, 1135, 1140, 1148, 1157, 1169, 1171, 1177, 1179, 1193, 1201 and 1227-8) with two of these features (**1061** and **1084**) containing stratified deposits of two and three fills respectively.
- 3.6.21 Notable finds excavated from the pits include a possible lead toy wheel (SF 115) from pit **1147** (App. Fig. B.3.1), a cylindrical lead weight (SF 167) from pit **1082** and a glass vessel (possible palm cup) fragment from pit **1156** (SF 120; App. Fig. B.7.1, no. 1). Sixteen of the pits produced mostly Ipswich Thetford-type ware pottery sherds (see App. Fig. B.8.1, no. 3) along with some North French black wares and a few residual Early and Middle Saxon wares (App. B.8.37). Combined, the pits contained 353 fragments (12128g) of animal bone (see Section 3.6.18). Pit **1147** also contained two fragments (89g) of fired clay with grass or straw impressions.

Summary of artefacts

- 3.6.22 Pottery from the features excavated in Trench 6 and Areas 8 and 9 comprises predominantly Late Anglo-Saxon (80% by sherd count) material with a residual Early (5%) and Middle Anglo-Saxon (10%) element. Most of the Late-Anglo-Saxon pottery (64% by weight) is Thetford-type ware with lesser proportions of St Neots-type ware (8% by weight) and others, including imported Badorf and North French blackware and greyware. There is tentative evidence for the presence of nearby wooden structures in this period. Nine of the fired clay fragments from pit **1147** and ditch **1208** display wattle or plant impressions. The waterlogged fills of ditch **1208** and pits **606** and **1084** contained remains of wooden stakes, planking and wattling. Metalwork recovered from feature fills included a toy wheel, brooch, weight, buckle and mount (Table 2). A textile fragment – possible sack material – also came from the waterlogged fill of ditch **1208**. Other items included two bone skates, a bone comb and a whetstone. In addition, a small quantity of slag was recovered from features to suggest ironworking in the general vicinity. There are also a few intrusive sherds of (mostly early) medieval pottery (5% by sherd count), medieval/post-medieval CBM and glass which are likely to have been

introduced into the consolidating Period 1 feature fills from the overlying Periods 2–3 overburden.

Metalwork items No.	Ironworking slag	No. worked bone items	No. worked stone items	Residual flintwork	No. glass small finds	No. worked wood items	No. textile items	Pottery	Intrusive CBM	Fired clay	Notable finds
13 (5 CuA, 2 Fe & 6 Pb)	2207g	6	1	12	1	81	1	563 sherds (c.8.5kg)	15 frags (1053 g)	37 frags (928g)	Lead toy wheel? (SF 115); Lead disc brooch (SF 20); Lead weights (SFs 21 & 167); CuA buckle (SF22) CuA mounts (SFs 14 & 23); CuA folding balance (SF 102); Glass palm cup frag. (SF 120); Bone skates (SF 107 & cxt.1128); Bone combs (SFs 108 & 160); Bone casket mount frag. (SF 167); Bone needle (SF 121); Whetstone (SF119); Wood frags of post (SF 36), split timbers/planks (SFs 37-40), stakes and wattling (SFs 123-5 & 127-8); Wool sacking frag. (SF 122)

Table 2: Period 1 artefacts inventory

Summary of environmental remains

3.6.23 The animal bone from this phase (2114 fragments, 54.584kg) comprised 49% cattle, 23.5% pig, 17.5% sheep/goat, 4.5% domestic fowl, 2% dog and 1% horse with the remaining 2.5% made up of wild animals. An addition, 276 specimens of oyster and 13 specimens of mussel were recovered (quantified in App. C.4 Table 78). Bulk soil samples from many of the features produced carbonised material largely comprising cereal grains (barley, oat, rye, and free-threshing wheat) in small quantities. Abundant waterlogged material was recovered from several waterlogged deposits within pits and ditches in Area 9. This material included tree/shrub taxa (elder, brambles, hazelnut shell, sloes/dwarf cherries and occasional apple/pear), common arable weeds (cornflower, sheep's sorrel and corncockles) and those species of wetland/damp environments (sedges) and cultivated/wasteland ground (nettle and goosefoots).

3.7 Period 2: medieval (c.AD1066-1530)

Introduction (Fig. 9)

3.7.1 In the western part of the site, pits containing medieval artefacts were recorded in evaluation Trench 7. Overlying these pits, and recorded elsewhere in Test pits 2, A, J, K O and Q was a c.0.5-0.7m build-up of soils containing medieval artefacts (pottery, metalwork, CBM, animal bone, and window glass) to a height of c.2.5-2.6m OD, suggesting the site was open ground in this period. Test Pit 3 recorded a deep truncation of the natural geology (to c.0.7m OD) infilled with medieval deposits; possibly an earlier

iteration of an ornamental pond shown on 17th and 18th century maps immediately south of the site (see Section 1.3.18; Gailey 2015, fig. 5). Full descriptions of deposits excavated during the evaluations can be found in Webster (2016) and Fairbairn (2017). The elevation data has been used to reconstruct the possible topography of this site by the end of the medieval period, given as Fig. 9.

Test Pit 2 (Fig. 15, Section 2)

- 3.7.2 Overlying the natural ground was a *c.*0.2m-thick relict soil (211) to a height of 1.8m OD. It consisted of mid greyish brown silty sand with gravel inclusions and some clay lumps and produced seven sherds of 10–12th century pottery along with 16 fragments of medieval plain tile. It was overlain by a *c.*0.7m-thickness of very dark grey sandy silty clay (210) with inclusions of gravels, charcoal lumps and sand lenses to a height of *c.*2.5m OD. Along with 30 residual Late Saxon sherds, this layer contained 29 sherds of early and high medieval pottery whose composition suggested it was laid down no earlier than the late 13th century (App. B.8.38). Furthermore, the deposit produced 77 fragments of plain tile of medieval and perhaps late medieval date (App. B.9.25). Combined, these layers also contained 84 fragments (340g) of animal bone. A bulk sample was taken of this soil which yielded frequent carbonised cereal grains that include oats, wheat, rye and barley and frequent carbonised legumes: peas and beans (App. C.5.11).

Trench 3 (Fig. 15, Section 16)

- 3.7.3 A series of six layers (successively 314, 315, 302, 313, 303 and 304) dated by pottery, CBM and glass to the medieval period were recorded in section overlying the natural geology between *c.*0.7–2.5m OD. The notably lower elevation of the natural ground in comparison with the rest of the site probably represents significant truncation or possibly a large cut feature, such as a pond (312). These deposits successively consisted of dark greenish brown/light grey/dark greyish brown/mid greenish grey/reddish grey/greyish brown clays, silts and sands with some gravel inclusions. Their upper horizon sloped upwards from *c.*1.8–2.5m OD from north to south. The layers produced a combined total of 12 fragments (665g) of animal bone.

Trench 7 (Fig. 15, Sections 10 and 13)

- 3.7.4 Trench 7 encountered a series of three intercutting pits (751, 753 and 755; 0.34–1.9m in diameter) extending to depths between *c.*1.8–2.1m OD. Their fills (750/752, 754 and 757) generally consisted of light-dark greyish/reddish brown silty sand and yielded medieval pottery sherds, including an unprovenanced glazed jug handle (App. Fig. B.8.1, no. 9). Two overlying layers (756 and 758) of greyish brown silt, which also produced medieval finds, extended to a height of *c.*2.5m OD. A residual Late Saxon cog-wheel type brooch (SF 24) was recovered from layer 758.

Area 10

Test Pits A, J and K (Fig. 15, Sections 573, 559 and 563)

- 3.7.5 Test Pits A, J and K encountered layers (1450, 1453 and 1457 respectively) of dark greyish brown sandy silt with gravel inclusions and occasional charcoal fragments to a height of

c.2.6m OD. These deposits contained a complete possible gaming piece (SF 157) made from red deer antler (App. Fig. B.12.3), seven sherds of residual Saxon pottery, five sherds of early medieval pottery, and 13 fragments (540g) of animal bone. The composition of the early medieval pottery suggested the deposits were laid down no earlier than the mid-11th century (App. B.8.40).

Area 11

Test Pit O (Fig. 15, Section 567)

3.7.6 A cobbled surface (1442) was revealed at a height of c.2.3m OD. It was overlain by a layer (1441) of dark grey sandy clayey silt with occasional gravel inclusions and fragments of CBM to a height of c.2.5m OD. This soil produced a possible small lead seal with an unidentified decoration in relief (SF 152), a fragment of medieval window glass (SF 153; Fig. B.7.1, no. 12), a fragment of relief floor tile and two sherds of late medieval pottery.

Test Pit Q (Fig. 15, Section 569)

3.7.7 A similar layer of soil (1430) to that encountered in Area 10, comprising 0.14m thick dark greyish brown sandy silt with gravel inclusions, was excavated to a height of c.2.55m OD, which produced fragments of a possibly 16th-century redware pipkin (App. Fig. B.8.1, no. 14) and an unprovenanced glazed jug rim (App. Fig. B.8.1, no. 10).

Summary of artefacts

3.7.8 The pottery assemblage comprises mostly (65% by sherd count) residual Late Anglo-Saxon material along with a couple of Mid Saxon sherds. There are equal proportions of early medieval and high medieval material (15% each) with a lesser proportion of late medieval/post-medieval sherds (5%). The CBM assemblage is predominantly medieval and late medieval material with a lesser proportion (22% by count) of intrusive post-medieval fragments probably originating from the Period 3 overburden.

No. coins	No. metalwork items	No. worked bone items	Pottery	CBM	No. glass items	Notable finds and comments
1	6	1	89 sherds (c.1kg)	95 frags (2912g)	2	Residual Late Saxon CuA cog-wheel type brooch (SF 24); Possible small Pb seal (SF 152); Bone gaming piece (SF 157) Window glass frag. painted with floral pattern (SF 153) and colourless frag. which may relate to medieval priory or college.

Table 3: Period 2 artefacts inventory

Summary of environmental remains

3.7.9 The animal bone from this phase (119 fragments, 1.954kg) comprised 37% cattle, 24% pig, 27% sheep/goat, 5% horse, 2% brown hare, 2% domestic fowl and 2% common frog. In addition, 23 specimens of oyster were recovered (quantified in App. C.4 Table 78). Waterlogged seeds are frequent from the evaluation trench samples with hemp

recovered from Trench 3 and probable food plants (plums, cherries, beets/spinach, brassicas (turnips/swede/cabbages), tentative onion, opium poppy, and coriander) in Trench 7.

3.8 Period 3: post-medieval (c.AD1530-1700)

Introduction (Fig. 10)

3.8.1 No post-medieval features were recorded on the site. Only a c.0.1-0.4m build-up of deposits producing artefacts of this period was recorded in the sections of evaluation Test Pit 2, evaluation Trenches 3, 5, 6 and 7 and mitigation Test Pits B, J, K, O and Q, suggesting that much of the site remained open ground/gardens/orchards during this period. Full descriptions of deposits excavated during the evaluations can be found in Webster (2016) and Fairbairn (2017). The elevation data has been used to reconstruct the possible topography of this site by the end of the 17th century, given as Fig. 10. The brook had been infilled around the beginning of the post-medieval period and was no longer a feature on this site.

Test Pit 2 (Fig. 15, Section 2)

3.8.2 Two deposits (207–8), combined measuring up to 0.75m thick, overlay Period 2 layer 210 to a height of c.3.1m OD. These deposits of very dark greyish brown sandy silty clay with occasional gravel and charcoal inclusions were interpreted as cultivated garden soils or possibly accumulations of night soil tipped onto the site. They produced a wealth of finds (nine sherds of pottery, animal and fish bone, human bone fragments, CBM and charred seeds) including pottery and CBM dating from the Anglo-Saxon to post-medieval periods indicative of reworking. The presence of Siegburg and Late Colchester sherds suggests the earliest these deposits were laid down was the 16th century (App. B.8.42). Layer 208 contained one of the largest groups (114 fragments) of medieval and late/post-medieval plain roof tile (App. B.9.26). Both the nature of the soils and the relatively elevated upper horizon of these deposits compared to those across the rest of the site attributed to this period is indicative of middening activity. A bulk soil sample of layer 208 produced carbonised cereal grains that include oats, wheat, rye and barley along with vetches; beans are absent. The bulk sample of overlying soil 207 produced a carbonised assemblage possibly represents the burning of hay that had originated from a damp pasture (App. C.5.12).

Trench 3 (Fig. 15, Section 16)

3.8.3 In Trench 3 to the south-east or Test Pit 1, two layers (305 and 306) overlying Period 2 deposits to a maximum height of c.2.6m OD produced post-medieval pottery including a 16th/17th century base fragment of a Frechen stoneware vessel (from 305). These deposits, with a combined thickness of c.0.5m, consisted of greyish brown sandy silt and greenish grey clayey silt respectively, with rare gravel inclusions.

Trenches 4 and 5: backfilling of the brook (Fig. 15, Section 17)

3.8.4 From a height of 1.56m OD, above the basal Period 0 alluvial deposits of brook 507, a cess-like layer of dark greenish grey clayey silt (519) extended up the profile of the brook

to a height of 1.82m OD. This fill contained a mixed assemblage of pottery (7th-early 16th century in date), CBM and animal bone, suggesting deliberate infilling of the channel. It was overlain by further deposits of cess-like greenish grey clay, silt and sand (509 (=517–8) to a height of c.2m OD. These were capped by a final deposit of greyish brown clayey silt (506) containing 9th–16th century pottery to the top of the brook ‘cut’ (Fairbairn 2017, 9).

3.8.5 The finds from this former watercourse are clearly mixed in nature (Table 4). The pottery from the upper fills of the brook is mostly of late medieval/transitional date (19 sherds; including five sherds of a Dutch-type redware cauldron and 13 sherds of a Late Essex-type ware jug) along with three residual Anglo-Saxon sherds. Two post-medieval roof tiles were also recovered. Iron metalwork from fill 506 included a medieval D-shaped buckle (SF 155) and nine post-medieval nails. Overall, this material suggests a possible final backfilling of the brook around the beginning of the post-medieval period. Several notable metal finds were recovered from this backfill material, all of which were residual, comprising an 8th–11th-century lead tablet or charm with a runic inscription (SF 2; App. Fig. B.2.1) and a 9th-century silver penny (SF 6) of Aethelweard of East Anglia (reigned c.845-854). In addition, four animal bone fragments (205g) were recovered.

No. coins	No. metalwork items	No. stone items	Pottery	CBM	Notable finds and comments
2	11	1 natural amethyst (SF 28)	22 sherds (c.1.5kg)	2 frags	Residual lead tablet with inscription (SF 2); Residual silver coin of Aethelweard (SF 6)

Table 4: Artefacts from Period 3 backfilling of brook

3.8.6 In Trench 5, a sequence of two deposits (510–511) capped the infilled channel of the brook to a height of c.3m OD (Fig. 15, Section 17). Deposit 510 consisted of a 0.22m-thick mid greyish brown sandy silt with rare gravel inclusions, interpreted as a garden soil. It was overlain by dark greyish brown clayey silt (511), between 0.1–0.4m thick which was truncated by a footing for a Period 4.2 wall (512) at a height of c.3.2m OD. Neither of these deposits produced any finds.

3.8.7 Although not accurately recorded due to the presence of contaminated ground, deposits 405–410 (not illustrated) observed overlying the brook in Trench 4 may also be attributed to this period.

Trench 6 (Fig. 8, Section 20)

3.8.8 A succession of three deposits (613–5) lay above a probable truncation level (618) at c.1.4m OD, which cut Period 1 features and deposits. The deposits consisted of mid to dark greenish grey clayey silt with varying amounts of gravel inclusions which measured between 0.2-0.42m thick. No finds were recovered from any of these layers. The post-medieval deposits were themselves truncated by the foundation (619) of a Period 4 wall at a height of c.1.8m OD.

Trench 7 (Fig. 15, Sections 10 and 13)

- 3.8.9 In the southern section of Trench 7, the Period 2 layers were overlain by a *c.*1m-thick sequence of four post-medieval deposits (760–3) of grey and brown clayey silt to a height of *c.*3m OD, where they were truncated (774) by Period 4 floor **738/748**. The lowest of these (760) produced a large sherd of a decorated Tin glazed earthenware vessel (App. Fig. B.8.1, no. 15) and a post-medieval floor tile. Two fragments of architectural stone (SFs 34 and 35) were recovered from layer 763 (App. Fig. B.5.1). The eastern trench section showed a *c.*1.5m-thick series of five similar/equivalent layers (successively 772, 773, 764, 765 and 770) to a height of *c.*2.6m OD, where they were truncated/overlain (774) by Period 4 wall **708**.

Area 10

Test Pits B, J and K (Fig. 15, Sections 559 and 563)

- 3.8.10 Test Pit B revealed a layer (1351; not illustrated) of cess-like, dark greyish green sandy silt with rare gravel inclusions to a height of 2.85m OD. Overlying Period 2 layers in Test Pits J and K, was a *c.*0.15-0.25m thick mid reddish/greyish brown silty sand deposit (1452 and 1445 respectively) with occasional gravel and frequent charcoal inclusions that extended to *c.*2.75-2.8m OD.

Area 11

Test Pit O (Fig. 15, Section 567)

- 3.8.11 A 0.3m-thick deposit of dark brownish grey silty sand (1409) with coal, charcoal and gravel inclusions overlay Period 2 deposits to a height of *c.*2.8m OD, where it was truncated by Period 4 walls **1375** and **1377**. The presence of a sherd of Rhenish stoneware suggests the deposit was laid down from the 16th century at the earliest. It contained one of the largest groups (114 fragments) of medieval and late/post-medieval plain roof tile recovered from the site along with a piece of medieval floor tile (App. B.9.26). This deposit also yielded two pieces of opaque medieval window glass (SF 151). This deposit also produced three human bone fragments.

Test Pit Q (Fig. 15, Section 569)

- 3.8.12 The Period 2 deposits were overlain by a *c.*0.4m-thick series of three layers (successively 1429, 1432 (not illustrated) and 1428) to a height of *c.*2.8m OD. Deposits 1429 and 1432 consisted of dark brownish grey silty sand and sandy silt with frequent charcoal and occasional CBM fragments. The presence of a sherd of Frechen Stoneware in deposit 1429 suggests they were laid down from the 16th century onwards. These were overlain by a thin burnt grey silty sand deposit (1428) with very frequent charcoal inclusions.

Test Pit T

- 3.8.13 At the base of Test Pit T a dark brownish grey silty sand soil (1449) with occasional gravel and charcoal inclusions was excavated. This layer produced pottery sherds, animal bone and a coin (SF 154) of Charles I (r.1629–45) along with 60 fragments of medieval and late/post-medieval plain roof tile (App. B.9.26).

Artefacts from layers not associated with brook backfills

3.8.14 Only three sherds of post-medieval pottery (14% by sherd count) were recovered from Period 3 layers. The vast majority of the pottery assemblage comprises residual Mid–Late Anglo-Saxon (34%) or medieval (52%) material. Along with the architectural stone fragments from Trench 7, layer 763 (SFs 34 and 35), which may have derived from the priory (see Discussion), there was a far greater number of late medieval/post-medieval plain roof tile fragments (and a floor tile) attributed to this period from the Period 3 layers (84% by count; mostly from Test Pit 2 and Test Pit O) with the remainder comprising residual medieval roof and floor tile. The residual medieval window glass (SF 151) fragments and human bone fragments from Test Pit O were also notable finds.

No. coins	No. metalwork	Slag	Pottery	CBM	Architect- ural stone	No. window glass items	Notable finds and comments
1	2	39g	18 sherds (c.0.3k g)	244 frags (c.5kg)	2 frags (30kg)	2	Medieval and late medieval/post-medieval tile, two frags of window glass (SF 151) and architectural limestone (SFs 34 & 35) may relate to medieval priory or college. Fragments of human bone

Table 5: Period 3 artefacts inventory

3.9 Period 4.1: c.18th–19th century malhouses

Introduction

3.9.1 Evaluation Trench 7 unearthed brick walls, floors, cobbled yard surfaces and layers of ash which overlay/truncated Period 3 deposits at a height of c.3m OD which may have been associated with malhouses shown on historical maps of the site produced between c.AD1674–1902. The wider excavation work on the western fringes of the site within the ‘Western Building’ footprint (Area 10) encountered further vestiges of brick wall footings, surfaces, features and deposits at a height of c.3.4m OD. These remains were revealed in plan in those parts of the excavation that extended below c.3.4m OD and by a series of deeper hand dug test pits across the excavation area. A better-preserved part of the malhouses lay in Area 11, where a malt kiln is marked on historical maps. The base of the brick-built kiln furnace was revealed. The remains of a brick-lined well lay to its south along with further vestiges of wall lines in Area 11 at a height of c.3.14m OD.

Western Building footprint (Figs 5)

Trench 7 (partially illustrated in Figs 11a-b; Fig. 15, Sections 10 and 13)

3.9.2 In Trench 7, Period 3 deposits were truncated from a height of c.2.6m OD by: brick walls **708=711, 716, 739** and **743**; brick floors **717** and **719**; ash surface **749**; and cobbled trackway or yard surface **748**.

In situ floors

3.9.3 A 0.12m thick layer of mid yellow mortar and ash formed the base for a stone cobbled surface (**748**), recorded in section at a height of c.3.3m OD (Fig. 15, Section 10). North

of the cobbles were a brick floors **717** and **719** consisting of single layers of dark red unfrosted bricks (Figs 11a-b). Brick samples from floor **717** were of similar length and width to each other, but one was significantly thinner. One medium sandy brick with grog and ferrous inclusions measured 226 x 108 x 43mm and had a diagonal 'skintling' (stacking) impression on one stretcher, which may indicate a date prior to the late 18th century. The other brick was in a medium sandy micaceous fabric with grog inclusions and measured 228 x 112 x 55mm. Both bricks can be dated broadly to the 16th–18th centuries (S. Anderson in Fairbairn 2017, 30). Floor **719** was overlain by a 0.54m thickness of silt and sand (729 and 734) which underlay brick wall **716**.

In situ walls

- 3.9.4 Commencing from a height of 2.6m OD, wall **708=711** consisted of nine courses of unfrosted red brick on a broadly north to south alignment (Fig. 11a-b; Fig. 15, Section 13). A red brick sampled from wall **708** measured 241–246 x 118–120 x 55–56mm, and was in a medium sandy micaceous grogged fabric, similar to many of the roof tiles from this site. Two complete or near-complete 'Dutch' bricks were also recovered from wall **708**. The complete 'Dutch' brick measured 162 x 65 x 36mm. The presence of these types of brick in the wall suggests a 17th century or later date. However, one of the 'Dutch' bricks showed considerable wear on one stretcher, as if it had been used in a floor, perhaps suggesting re-use of bricks in this wall (S. Anderson in Fairbairn 2017, 30).
- 3.9.5 Two smaller walls (single lines of bricks **739** and **743**) that probably represent internal divisions extended east from wall **708** (Fig. 11a-b). To the west of wall **708**, brick wall **716** comprised two courses of red unfrosted brick; each brick measuring 40mm x 10mm.

Deposits

- 3.9.6 In Trench 7, the Period 4.1 walls, floors and surfaces were overlain by a series of layers (720, 731–4 and 744–7, not illustrated) possibly resulting from the demolition of the maltings. Layer 720 was a 0.2m thick band of mid yellow mortar which overlay wall 716. Layers 731–4 were a series of light to dark greyish brown sandy silt deposits between 0.15–0.38m thick to the west of wall **708=711**. East of wall **708** lay a build-up of four alternating deposits (744–7) of mid greyish brown silty sand and yellow sand, between 0.08–0.44m thick.

Areas 10 and 11

Malt kiln walls and furnace (Fig. 12)

- 3.9.7 The c.1.8m-diameter circular base of a brick-built malt kiln furnace (**1388**) was revealed at a height of c.3m OD, constructed of 18th to mid-19th century brick. Its northern wall (**1372**) partly survived to a height of c.3.5m OD, constructed of 18th-century brick laid in an English bond (alternate courses of stretchers and headers). The front (flue) of the kiln furnace faced west. It lay within the south-eastern corner of a rectangular room defined by walls of 19th-century brick which measured 4.2m long by 3m wide. To the south lay wall **1371**, to the east lay walls **1239** and **1399** within foundation trench **1396** (filled by 1397–8), to the north lay wall **1238** and to the west lay wall **1237** in foundation trench **1293** (filled by 1294–5). The various walls and deposits of the kiln house were investigated by Test Pits F, L and M (Plates 9 and 10). Test Pit L revealed a chalk and

mortar floor (1240) at the same height as the malt kiln furnace base at *c.*3m OD. Part of the floor may have been constructed of brick (1379; not illustrated). Near to the kiln furnace base was a layer of charcoal and ash (1402). The room was filled by demolition layers 1385–7 and 1389 (not illustrated). Foundation trench 1396 produced four sherds of an early Rhenish stoneware vessel (App. B.8.48).

- 3.9.8 Approximately 3.5m south-east of the kiln house, at between *c.*3.2–3.5m OD, lay a series of wall foundations (1378, 1433 and 1434) on a broadly north-south/east-west axis laid in an English bond. Test Pit S investigated these walls and determined that they extended down to *c.*3.05m OD (Plate 11). Further wall vestiges (1420, 1439, 1446 and 1447) were excavated south of the kiln house. Wall 1420, laid in English bond and English cross bond (the alternating stretcher course being offset by half a brick), was investigated by Test Pit Q and extended down to a height of *c.*3.1m OD (Fig. 15, Section 569; Plate 12). These walls were variously constructed of 18th–19th-century brick, with the exception of wall 1433, built of 17th–18th century brick (App. B.9, Table 57).

Well and surrounding wall vestiges

- 3.9.9 A 2.5m-diameter circular well (1410) was revealed *c.*2.5m south of the kiln house at a height of *c.*3.5m OD. Its fill (1424) and construction were investigated by Test Pit P (Plate 13). This structure was lined with 18th/19th-century bricks with many laid in courses set in a header bond, which is a particularly strong bond due to the thickness of the wall being one full stretcher in width (App. B.9, Table 58). The well was flanked by the surviving brick foundations of a surrounding, 19th century, superstructure (1411), which possibly delineates the base of a well-house. In addition, between the well and the kiln house lay a brick and tile-lined culvert or drainage channel (1435) extending to the south that contained a layer of silt (1436), this produced a (residual) coin of William III (SF149; 1689–99).

Surfaces

- 3.9.10 Along the north-western margins of the site, Test Pits C and I uncovered successive metallised surfaces of a possible road or external yard. In Test Pit C, metallised surfaces 1311–1314, 1315–6 and cobbles 1317 extended between *c.*3–3.3m OD (Plate 14). To the south, Test Pit I revealed metallised surfaces 1322–5 between *c.*2.95–3.15m OD (Fig. 15, Section 558). South-east of these, Test Pit H also revealed two layers of cobbles (1454 and 1456) and gravel (1455) between *c.*2.74–2.9m OD. In addition, further east Test Pit E also revealed a possible cobbled layer (1308) at *c.*2.95m OD.

Wall foundations

- 3.9.11 At the northern end of Area 10, a group of four foundation walls (1248–50 and 1458) constructed of 17th–18th and 18th–19th century brick (App. B.9, Table 59) along with two adjacent brick-built pillar bases (1246–7) were revealed at a height of *c.*3.5m OD, partly investigated by Test Pit B (Plate 15). Walls 1248 and 1250 were irregular courses of brick and wall 1249 was laid in an English bond. The north-north-east to south-south-west axis of these elements was notably offset from the (later) more extensive Period 4.2 (furniture factory) brick walls to the east and west. Although this structural group appeared to have been almost completely truncated to the south, its alignment continued as pillar base 1270 and possibly walls 1266–7, constructed of 18th–19th

century bricks laid in an English bond, revealed at the same elevation some distance further to the south in Test Pit H. Adjacent Test Pit K revealed that wall **1266** (along with wall **1444**) extended down to a height of 3.05m OD (Fig. 15, Section 563), while Test Pit H recorded wall **1267** and foundation trench cut **1286** (filled by 1279-80). Wall **1266** probably represented the northward continuation of wall **708=711** excavated in Trench 7 (see Section 3.9.4). Wall **1270** was investigated by Trench J and found to be constructed of 17th–19th-century bricks laid in an English bond within a foundation trench (**1336/1337**) which extended down to *c.*3.1m OD (Fig. 15, Section 559), cutting through layer 1335. Approximately 5.2m to the east of walls **1248–50** lay a possible 3m-long survival of malthouse wall (**1243**), constructed of 19th-century brick, at the same elevation. Test Pit A revealed that this wall lay within foundation trench **1274/1275** (Fig. 15, Section 573).

Human skeletal remains

- 3.9.12 Test Pit E also contained a layer (1260) which produced a disarticulated skeletal human cranium (sk.1206) at a height of *c.*3.5m OD.

Deposits

- 3.9.13 The Phase 2 evaluation trenches and excavation test pits investigated several layers at heights of between *c.*3-3.5m OD, interspersed between the wall footings: – deposits which can also probably be attributed to this phase. They are likely to represent levelling/make-up layers alongside yard surfaces and floors associated with the construction and use of the maltings and other buildings during this period (see Fig. 15 and Appendix A).
- 3.9.14 In Test Pit D, deposit 1288 (Fig. 15, Section 560) produced a notable group of artefacts, including nine fragmentary glass vessels dating from the 17th–18th century (App. Fig. B.7.1, nos 2-7 and 9-11), a number of sherds of large stoneware bottles (some with stamped labels for Ipswich merchants), sherds of a Chinese porcelain bowl (App. Fig. B.8.1, no. 16), and three decorated Dutch tobacco pipe bowls, two decorated stems, four mouthpieces dating from the 18th century (App. Fig. B.11.1, nos 1–5) and a coin of William III (SF 134). Surface 1276 in Test Pit A produced four sherds of post-medieval redwares and whitewares (App. B.8.48). Layer 1389 (Test Pit F) yielded sherds of a glazed red earthenware bowl (App. Fig. B.8.1, no. 13) and an 18th-century decorated Dutch tobacco pipe stem (App. Fig. B.11.1, no. 6). Residual items include shards of a Middle Saxon globular glass beaker (App. B.7.1, no. 8) and sherds of a Thetford-type ?spouted pitcher (App. Fig. B.8.1, no. 1).

Test Pit	Deposit
Test Pit A	1276 above truncation line 1224
Test Pit B	1349-50
Test Pit D	1288, 1343-6
Test Pit E	1260, 1307, 1309-10
Test Pit F	1386-7, 1389
Test Pit G	1296-7
Test Pit H	1281-4
Test Pit I	1325

Test Pit	Deposit
Test Pit J	1332-5
Test Pit K	1353, 1360-3
Test Pit L	1364-6, 1368-9
Test Pit M	1394-5, 1397
Test Pit Q	1427-8, 1431
Test Pit S	1440

Table 6: Areas 10 and 11: Period 4.1 deposits inventory

Artefacts

3.9.15 A total of 48 bricks samples were recovered from the surviving wall footings, floors and malt kiln furnace base associated with the Period 4.1 maltings. Approximately 50% of the pottery (by sherd count) from Period 4.1 features dates to the modern period, including fragments of several stoneware bottles (some with stamped labels for Ipswich merchants), with the remaining half of the assemblage being residual material dating from the Mid-Late Anglo-Saxon (6%), medieval (9%) and post-medieval (35%) periods. The Period 4.2 deposits also produced the largest proportion of clay tobacco pipe, some fragments of post-medieval window and vessel glass, a disarticulated human skull and two coins of William III.

No. coins	Metalwork items No.	No. glass items	No. clay tobacco pipe items	Pottery	CBM from demolition layers	In situ bricks recovered from maltings	Notable finds and comments
2	5	82 (c.2.4kg)	79	153 sherds (c.5.6kg)	15 frags (c.1.8kg)	20 x whole bricks and 28 x part bricks	<p>Disarticulated human skull sk.1206 was radiocarbon dated to 780-1050 cal AD which probably relates to a disturbed Late Anglo-Saxon burial ground in the near vicinity.</p> <p><i>In situ</i> brick samples from maltings buildings with those of the surviving kiln furnace base dated to 19th century;</p> <p>Glass onion or mallet bottle (SF 139) from context 1288; 3 imported Dutch pipe bowls and 2 decorated Dutch stems from context 1288; Chinese porcelain bowl and several early British stoneware vessels from context 1288; several later stoneware bottle fragments from context 1389; 1 decorated Dutch pipe stem from context 1389; 2 coins of William III (SFs 134 & 149)</p>

Table 7: Period 4.1 artefacts inventory

3.10 Period 4.2: early 20th-century furniture factory

North-west, Eastern and Southern Building footprints

(Figs 5 and 13a-b)

Introduction

- 3.10.1 The remains of wall footings and surfaces associated with the past use of the site as a furniture factory were excavated in Phase 1 evaluation Test Pit 1 and Phase 2 evaluation Trenches 3, 4 and 5.

Phase 1 evaluation Test Pit 1

- 3.10.2 Test Pit 1 revealed an asphalt cellar floor (**108**) at a height of 1.95m OD (Fig. 13b).

Phase 2 evaluation Trench 3

- 3.10.3 Trench 3 encountered walls **317–20** at a height of *c.*2.9m OD (Fig. 13b).

Phase 2 evaluation Trench 5

- 3.10.4 At a height of *c.*3m OD, the Period 3 deposits were truncated by wall foundation trench **512** and foundation walls **502–5** which extended to a height of 3.8m, and a brick-laid floor (unnumbered)(Fig. 13b).
- 3.10.5 Wall **503** consisted of courses of unfrogged red brick laid in soft white mortar (Fig. 15, Section 17). On the northern side of the trench and perpendicular to wall **503** was wall **505**, which itself was directly overlain by wall **504**. Wall **505** was of the same construction as **503**. Wall **504** comprised unfrogged red bricks, each measuring 180mm x 120mm x 60mm, laid in a bright yellow sand mortar. On the southern side of the trench, lay a further east to west wall (**502**) constructed of red unfrogged brick.
- 3.10.6 Recorded either side of foundation wall **503** (Figure 15, Section 17), the floor's sub-base comprised deposits of light to dark reddish brown/brownish yellow clayey silt or silty sand with frequent CBM and mortar fragments (**508**, **513**, **516**, **524** and **525**).

Western Building footprint (Figs 5 and 13)

Phase 2 evaluation Trenches 6 and 7

- 3.10.7 In Trench 6, Period 3 layer **613** was truncated by a brick footing and a mortar and sand sub-base for a concrete cellar floor (**600**) at a height of *c.*2.1m OD. The rubble cellar fill (**601** and **602**) was recorded to a height of *c.*4.6m OD (not illustrated).
- 3.10.8 In Trench 7, modern drains (**709–10**), walls (**704–7**), a pit (**726**, **725**) and sub-base layers (**728–30** and **767**) for concrete floors (**700** and **766/768**) were probably associated with the furniture factory, which extended to a height of *c.*4.6m OD.

Mitigation work: Areas 10 and 11

- 3.10.9 Area 10 was machine-stripped to *c.*3.41m OD and Area 11 to *c.*3.14m OD, which revealed a large number of brick-built wall footings, associated drainage structures and surfaces (Plates 16 and 17). The wall lines delineated the outlines of parts of the furniture factory buildings shown on early 20th-century maps of the site (see Discussion,

and Fig. 22). These walls were recorded in plan and in places by test pit excavations to confirm their construction and phasing. Brick samples were recovered which date from the 18th–19th century, suggesting construction materials from the former maltings were recycled for use in the furniture factory. These features were interspersed with deposits recorded as foundation/levelling layers or demolition layers, alongside cobbled or gravel surfaces.

3.10.10 The walls and deposits were allocated context numbers within the mitigation excavation areas. However, where they continued eastwards into those parts of the development site subject to monitoring of site works, the walls clearly belonging to this modern phase were mapped in plan but not allocated any further context numbers.

Areas 10 and 11: Period 4.2 brick walls inventory
806, 814, 836 (foundation cut 829/830), 1245=1261, 1253, 1256, 1269 (Fig. 15, Section 559), 1271 (foundation cut 1338/1339), 1272-3, 1287, 1268=1300=1321 (foundation cut 1301=1318/1319=1326/1327 (Fig. 15, Section 558)), 1347-8, 1352, 1374-5, 1377 (Fig. 15, Section 567), 1391, 1400, 1421, 1443

Table 8: Areas 10 and 11: Period 4.2 brick walls inventory

Areas 10 and 11: Period 4.2 drainage structures inventory
1242 (brick drain), 1244 (brick drain), 1251 (brick drain), 1255 (brick drain), 1262 (concrete culvert), 1376 (brick drain)

Table 9: Areas 10 and 11: Period 4.2 drainage structures inventory

Areas 10 and 11: Period 4.2 surfaces inventory
824 (tile), 1241 (tile), 1252 (cobbles), 1254 (gravel), 1257 (brick and concrete), 1258 (brick and concrete), 1264 (concrete), 1265 (brick), 1277 (gravel), 1390 (gravel), 1393 (cement), 1405-7 (brick), 1422 (brick)

Table 10: Areas 10 and 11: Period 4.2 surfaces inventory

Areas 10 and 11: Period 4.2 foundation/levelling layers inventory (not illustrated)
807-11, 815-7, 825, 828, 830, 833-4, 837, 1259, 1278-80, 1285, 1289-95, 1370

Table 11: Areas 10 and 11: Period 4.2 formation/levelling layers inventory

Areas 10 and 11: Period 4.2 demolition layers inventory (not illustrated)
812-3, 818-23, 1320, 1328-9, 1346, 1367, 1401-4, 1423-4, 1448, 1451

Table 12: Areas 10 and 11: Period 4.2 demolition layers inventory

3.10.11 A number of pits were observed truncating Phase 4.1 deposits in test pits excavated across Areas 10 and 11 which may have been associated with the demolition of the malthouses and construction of the furniture factory. Only observed in Test Pit sections, none of these pits are shown on Fig. 13. Pit 1330 in Test Pit J produced sherds of an

unprovenanced late medieval jar that was presumably reworked from earlier deposits (App. Fig. B.8.1, no. 12).

Test Pit	Features	Fills
Test Pit C	Pits 1312 and 1314 (not ill.)	1313 and 1315
Test Pit E	Pits 1303 and 1305 (not ill.)	1304 and 1306
Test Pit G	Pit 1298 (not illustrated)	1299
Test Pit I	Pit 1330 (not illustrated)	1331
Test Pit J	Pit 1340 (Fig. 15, Section 559)	1341
Test Pit K	Pits 1354, 1356 and 1358 (Fig. 15, Section 563)	1355, 1357 and 1359
Test Pit Q	Pit 1425 (Fig. 15, Section 569)	1426
Areas 10 and 11	Pits 826 and 831 (not ill.)	827/832 and 835

Table 13: Areas 10 and 11: Period 4.2 features

Southern Building footprint (Fig. 5)

Phase 1 evaluation Test Pit 2

- 3.10.12 To the east of Area 11 lay a cellared building of the furniture factory which significantly truncated the site and was investigated by Phase 1 evaluation Test Pit 2. Five modern layers (not illustrated) were recorded between c.3.1-4m OD, to the level of the former printworks car park. Overlying Period 3 soils, deposit 209 was a 0.2m-thick layer of mid brownish yellow sandy silt with gravel and charcoal inclusions. This was overlain by two c.0.3m thick layers (205-6) of very dark brown sandy silty clay and clayey sand with occasional gravel and charcoal inclusions. Layer 206 produced two fragments of human rib and vertebrae bone. Above these layers lay a hardcore sub-base (202) of the printworks car park tarmac surface (201).

Phase 2 evaluation Trench 3

- 3.10.13 The Period 3 deposits were overlain by a succession of four layers (307-10) from a height of c.2.6-3m OD. Above a layer of dark reddish brown clayey sand (307), deposits 308-10 consisted of light to mid greyish brown clayey silt with rare gravel inclusions. Deposits 309 and 310 were cut by four wall foundations 311 and 317-9 to a height of c.3m OD, where it was itself truncated by rubble (301) resulting from the demolition of the former printworks (see below).

Artefacts

- 3.10.14 A total of 42 bricks samples were recovered from the surviving wall footings associated with the Period 4.2 furniture factory, some of which may have been re-used from the earlier maltings. Twenty pottery sherds (57% by count) date from the 19th-20th century, with the remainder of the pottery assemblage comprising residual items.

Other notable items from Period 4.2 demolition layers included 17 pieces are bottle glass. Deposit 1401 produced a sherd of a probable late-17th and early 18th century onion bottle. The remaining bottle glass was mostly green and undiagnostic in form. Most of the clay tobacco pipe assemblage consisted of undiagnostic stems or

fragmentary bowls, but also contained the earliest (Oswald Type 5, 1640–1660) and latest (mid-19th century) pipes in the assemblage.

No. coins	Metalwork items No.	No. glass items	No. clay tobacco pipe items	Pottery	Residual CBM from demolition layers	In situ bricks from maltings	Notable finds and comments
5	5	18 (c.0.6kg)	38	37 sherds (c.1.7kg)	42 frags (23kg)	15 x whole bricks and 27 x part bricks	<i>In situ</i> brick samples from furniture factory

Table 14: Period 4.2 artefacts inventory

3.11 Period 4.3: late 20th-century printworks

Truncation (Fig. 14)

- 3.11.1 Significant truncation resulting from the former printworks, which extended to depths in excess of c.2m below ground level, was mapped across the western, eastern and southern parts of the site.
- 3.11.2 The southern truncation was recorded by Phase 1 evaluation Test Pit 1 and Phase 2 evaluation Trenches 3 and 4. Test Pit 1 encountered the rubble backfill (102–107) of a cellar which extended down to its brick floor (108) at a height of c.2m OD. Trench 3 revealed a layer of rubble (301) resulting from the demolition of the printworks. The rubble along with a surviving layer of concrete was recorded in section to a height of 4.1m OD (Fig. 15, Section 16). A brick wall (411) and a brick floor (412) were observed in contaminated Trench 4 (not shown in plan). Three concrete drainage channels (1381-3) were recorded in Area 11 which fed drain 1376 (not illustrated).
- 3.11.3 A total of four bricks were recovered from contexts associated with the former printworks for comparison with the brick samples taken from the 19th-century maltings buildings (Period 4.1) and early 20th-century furniture factory (Period 4.2) remains.

3.13 Finds summary

Introduction

3.13.1 The test pits, trenches and excavations produced a range of artefactual materials dating from the Romano-British to modern periods (Table 15). The Romano-British finds comprised a Roman coin and roof tile fragment. The wide variety of Anglo-Saxon material recovered comprised a penny of Aethelweard (c.AD 880-922), metalwork (including a votive lead tablet or charm and miniature lead wheel, brooches and small folding balance), slag, whetstone, glass palm cup fragment, pottery, worked bone objects (skates, combs, needle and casket mount) and a textile fragment. Early and Middle Anglo-Saxon material (votive objects, palm cup and Early-Middle Saxon pottery) was recovered as residual items from Late Saxon or later contexts. A smaller range of medieval finds included metalwork (including a couple of buckles, strap end and spur), possibly the two pieces of architectural limestone, three pieces of painted window glass, roof and floor tile and pottery (including some late medieval Dutch redwares). The post-medieval to modern deposits produced a larger group of finds comprising coins, a jetton, metalwork, glass vessels (bottles, window fragments, phials, and drinking vessels), pottery vessels (including Dutch and Rhenish wares), clay tobacco pipe (including Dutch pipes) and quantities of brick and tile.

Material	Object Name	Sum of weight in kg/No. of items	Appendix/quantification
Metal	Coins	11 coins and 1 jetton	B.1
	Lead tablet	1 item	B.2
	Metalwork	65 items (26 CuA, 19 Fe, 19 Pb, 1 pewter)	B.3
Slag	Ironworking debris	2.3kg/17 fragments	B.4
Stone	Architectural fragments	29kg/ 2 pieces	B.5
	Whetstone and unworked natural amethyst	2 items	
Flint	Flintwork	16 items	B.6
Glass	Window and vessel glass	2.5kg/120 shards	B.7
Ceramic	Vessel/pottery	20kg/930 sherds	B.8
	Ceramic Building Material (and mortar)	223kg/530 fragments	B.9
	Fired clay	0.9kg/37 fragments	B.10
	Tobacco pipe	0.7kg/121 pieces	B.11
Organic	Worked bone	7 items	B.12
	Worked wood	82 items	B.13
	Textile	1 item	B.14

Table 15: Finds quantification

Coins by Denis Sami (App. B.1)

3.13.2 The excavations produced an assemblage of 11 coins and one jetton. Most of the coins came from post-medieval to modern contexts. The earliest identified coin (SF 135) is a copper-alloy sestertius of Trajan minted between AD103-111. A silver penny (SF 6) of Aethelweard (c. 880-922) minted by moneyer Twicga recovered from brook **507** is a rare

issue, possibly minted in Ipswich. The remaining post-medieval/modern coins are heavily worn indicating they were part of an intense exchange activity. The Rose/orb jetton (SF 155) dating to the period between 1586 to 1635 is a well-known type. The Aethelweard penny – together with the Period 1 small folding balance (SF 102, see App. B.3) – indicates a level of trading activity taking place in the area during the Late Anglo-Saxon period. It is possible a change in land use in the medieval period around Lower Brook Street may explain the lack of medieval coinage from this site.

Lead tablet by Martin Findell (App. B.2)

3.13.3 The tablet is a flat, roughly rectangular piece of lead, approximately 20mm x 15mm in size, with runes incised on one side. The characters are consistent in height and evenly space (approx. 10mm) and were most likely cut with a fairly sharp tool such as the tip of a small knife. Seven characters are visible, most of them quite clearly legible with the naked eye which can be read with confidence as Old English “dēad is dw[“, translated as “The dwarf is dead”. The inscription is probably part of a charm to protect against or cure illness and is a valuable addition to the corpus of similar objects with runic inscriptions, found in Norfolk, Cambridge and Lincolnshire.

Metalwork by Denis Sami (App. B.3)

3.13.4 The metalwork assemblage consists of 65 artefacts recovered from Period 1–4 features and topsoil but mostly from deposits within brook 507. The bulk of the assemblage dates to the medieval and post-medieval periods with a few artefacts of Late Anglo-Saxon/Saxon-Norman date. Dress accessories and fittings represent the bulk of the assemblage followed by household equipment. Notable copper-alloy Late Anglo-Saxon items include a Cog-wheel type brooch (SF 24), pin from a further brooch (SF 140) and a small folding balance (SF 102). An iron pintle with strap (SF 29) is also possibly from a Late Anglo-Saxon wooden window shutter. Lead items were also recovered from Late Anglo-Saxon contexts, including brooch (SF 20), a cylindrical weight (SF 21) and a miniature – possibly votive – cartwheel (SF 115). Only a couple of buckles, the strap end and spur were from medieval contexts. Post-medieval and modern items include three incomplete pins with small globular heads (SFs 103, 148 and 163), a thimble (SF 5), spur (SF 4), buckle (SF 162) and firearm shot (SF 12). The general lack of medieval metalwork could be explained with a change in the use of the area to a less densely occupied space. Activity appears to have resurged from the post-medieval period onwards.

Slag by Rebecca Sillwood (App. B.4)

3.13.5 Archaeological works produced an assemblage of 17 fragments (2.3kg) of metalworking waste. The slag was almost exclusively found as waste, opportunely deposited in Late Anglo-Saxon features. Most of the slag is undiagnostic and broadly related to ironworking. Five pieces identified as tap slag are associated with smelting and one piece of hearth lining is probably associated with smithing. The assemblage is small and, therefore, not evidence for extensive ironworking activity on this site but rather evidence of it in the general vicinity.

Stone by Ruth Shaffrey and Carole Fletcher (App. B.5)

- 3.13.6 Worked stone comprises an almost complete perforated slate whetstone (SF 119) from a Late Anglo-Saxon ditch and two pieces of architectural limestone (SFs 34 and 35), and an unworked amethyst quartz crystal (SF 28) from post-medieval deposits. One of the limestone pieces is a moulding which may have held a glazing bar for a window. The second limestone piece has been dressed on five sides to possibly form a wedge-shaped key stone for use above a window or door. These items are of either late medieval or early post-medieval origin and are more secular than ecclesiastical in character.

Flint by Rona Booth (App. B.6)

- 3.13.7 A small assemblage of 16 residual struck flints was recovered almost exclusively from Late Anglo-Saxon features in Area 9. Much of the assemblage is of Late Mesolithic/Early to Middle Neolithic origin and includes a serrated blade and two retouched flakes. Although residual, this assemblage demonstrates an active earlier prehistoric presence at this site on the River Orwell.

Glass by Rebecca Sillwood (App. B.7)

- 3.13.8 The excavations produced 120 fragments (2.5kg) of glass. The most frequent form of glass found was bottle glass, followed by undefined vessel glass and window glass. The assemblage includes two pieces of Middle Saxon vessel, three pieces of medieval painted window glass, while the rest of the assemblage is post-medieval, dating from the 17th–20th century. Part of the rim of a palm cup of Middle Saxon date was found as a residual item in a Late Anglo-Saxon pit. Palm cups can often be found in pairs within burials, and it must be noted that a possible early minster was located on the site of St Peter's Church, some 75m south-west of the site. Medieval soil layers produced two fragments of possibly early 16th-century window glass (one was painted with a floral pattern) which may have been associated with the Tudor Cardinal's College. Two pieces of opaque medieval window glass were recovered as residual items from a post-medieval soil which may relate to the Augustinian priory of SS Peter and Paul. Eighty-two pieces of glass (62 pieces from layer 1288) – including a residual Middle Saxon beaker fragment – came from 18th-19th century contexts. A total of 22 fragments belong to a single late 17th to early 18th century onion or mallet bottle. Other fragments belong to bottles, pharmaceutical phials/flasks and drinking vessels.

Pottery by Sue Anderson (App. B.8)

- 3.13.9 The assemblage comprises 930 sherds (20kg) of pottery. Twenty-eight Early Saxon and 65 Middle Saxon sherds were mostly found as residual items in Late Anglo-Saxon features in Area 9. Predominantly from the Late Anglo-Saxon features in Area 9, Thetford-type wares were the most frequent find with 498 sherds representing up to 486 vessels, found along with a few fragments of St Neots-type and other wares. The Late Saxon assemblage includes a few imported North French blackware/greyware and Badorf Ware sherds. Sherds of early and high medieval date were not common in this assemblage but included imported Andenne ware, Rhenish proto-stoneware and Pingsdorf ware. Late medieval pottery was also infrequent, but included local and Essex-type wares, as well as some Dutch redwares. Post-medieval pottery included several

local redwares and English tin-glazed earthenwares. Imported wares from this period comprised Dutch/German whitewares and Frechen stonewares. The modern group was dominated by sherds of large stoneware bottles, some with stamped labels for Ipswich merchants, and two with maker's stamps (Price, Bristol). Overall, the composition of the largest group of pottery relating to the Late Anglo-Saxon period suggests an 11th-century date for this activity. However, the presence of North French wares suggests activity on this site increased from the (mid?) 9th century onwards. The low quantities of medieval, late medieval and early post-medieval pottery are typical of Ipswich and may reflect the degree of later truncation.

Ceramic building material by Sue Anderson (App. B.9)

- 3.13.10 A total of 530 fragments of CBM (223kg) was collected from the site. There are 75 fragments of probable or possible medieval roof tile and two pieces of floor tile. Most of this material was either from contemporary contexts or was redeposited in post-medieval layers. Most tiles are likely to pre-date the construction of the Cardinal's College and perhaps relate to the medieval priory. A total of 209 fragments of post-medieval roof tile was collected which was redeposited in buried soils and other layers. The small quantity of malting tile from the site is perhaps surprising, given the use of the site as a maltings, but the group included several different sizes and types of tiles which may reflect replacement of the malting tile floor, or addition of extra kilns, over several decades. Most of the material was samples of brick from wall foundations and other structures. The post-medieval bricks date to the 17th/18th–19th centuries. The assemblage included five 17th-century 'Dutch' bricks reused in an early 20th-century wall excavated in Trench 7. Four fragments of three floor bricks and two pieces of quarry floor tiles were also collected. The majority were in white-firing gault clays typical of the 18th/19th centuries. Lastly, analysis of the brick assemblage indicates some of the maltings complex buildings continued in use within the furniture factory.

Fired clay by Sue Anderson (App. B.10)

- 3.13.11 There were 37 fragments (928g) of fired clay, most of which were recovered from the excavation areas and particularly Period 1 fills of pit **1147** (1148) and ditch **1208** (1210) in Area 9. A few pieces displayed possible withy impressions, which may be daub, although structures such as oven domes were also constructed using a basket-weave technique, so the fragments need not relate to buildings.

Clay tobacco pipe by Rebecca Sillwood (App. B.11)

- 3.13.12 The excavations produced 121 pieces (0.7kg) of clay tobacco pipe which was only recovered from Period 4.1 and 4.2 deposits, relating to activity dating to between the 18th–20th centuries. Three notable marked 18th-century Dutch pipe bowls were recovered from a single 18th–19th century context (layer 1288), along with two decorative pipe stems which may be associated and are also of Dutch origin. Another decorative pipe stem is also Dutch, showing further evidence for trade with the Netherlands. Only one other pipe bowl was marked with a maker, and this was a local example. The remaining pieces were plain and unmarked and dated mainly to the early

to mid-17th century, with some outliers. The earliest pipe recorded from this site was from 1640-1660 and the latest was mid-19th century.

Worked bone by Ian Riddler (App. B.12)

- 3.13.13 Seven worked bone items were recovered from Late Anglo-Saxon deposits in Area 9. These items comprised two fragments of combs (SFs 108 and 160), two complete skates (SFs 102 and cxt.1128), a needle (SF 121), a possible gaming piece (SF 157) and a fragment of casket mount (SF 167). As one of the largest collections in Europe, combs in Ipswich have been recovered from early 9th to 12th–13th-century contexts. Furthermore, the form of the teeth segments of this comb indicate that it was made by a Scandinavian comb maker who was active in Ipswich at this time, or by an Ipswich comb maker well aware of how Scandinavians made their combs. One of the bone skates (SF 107) was trimmed from a cattle metacarpus and the second (1128) was fashioned from a horse metatarsus. Over 30 skates are known from Ipswich. The needle is one of the most common forms to be found in Late Saxon and medieval contexts in Ipswich. The possible gaming piece was fashioned from a red deer antler tine and could have functioned as a pawn in the game of chess, or as a king piece in the game of *taefl*. Cut from rib bone, the casket mount fragment is decorated with a comparatively rare decorative design of bands of diagonal saw-incised lines, with a parallel known from York.

Worked wood by Hannah Pighills (App. B.13)

- 3.13.14 A total of 82 worked wood items (speciated to oak, ash, alder and willow) were recovered from the site. Most were recovered from waterlogged deposits in Trench 6/Area 9, which created the anaerobic conditions necessary for organic preservation. Eighty of the items were recovered from Late Anglo-Saxon features, whilst one item was recovered from a medieval feature, and one item came from a feature associated with the c.18th–19th century malshouses. The wood had clearly been dumped, along with the other finds materials, into open features. Although the Late Anglo-Saxon assemblage included fragments of a plank and two posts, this is only limited evidence for any nearby contemporary structures.

Textile by Penelope Walton Rogers (App. B.14)

- 3.13.15 Fragments of a poorly preserved textile (SF 122) were recovered from the waterlogged basal fill of Late Anglo-Saxon ditch **1208** in Area 9. They represent the selvedge (side border) of a particularly coarse textile, which has seen extensive wear, to judge from the slight matting of both faces. Analysis of the fibres indicate that the raw material was an animal coat fibre, probably low-grade wool. There was no evidence for pigmentation, which suggests that the fibre was originally white. The coarse quality of the textile and the fibre it is made from are typical of products derived from quayside, warehouse and industrial sites, with parallel examples found at Anglo-Scandinavian Coppergate, York.

3.14 Environmental summary

Introduction

3.14.1 The test pits, trenches and excavations produced a range of ecofactual materials dating from the Late Anglo-Saxon to modern periods (Table 16). A small number of human bone fragments were excavated from Late Anglo-Saxon, post-medieval and modern contexts. This assemblage included a disarticulated skull (sk.1206) found in a 19th-century deposit with a radiocarbon dated centred on the 10th century (900–1020 cal AD, 68.3% probability). Most of the animal bone (primarily cattle, pig and sheep/goat), fish bone and marine mollusca (primarily oyster) assemblages were recovered from Late Anglo-Saxon contexts with lesser quantities from medieval, post-medieval and modern deposits. The deeper, waterlogged Anglo-Saxon deposits produced some plant remains of trees/shrubs, weeds, etc along with small quantities of carbonised/charred cereal grains (barley, oat, rye and free-threshing wheat).

Material	Object Name	Sum of weight in kg/No. of items	Appendix/quantification
Organic	Human Skeletal Remains	13 fragments	C.1
	Animal bone	62kg/2,610 fragments	C.2
	Fish bone	894 fragments	C.3
	Shell	5kg/407 fragments	C.4
	Environmental bulk soil samples	75 samples (32 from evaluations and 43 from excavation)	C.5
	Radiocarbon dating samples	1 human bone sample and 1 waterlogged plant sample	C.6

Table 16: Environmental and osteological quantification

Human bone by Natasha Dodwell (App. C.1)

3.14.2 Thirteen fragments of disarticulated human bone were recovered mostly from Period 3 and Period 4 deposits at the site. A cranium fragment recovered from Period 4 demolition layer 1260 returned a radiocarbon date of 780–1050 cal AD (95.4% probability). The date suggests that the bones probably derive from a disturbed Late Anglo-Saxon burial ground in the vicinity.

Faunal remains by Joshua White (App. C.2)

3.14.3 A total of 2,610 fragments (62kg) of animal bone was recovered from site. Of this assemblage, 2,223 fragments (55.5kg) were recovered from features and deposits dating to the Late Anglo-Saxon (Areas 8 and 9) and medieval periods. The assemblage is dominated by cattle (49%), with pigs (24%) and sheep/goat (17%) also present in large numbers. Equid bones are rare, with dog remains conversely well represented. Wild mammals are poorly represented, although small counts of red deer, brown hare and house mouse are present. Domestic birds are present in moderate numbers (dominated by chickens with some geese), with counts of wild bird species relatively low.

Fish bone remains by Rebecca Nicholson (App. C.3)

- 3.14.4 An assemblage of 894 potentially identifiable fragments of fish bone were recovered from the site. Commonly identified taxa include herring, eel, small flatfishes, garfish, mackerel, small gadid including whiting and cod. As is often the case in later Anglo-Saxon and medieval assemblages, herring and eel were clearly staple foodstuffs.

Marine mollusca by Joshua White (App. C.4)

- 3.14.5 A total of 407 shells or shell fragments (5kg) were recovered from site. With 71% of the shells from Late Anglo-Saxon features and deposits, the assemblage comprises exclusively marine species and is dominated by the European flat oyster, with lower counts of blue mussel and common whelk. Shellfish was clearly occasionally consumed at, or in the vicinity of, the site during this period.

Environmental bulk samples by Martha Craven (App. C.5)

- 3.14.6 A total of 43 bulk samples were taken from the site. These samples were taken from a variety of Late Anglo-Saxon features situated within Area 9. Cereal grains favoured within the Anglo-Saxon period were present in small quantities across many of the features, consisting primarily of barley, oat, rye and free-threshing wheat. It is likely that these grains are a background scatter of refuse from the surrounding area and might suggest that this area was not a focus of domestic activity. Most of the recovered waterlogged plant material is composed of shrub and tree species such as hazelnuts, blackberries and sloes. It is likely that the town's inhabitants may have gathered such abundant wild resources to supplement their diet. The recovery of apple/pear seeds within a ditch may even suggest that this area was utilised as an orchard. The presence of wetland sedges and rushes in many of the samples is not surprising given the proximity of the town to the Orwell Estuary. This material may have been utilised for flooring and thatching material; a common practice in this period.

Radiocarbon dating (App. C.6)

3.14.7 Two samples of organic remains were selected for radiocarbon dating (Table 17).

Lab ID	Area	Period	Context description	Material dated	$\delta^{13}\text{C}$ (‰)	Conventional Radiocarbon Age (BP)	Calibrated radiocarbon date
SUERC-103221 GU59965	10 (Test Pit E)	4.1	Sk.1206 in demolition layer 1260	human bone (skull)	-19.2	1155 ± 28	776-1046 cal AD (95.4% probability)
							898-1020 cal AD (68.3% probability)
SUERC-104114 GU60350	9	1	Fill 1218 ditch 1208	Sample 548: wpr: <i>Corylus avellana</i> (common hazel)	-24.8	1048 ± 26	899-1033 cal AD (95.4% probability)
							973-1033 cal AD (88.0% probability)
							992-1024 cal AD (68.3% probability)

Table 17: Radiocarbon dating results

4 DISCUSSION

4.1 Introduction and research questions

- 4.1.1 Significantly, the course of the Anglo-Saxon and medieval *Broc* was determined to traverse the site west of Lower Brook Street, beneath which it was later diverted within a conduit (RQ 3). The recovery of a residual item from pagan Middle Anglo-Saxon *Gipeswic*, the rune-inscribed lead tablet or charm, provides an interesting and rarely found insight into belief, culture and writing practices during this period (RQ 5).
- 4.1.2 The group of late 10th–11th-century archaeological features and associated finds excavated at depth within evaluation Trench 6 and in Areas 8 and 9, contributes to ongoing research into the evolving urban environment of Late Anglo-Saxon *Gipeswic* (see Section 2.2.2, RQ 1). However, only a small quantity of associated finds (other than pottery) was recovered, comprising residual ironworking slag, a folding balance and coin of Aethelweard means that it is not possible to draw any meaningful conclusions regarding the town's industry, economy and trade during the Late Saxon period (RQs 1 & 4).
- 4.1.3 Despite the wide coverage of the site provided by evaluation trenches and the excavation areas, these investigations have demonstrated the site had a low potential to inform aspects of the medieval religious establishments on this site (priory and college) other than a build-up of demolition associated with their destruction (RQ 2). Analysis has demonstrated that the site largely lay within open ground (presumably gardens or orchards) during the medieval period, with the only evidence possibly related to the known religious establishments (priory and college) being a build-up of demolition material associated with their destruction (RQ 2).
- 4.1.4 The succeeding post-medieval period appears to have witnessed the gradual build-up of dumped deposits within an open environment across the site (presumably gardens and orchards) which resulted in a rich mix of residual medieval and post-medieval materials for study. The assemblages of pottery, glass and tobacco pipe shed some light on the material culture of the gentry in this post-dissolution setting (RQ 6).
- 4.1.5 Representing a significant step change in the land-use of the site, Ogilby's map of Ipswich shows the western part of site was possibly occupied by maltings as early as 1674. Later historical maps show the evolution of the maltings over the next c.250 years to the early 1900s, when the site was converted to a furniture factory. The discovery of a brick-built malt kiln furnace is an important contribution to the study of this industry in Ipswich (RQ 7). The excavations and monitoring stages of work also uncovered an extensive network of 20th-century wall foundations relating to the former use of the site as a furniture factory and printing press.

4.2 Late 10th–11th century urban remains

Residual remains of Middle Saxon Gipeswic

4.2.1 Perhaps unsurprisingly, there was a substantial component of residual Middle Anglo-Saxon material from the Late Anglo-Saxon feature fills. Dense groups of Middle Saxon pits were found during excavation work at Nos 15-17 Lower Brook Street (IPS 365; UAD/ADS ref.: IAS 5502) and Turret Lane School (IPS 384; UAD/ADS ref.: IAS 4302), both located *c.*40m north of the site. The materials excavated at the current site included a small runic-inscribed lead tablet – probably a charm – excavated from the brook which provides an interesting insight into belief during the transition from pagan to Christian East Anglia (App. Fig. B.2.5). The runes appear to represent an Old English charm against illness, translated as “The dwarf is dead”. A further example of Old English runes from Ipswich comprised an inscribed belt buckle found during excavations at Stoke Quay (Brown *et al.* 2020, 199-202, figs 5.7–8). The artefactual and stratigraphic evidence from the brook (see below) appears to confirm the long-held view that the brook was an open watercourse throughout the Anglo-Saxon and medieval periods within which artefacts from the urban environment accumulated.

Late Saxon Gipeswic

4.2.2 By the 10th century, the site lay within the town of *Gipeswic* which had developed from its late 6th or 7th century origins to become one of the main trading centres or *emporia* of East Anglia in the 8th century, during the Middle Anglo-Saxon period (Brown *et al.* 2020, xxi). *Gipeswic* mainly extended along the north bank of the tidal reaches of the River Orwell, north of Stoke Bridge (Fig. 16a). The highwater mark of the tidal river lay closer to site than the present day, along present-day College Street and Key Street, *c.*100m south of site (Heard 2014, 7; see Figs 2a-b). Along this marginal zone, previous excavations at Bridge Street, Star Lane/College Street, Cranfield’s Mill, Neptune Quay and other sites have unearthed evidence for Anglo-Saxon and medieval land-reclamation, dumping and revetments (Boulter 2001, 80; Gill 2004, 1; Heard 2014, 9-11, 53). Many previous excavations in the surrounding area, notably St Peter’s Street (IPS 215), Buttermarket (IPS 228), 15-17 Tacket Street (IPS 323), Turret Lane School (IPS 384), Foundation Street and Former School Street (IPS 355), Nos 15-17 Lower Brook Street (IPS 365), Lower Brook Street/Foundation Street (IPS 733), Cranfield’s car park (IPS 745) and No. 2 Bridge Street (IPS 378), are however, limited to Site Archive Summaries on the Ipswich Urban Archaeology Database (UAD) and/or Archaeology Data Service (ADS). This scarcity of analysis reporting is compounded by two recent excavations in the vicinity, at Western Triangle (IPS 584) and Eastern Triangle (IPS 605), having only reached assessment stage (see Gazetteer of excavation event numbers, Appendix E, Table 88, for locations shown on Fig. 4e).

4.2.3 In terms of the town’s topography, tributary streams are known to have traversed the town from north to south to meet the river (Fig. 16a). Present day Upper and Lower Brook Street follow the former course of a brook and, further to the east, Lower Orwell Street follows the former course of the Lower Wash. The Lower Wash was incorporated into the late 9th/early 10th-century Danish town’s defensive ditch and bank (Heard

2014, 8). Both the brook and Lower Wash were diverted into underground conduits beneath Lower Brook Street in the 17th century (Allen 2001, 47).

Evidence of settlement and boundaries

- 4.2.4 It was hoped that, due to the site's location within the Anglo-Saxon town, it would yield remains that would contribute to ongoing research into urbanisation. The evaluation phases of work between 2016–17 demonstrated that Anglo-Saxon features and deposits lay beneath the site between heights of *c.*1.7–2m OD and were buried by *c.*2m of medieval, post-medieval and modern deposits up to modern ground level at *c.*3.9m OD. However, only Area 9 was excavated to a depth where the Anglo-Saxon level was impacted by the formation level of the development's 'North-west Building'. This excavation revealed a dense group of features – ditches, pits and a few postholes – typical of an urban environment. The associated layer of soil or 'occupation layer' (1075, etc) was also indicative of intensive activity.
- 4.2.5 The set of four, east–west parallel ditches at the northern end of Area 9 (Period 1.1 Ditches 1154, 1158, 1174 and 1180) probably represents the successive reinstatement of a late 10th to early 11th-century boundary ditch alignment (*c.*1m wide by *c.*0.3m deep) separating two parcels of land. A possible fence line lay alongside the southernmost ditch. Regarding the presence of buildings, no definite wall-lines were discerned, and building-related finds only comprising a few pieces of possible wall daub and an iron pintles, possibly from a window shutter. It can be speculated the reinstated boundary and associated scatter of discrete features formed part of one or two burgrave backplots or yards, set back from a built-up street frontage to the west, with the brook perhaps forming the boundary to the east. However, Late Anglo-Saxon (or Anglo-Scandinavian) period burgrave plots appear to have typically measured in the order of 3–5m in width and could measure tens of metres in length (*e.g.* Coppergate, York (Blair 2018, 340 fig. 124; Hall 1994, fig. 41); Fishergate, Norwich (Adams and Clarke *forth.*)). The >10m width of the parcel of land south of this boundary, which extended beyond the southern limit of Area 9, is at odds with these examples. It is notable this boundary alignment closely followed the speculated northern limit of the medieval Augustinian priory (Fig. 4b). Therefore, it is perhaps more likely this boundary represents the northern limit of a larger parcel of land, possibly associated the late 10th to early 11th-century extent of the precinct of nearby St Peter's Church, whose medieval limit is delineated passing through the site on this approximate alignment on the HER in Fig. 4b (IPS 839). Although not a conclusive observation due to the limited nature of this excavation, this may be a significant discovery in the context of future excavation and research in this part of Ipswich as St Peter's Church has been thought to possibly have been an early minster, predating the 12th-century Augustinian priory (see Section 1.3.6).
- 4.2.6 There was evidently a later reorganisation of land ownership on this site when the earlier, east–west boundary ditch alignment was replaced by a *c.*2m wide by *c.*1m deep north–south aligned boundary ditch (Period 1.2 Ditches 1040 and 1208) which evidently continued further north. The radiocarbon date (900–1030 cal AD, 95.4% probability) obtained for the waterlogged basal fill of Ditch 1208, suggests this reorganisation took place in the early 11th century, prior to the Norman Conquest. It is conceivable that the *in situ* oak post in pit **1188** marked the gap/entrance in the Period 1.2 boundary which

it lay opposite. Late Saxon boundary ditches were also recorded during excavation work at Nos 15–17 Lower Brook Street (IPS 365; UAD/ADS ref.: IAS 5502), while later Saxon structural remains were found at Lower Brook Street/Foundation Street (IPS 733; UAD/ADS ref.: IAS 5505).

Chronology, economy and daily life

- 4.2.7 Overall, the pottery recovered from this group of features suggests they belong to a single, intense period of activity during the late 10th– 11th-century. This interpretation is supported by a radiocarbon date achieved for a key group of pottery of 970-1030 cal AD (88% probability). A chronological insight was also provided by the recovery of a worked bone comb (SF 160) of a size which did not occur before *c.*AD 950 (App. B.12.2).
- 4.2.8 The various finds assemblages from Area 9 (and evaluation Trench 6) build a picture of the daily life of the inhabitants within this tranche of Ipswich positioned north of the Orwell, between the brook and Turret Lane. Dress accessories include a copper-alloy Cog-wheel type brooch (SF 24) and a lead brooch (SF 20). The penny (SF 6) of Aethelweard (9th century king of East Anglia) from the brook and the copper-alloy folding balance from ditch **1040** are important finds connected with trade and monetary exchange in the Late Anglo-Saxon *wic*/emporium (App. B.3.31). The pottery assemblage is dominated by locally-produced Thetford-type ware jars along with smaller proportions of St Neots-type and Yarmouth-type wares and some imported French blackwares, greyware and Badorf ware. Many pottery sherds retain evidence of sooting or limescale deposits demonstrating their use in cooking and holding or serving liquids (App. B.8.8). Other vessel types included spouted pitchers, bowls and storage vessels. Fragments of two lamps were also found. The small slag assemblage suggests the presence of iron smelting and smithing in the general vicinity. The whetstone (SF 119) from ditch **1158** is a typical item in a personal toolkit and would have been used for sharpening fine points such as needles (App. B.5.2). A bone needle (SF 121) was also recovered from ditch **1208** which was related to weaving (App. B.12.10). Toiletry items comprise fragments of two bone combs (SFs 108 and 160). More recreational pursuits are represented by two bone skates (SFs 102 and cxt.1128), which add to a large collection known from Ipswich. The rarely found mass of wool fibres from the waterlogged base of ditch **1208** almost certainly represent a form of sacking, perhaps related to trade or commercial activities (App. B.14.2). The associated roundwood fragments and worked debris at the base of the ditch provide further insight into the range of organic remains which probably accumulated within open features that had otherwise perished.
- 4.2.9 The animal bone assemblage demonstrates that the meat diet of the inhabitants in this part of Late Anglo-Saxon Ipswich consisted mostly of beef with some pork, mutton chicken and geese. The marked abundance of both lower limb and cranial elements of cattle, pig and sheep/goat indicates carcass processing also took place in the near vicinity (App. C.2.7). The assemblage is broadly consistent with direct urban provisioning through markets with animals brought into Ipswich on the hoof to be slaughtered (App. C.2.27). The recovery of neonatal pig remains suggests that some animals were also being kept and reared nearby (App. C.2.3), while the presence of older cattle remains suggests some were kept for milking (App. C.2.11). There was some evidence for

consumption of wild resources with red deer and brown hare represented in the faunal assemblage, while waterlogged plant remains include hazelnuts, blackberries, sloes and apples/pears.

- 4.2.10 In addition to meat, fish played an important role in the inhabitant's diet, with analysis of the fishbone assemblage showing that herring and eel were mostly consumed along with smaller quantities of marine fish, including small flatfishes, garfish, mackerel, whiting and cod (App. C.3.2). Freshwater fish were restricted to much fewer bones of possible perch and brown trout along with estuarine shad, flounder, and grey mullet (App. C.3.8). Oysters, mussels, and whelks were clearly also occasionally consumed. Evidence for the plant-based diet of the local population is provided by the small quantities of barley, oat, rye and free-threshing wheat grains recovered from feature fills: all known to have been favoured during the Anglo-Saxon period (App. C.5.20). Potable water was probably drawn from wells sunk into the groundwater table. A '3-foot square' wood-lined well was previously excavated on the north-west corner of the site to a 'depth of 11 feet with sherds of Thetford-type ware...' (Owles and Smedley 1964, 120; Fig. 4a, IPS 579). Whether this well was a communal construction for the close or wider community, or only available to an individual burgrave plot is unknown.

4.3 The site in relation to the Augustinian priory and Cardinal Wolsey's College

- 4.3.1 The site probably lay within the north-eastern grounds of the medieval Augustinian priory of St Peter and St Paul and later the Cardinal's College of St Mary (known as Cardinal Wolsey's College)(Fig. 16b). St Peter and St Nicholas together formed the south ward of the town. However, very few features or deposits were encountered which can help to elucidate this period of activity or inform on the wider roles of these establishments within the developing town. The general lack of features together with a notable decline in the number of medieval (and post-medieval) pottery sherds on this site compared with the Anglo-Saxon period suggests that the site had become an area of more open and relatively unoccupied land (such as gardens or orchards) within the priory precinct at this time. This is consistent with the current understanding that from the medieval period onwards, the urban core of Ipswich lay further to the east.
- 4.3.2 The wide coverage of the site offered by the evaluation test pits and trenches, along with the hand-excavated test pits investigated during the mitigation phase, indicate there was a build-up of *c.*0.5-0.7m of deposits across the medieval period (see Section 3.4.4; Table 1). These deposits possibly signify earth movement and levelling associated with the establishment of the grounds of the ecclesiastical foundations and/or their subsequent destruction. The upper horizon of the medieval deposits has been mapped across the evaluation trenches and subsequent hand-dug test pits to provide some insight into the topography of the site in the mid-16th century (Fig. 9). Most of the site was found to be fairly level with only a slight fall in height from *c.*2.8m in the north-east to *c.*2.6m OD to the south-west. Based on a height recorded in Trench 3, a steeper drop in elevation from *c.*2.5m OD to *c.*2.2m OD is plausible in the southernmost portion of site. Although only a tentative conclusion, it is proposed that this local topography may have influenced the notable deviation of Turret Lane from its north-south route as it passed west of the site.

- 4.3.3 Along with the shift in land-use, there is a corresponding shift in emphasis towards greater quantities of CBM and the presence of fragmentary architectural limestone within the finds assemblage, along with the continued accumulation of metalwork; indicative of clearance and dumping of material from elsewhere. The presence of disarticulated human bone in deposits excavated in Test Pit 2, and in Area 10 (radiocarbon dated to the 9th century (Table 17)), indicates any medieval or early post-medieval levelling or demolition events probably extended to the disturbance of pre-existing burial ground(s) in the parish.
- 4.3.4 No wall foundations, floors, yard surfaces or graves associated with the priory or college were excavated on this site. However, a notable quantity of medieval roof tile and two fragments of floor tile were excavated from medieval and post-medieval deposits (App. B.9.26). Ceramic roof tiles were relatively expensive during the medieval period, so their presence on the site suggests a high-status structure in the vicinity, pre-dating the construction of the Cardinal's College, and therefore were probably related to the priory (App. B.9.39). The only other possibly related find was two shards of opaque medieval window glass to help reconstruct part of the glazing scheme of its windows (App. B.7.10). A further tentative observation may be made on urban cultivation of food plants, possibly grown within the priory gardens, as the identifiable waterlogged seed assemblage from medieval deposits include plums, cherries, beets/spinach, brassicas (turnips/swede/cabbages), a tentative identification of onion, opium poppy, and coriander. However, the possible importation of midden material from elsewhere and contamination from reworked Late Anglo-Saxon deposits limits any firm interpretation on whether these plants were grown on or near the site. Certainly, the similarity in relative composition of cattle, pig and goat/sheep bone between Late Anglo-Saxon and medieval deposits might suggest a common origin.
- 4.3.5 It appears that the two pieces of limestone are of either of late medieval or early post-medieval origin and therefore probably formed part of a college window (App. B.5.4). Two fragments of possibly early-16th century window glass – one painted with a floral pattern – from a late medieval deposit may also have been associated with the college (App. B.7.8).

The Broc/brook

- 4.3.6 The course of the brook delineated by Trenches 4 and 5 in the eastern part of site probably represents the historical *Broc* which extended from ponds in Christchurch Park to the north via Northgate and Upper and Lower Brook Streets to Common Quay to the south (Fig. 16; Allen 2001, 34). There is also a 15th-century record of 'water running from the fishmarket which should have an in and out flow through his wall and thro' the priory grounds into the salt water' (SHER 1739 N90). South of the site, evaluation trenches on the former Cardinal Works site, College Street suggested the watercourse passed immediately to the west of the church of St Mary at the Quay (Martin *et al.* 2001, 101). Therefore, as the *Broc* passed the site, it probably delineated the eastern limit of the Augustinian priory and succeeding Cardinal's College grounds (Fig. 4b; Amor 2011, maps 1 and 2).
- 4.3.7 No remains of an associated precinct boundary wall alongside the brook were observed within the trenches. Deposits within the channel of the brook produced pottery dating

from the 7th to early 16th centuries (along with late medieval/post-medieval CBM fragments) to support the presence of an open (but possibly being infilled with settlement detritus) watercourse across the medieval period. There was tentative evidence in Trench 5 for a bank along its eastern side, while the steep slope of the brook's exposed edge may indicate that it was at some point managed as a cut channel. The chronology of artefacts from the backfills of the brook together with the build-up of post-medieval deposits indicative of widespread earth movement shortly after the destruction of the priory and/or college, suggests that the brook was probably infilled during the 16th century. This date probably reflects post-Reformation land-use and ownership changes.

4.4 Remains relating to post-medieval Lower Brook Street

Post-Dissolution topography

- 4.4.1 Documentary sources record the installation of conduits down Lower Brook Street in the 17th century (Allen 2001, 47), and the brook is absent from Speed's 1610 map of Ipswich (Fig. 17). There was no evidence for a conduit within the infilled brook in the area of the excavations, further demonstrating that its alignment had been shifted eastwards to its new man-made course beneath the street.
- 4.4.2 During the mitigation phase of the investigation, post-medieval deposits were only excavated by a few hand-excavated test pits in the western part of the site (Areas 10 and 11). A wider coverage of the site was provided by the previous evaluation (Test Pit 2, Trench 3, and Trenches 5–7) which also encountered deposits attributed to this period. Test Pit 2 investigated post-medieval soils which produced a wealth of artefacts and ecofacts which may represent the dumping of 'night soil' from nearby houses, the presence of middens on marginal land or manuring of gardens and orchards.
- 4.4.3 The archaeological evidence chimes with 17th-century maps of the site. Speed's map of 1610 depicts most of the site as open ground to the east of buildings strung along the street frontage to the west with a more open frontage onto Lower Brook Street to the east (Fig. 17). However, this map is demonstrably schematic in nature. A more accurate depiction of the site's situation is given by Ogilby's 1674 map of Ipswich which shows the eastern part of the site comprising 'Nagshead Orchard' (Fig. 18). A large, possibly ornamental, pond is shown immediately south of site which may relate to the truncated natural ground surface recorded in Trench 3, possibly a result of landscaping to its north (Fig. 19). The western part of the site was occupied by four ranges of warehouse-type buildings, which possibly signifies the arrival of maltings (see below).
- 4.4.4 The dissolution of the Augustinian priory in 1528 and Cardinal Wolsey's college in 1530 had clearly opened-up the site to development. However, the build-up of archaeological deposits reflects the integration of the former priory into the largely open swathe of Ipswich depicted by Ogilby's map that extended between more built-up frontages along St Peter's Street to the west and Foundation Street to the east. This situation is expressed in the SHER record with most of the recorded surviving 16th–17th-century timber-framed buildings lying along these thoroughfares (see Fig. 4c). The intervening tracts of gardens and orchards – along with the ornamental pond – within which the site lay is indicative of a gentrified environment.

Changes in site ownership and urban development. A gentrified area?

- 4.4.5 The SHER lists some notable town houses of the merchant class, church and nobility in this part of Ipswich (see Fig. 4c). After the dissolution of the college, the c.6-acre site of the monastery was granted to Thomas Alvard (Page 1975, 102-3; Breen 2020, 19). The former priory close was later divided between Thomas Seckford and William Dyer and afterwards John Fayerweather (Breen 2020, 19). Alvard's manor was still recorded within the grounds of 'Wolsey's School' in 1691 (UAD ref.: MSF16927). Bishop Wren's house is also recorded within St Peter's parish (IPS 1739, N118). The site of the Duke of Suffolk's house lay 70m to the north. Furthermore, the early-16th century site of Lord Curzon's mansion lay 100m to the west which later became the house of the Bishops of Norwich from 1666. Nevertheless, a thriving economy in this part of town was witnessed by the presence of a fishmarket from 1616, a timber market from 1674 and a cattle market with the buttermarket to the north (see Fig. 4c). To the south, further changes were evident as the long processes of soil build-up and reclamation resulted in the advancement of the riverine margins of the town beyond the Anglo-Saxon and medieval limits.
- 4.4.6 Assemblages of pottery, glass and tobacco pipe were recovered from the site that provide some insight into the evolving material culture of the inhabitants of this suburban environment. The pottery assemblage comprises several local redwares and English tin-glazed earthenwares supplemented by imported Dutch whitewares and Rhenish stonewares. The most frequent form of glass found was bottle glass – including a late 17th to early 18th century onion or mallet bottle – followed by drinking vessels – including stemware - and phials/flasks (App. B.7.11-16). Most of the tobacco pipe was plain and unmarked and dated mainly to the early to mid-17th century. However, three notable marked early 18th-century Dutch pipe bowls were recovered along with two decorative Dutch pipe stems (App. B.11.5; Fig. B.11.1) from Gouda. The attribution of all of the Dutch pipes to makers in Gouda is excellent evidence for the trade in the good quality pipes produced there (App. B.11.24). The imported pottery, glassware and Dutch tobacco pipes are evidence for gentrification and nearby households of middling status as the 17th and 18th centuries progressed. Previous findspots of these materials in the SHER are plotted on Fig. 4c.
- 4.4.7 There is the possibility the assemblage of vessel glass from Period 4.1 layer 1288 resulted from the clearance of a nearby inn/tavern or an apothecary in the early 18th century (App. B.7.27; Fig. B.7.1, nos 2–11). Interestingly, this notion is supported by the pottery recovered from this context which comprised sherds from several early British stoneware bottles and a Chinese porcelain bowl (App. B.8.24; Fig. B.8.1, no. 16). Some of the bottles had stamped labels for Ipswich merchants, and two with the maker's stamp "Price, Bristol". This deposit also produced the decorative Dutch pipe bowls from Gouda (App. B.11.12; Fig. B.11.1, nos 1–5) and was further dated by a halfenny (SF 134) of William III. Unfortunately, a search of the Ipswich Borough Archives (1255–1835) did not find any mention of an apothecary or inn within St Peter's parish (Allen 2000).

4.5 Late 17th–19th-century maltings

- 4.5.1 Ogilby's 1674 map possibly provides the earliest depiction of maltings on this site, represented by four ranges of warehouse-type buildings fronting onto Turret Lane (Fig. 18). Pennington's map of 1778 depicts a similar group of probable maltings buildings owned by a Mr Dobson with an orchard in the eastern part of the site owned by a Mrs Wilder (Fig. 19). The remains of maltings (otherwise known as malthouses) survive in England from the 16th century onwards with most examples dating to the late 18th and 19th centuries. Malt was mainly produced to brew beer. It derived from barley which was best grown in the dry eastern and south-eastern counties (Richmond and Turton 1990, 2). With the rise of home brewing from the late medieval period until the 17th century, bakehouse and domestic ovens were used for drying malt (Rickett 2021, 19; Patrick 2004, 4). By the 18th century, commercial-scale maltings had appeared in many cities and towns alongside breweries to cater the growing demand for beer (Patrick 2004, 5). Upon arrival at the malthouse, barley was cleaned and then dried in a barley kiln to reduce moisture content so it could be stored safely. Maltings of various designs were built to produce 'floor malt'. The grain was first steeped in water within cisterns for between 60 to 72 hours to provide a moisture content of 40–45%. Couching then took place where the steeped grain was heaped to encourage germination through gentle heating, after which the grain was spread onto a floor for up to 14 days to germinate. This 'green malt' then went into a malt kiln supported by brick or stone vaulting which housed a furnace on the ground floor. The malt was cured at a temperature as high as 105°C to halt germination. After a final cleaning, the malt was ready for storage for at least a month before it was sent to a brewery (Patrick 1996, 180-3; Patrick 2004, 9-22).
- 4.5.2 A malthouse therefore housed separate storage areas for barley and malt, a barley drying kiln, steeping tanks, malting floors (otherwise known as growing floors) and a malt kiln heated by a furnace below. A ready supply of water was also needed to steep the grain. The excavation at Lower Brook Street revealed the surviving below-ground remnants of two functional elements associated with these processes: the circular brick base of a malt kiln furnace (*c.* 1.8m in diameter) and a circular brick-built well (*c.* 2.5m in diameter). No remains of tools or other implements, such as malt shovels, forks, *etc.*, associated with the maltings were recovered from the site.
- 4.5.3 Brick-built furnaces are known to have been used from at least the 18th century onwards (Patrick 2004, 20). The bricks sampled from the furnace date to the 18th century, with those from the surrounding walls being of 19th century date. The bricks sampled from wall vestiges recorded along the south-eastern limit of Area 9 were a mixture of 18th and 19th century examples. The group of walls surrounding Test Pit B, towards the northern limit of Area 10, contained a mixture of 17th–19th century brick. A small quantity of malting tile was recovered as residual items from 20th century (Period 4) deposits which, nevertheless, included several different sizes and types of tiles which may reflect their replacement over several decades of use. From the 18th century onwards, drying kilns used perforated malting floor tiles which allowed the passage of heat without the grains of barley dropping below (Patrick 2004, 19; Crew 2004, 4). Only machine-made examples were recovered from this site, which date from the mid-19th century onwards (App. B.9.18; Crew 2004, 4). Overall, the *in situ* wall

remnants and other recovered CBM are suggestive of continual use with episodes of refurbishment and repair of the maltings over its *c.*250 year history.

- 4.5.4 Only a few vestiges of wall footings for the malthouse buildings survived their wholesale clearance for the construction of the furniture factory, shortly after the turn of the 20th century. Brick samples were dated to the 17th/18th–19th centuries, with several being more certainly dated to the 19th century (App. B.9.12). The substantial circular, brick-built well dates to the 18th century. Ogilby's map of 1674, Pennington's map of 1778 and the 1884 Ordnance Survey map show the evolving overall layout of the buildings across these two centuries (Figs 18–20). Significantly, these maps show the kiln furnace remains lay at one end of its associated malthouse. This arrangement conforms to the 'Newark Pattern' and 'Two Storey Maltings' types which were in use in Suffolk from the 18th to mid/late 19th century. 'Multi-Storey Malthouses' in this configuration also appeared from *c.*1880 prior to the Second World War (Patrick 1996, 193–7; Patrick 2004, 31–34 and 36). A diagram showing the arrangement of a typical early 19th century two-floor malting is given as Fig. 21, reproduced from Clark 1998 (fig. 1.2). In addition to the almost complete destruction of the malting's walls, only a few vestiges of external gravel or cobble yard surfaces survived within the areas investigated.
- 4.5.5 The known maltings listed on the SHER are located near to the river (Fig. 4d) which reflects the earlier situation of late medieval beer brewing having been concentrated in the east ward (comprising the parishes of St Clement, St Mary Quay and St Stephen) near the docks, dominated early on by the expatriate Dutch community in Ipswich. The primary ingredient of beer was malt: artificially germinated barley grain. By the 15th century beer was being brewed in every ward of the city and was becoming an increasingly commercial enterprise (Amor 2011, 152-4; Pajic 2019, 296 & 299). There were 19 beer brewers by the end of the 15th century in the town's east ward and in 1508 the borough 'levied on alien [Dutch] maltsters a fine of 6s. 8d. for each quarter so malted' (*ibid.*, 204).
- 4.5.6 The results of the excavation have confirmed the historical map evidence for a later development whereby, from the late 17th century, industrial-scale production of malt had spread beyond the east ward of the city. The demand was no doubt in part due to the arrival of new breweries in the town, such as the famous Cobbold & Co. Ltd which moved to Ipswich in 1746 (Richmond and Turton 1990, 108). There was also demand closer to the site, with Brook Street Brewery founded on Upper Brook Street in 1856 (*ibid.*, 333). There is a record of 'malt offices and cinder oven' somewhere in St Peter's parish in 1763 (SHER IPS 1739, N131). A later record possibly relating to the current site is of Henry Aldrich owning a freehold on Lower Brook Street which comprised a 'genteel family house, malting office, outbuildings, cottage' (Suffolk Archives ref. no.: HE402/1/1833/1). During a time of poor profits in *c.*1835 Henry Aldrich is quoted as stating 'there were one third of the malthouses in our town not put to work', suggesting a period of suppressed demand for malt (Clark 1998, 129). Due to the presence of the furnace, 'fires of considerable magnitude at maltings' periodically occurred, with Ipswich listed as one of the towns that witnessed such an event (Reed 1907, 695). It was observed that many of the bricks sampled from this site had been subject to intense heat (App. B.9.12), however, any link with fire damage remains unproven.

4.5.7 A collection of records and a sale map from 1895 demonstrates that by that date the Turret Lane maltings comprised 'three maltings, warehouse, yard, cottage and house' (Suffolk Archives ref. no.: HE402/1/1895/56). The particulars of sale, which includes a detailed description of the maltings, is transcribed in Appendix G. A tracing of the accompanying map is given as Fig. 22. It is significant that the map shows the kilns within dogleg projections of two of the malthouse buildings. This strongly suggests the excavated kiln furnace belongs to the earliest configuration of probable maltings shown on Ogilby's map of 1674 (Fig. 18). In particular, the eastern projection of the westernmost building extends over the site of the furnace. The early separation of kilns, malt floors and warehouse space would have helped guard against the spread of fire from a kiln. This is a significant discovery in the study of early maltings and helps prove the use of brick-built furnaces during the early 18th century. The 18th-century bricks sampled from the furnace came from its latest design before it fell out of use, with more antiquated furnaces probably having previously occupied the site as shown on the 1674 map. The position of the furnace within a room constructed of 19th-century brick indicates it may have been initially incorporated into the later configuration of 18th/19th century maltings. However, the furnace had clearly fallen out of use after further renovations, prior to the 1895 sale, when the kiln lay at the opposite end of the building (Fig. 22). It remains a possibility that this furnace was a kiln for drying barley on its arrival before storage, or was repurposed for this task in the later maltings and not marked on the 1895 map. Clearly, not all built elements are placed on the map, such as the well. Some 17th-century 'Dutch bricks' were also incorporated into the 18th/19th century buildings which probably originated from the original maltings. After their demolition, much of the brick was evidently recycled from the 18th/19th century maltings for use in the early 20th century furniture factory (Fig. 23).

4.6 Significance

4.6.1 The investigations at Lower Brook Street have made a significant contribution to understanding the development of this – hitherto under-reported – part of Ipswich. Identifying the early course of the *Broc* is of note, especially as this may have formed an important boundary from the Anglo-Saxon period until it was diverted via a culvert under Lower Brook Street in the 17th century.

4.6.2 During the late 10th and 11th centuries, the site evidently lay well within the urban reach of the town. Its occupants were cleared in the early 12th century when the site was incorporated into the Augustinian priory of St Peter and St Paul. The site appears to have largely been archaeologically dormant within the precincts of the priory until its dissolution, possibly lying within an open area given over to orchards or gardens where only a modest build-up of medieval deposits accumulated. Although of lower significance, these deposits yielded tile, architectural stone, and glass fragments that provide some limited insight into the appearance of the priory and college buildings.

4.6.3 The post-medieval archaeological remains were similarly restricted to deposit layers, evidence which nevertheless support 16th-century mapping evidence for a partly open post-dissolution environment of orchards, gardens and backlands between the more built-up areas along St Peter's Street to the west and Foundation Street (later Lower Brook Street?) to the east. The post-medieval soils produced moderately significant

assemblages of pottery, vessel glass and tobacco-pipe which both represent the material culture of the middling classes of the town and signal Dutch influence. The discovery of an *in-situ* brick-built malt kiln furnace, possibly associated with the earliest configuration of late 17th to early 18th century malthouses on Turret Lane is a significant find for this field of study and to the wider port-town with its rich beer-making history.

5 PUBLICATION AND ARCHIVING

5.1 Publication

5.1.1 A publication proposal will be submitted to the *Proceedings of the Suffolk Institute of Archaeology and History* with the aim of publishing an article focusing on the most significant archaeological remains at Lower Brook Street. The article will be submitted by the end of 2023.

5.2 Archiving, retention and dispersal

5.2.1 The site archive is currently held by OA East and will be deposited with SCCAS under the site code/accession number IPS 865 in 2023. The archive will comprise a maximum of 40 bulk finds boxes and two paperwork boxes. SCCAS will also receive a copy of the digital archive held by OA East.

5.2.2 The following table details the dispersal policy for artefacts and environmental remains from the site.

Material	Retention and dispersal policy
Coins	Retain
Lead tablet	Retain
Metalwork	Retain
Slag	Disperse
Stone	Retain whetstone and architectural stone. Disperse unworked natural amethyst.
Flint	Retain worked flint. Disperse unworked burnt flint.
Glass	Retain Disperse only modern glass.
Pottery	Retain
CBM	Retain only representative samples of medieval and post-medieval floor and roof tiles. Retain only a representative sample of post-medieval brick. Disperse all modern and unidentifiable brick and tile.
Fired clay	Disperse
Clay tobacco pipe	Retain
Worked wood	Disperse
Animal bone	Retain Periods 1 and 2 assemblages. Disperse Periods 3 and 4 assemblages.
Fish bone	Retain
Marine mollusca	Disperse
Plant remains	Retain
Bulk soil sample residues	Discard

Table 18: Artefacts and environmental remains dispersal policy

APPENDIX A CONTEXT INVENTORY

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
	0	0	0									
1	101	0	4.3	surface (internal)	Car Park Surface					0.05		
1	102	0	4.3	Hardcore	Base for car park surface					0.38		
1	103	0	4.3	dumping layer	part of levelling layer	mid greyish brown	sands	fine gravels and concrete lumps/fragments		0.2		
1	104	0	4.3	backfill deposit	capping layer	pale yellowish grey brown	sands	fine gravel and cement		0.04		
1	105	0	4.3	Rubble fill	cellar backfill			Bricks, Tile, concrete lumps, sands and gravels		0.48		
1	106	0	4.3	fill	capping layer	pale yellowish grey brown	sands	fine gravels and cement		0.04		
1	107	0	4.3	rubble layer	cellar backfill			bricks, tiles, concrete lumps, sands and fine gravels		1		
1	108	0	4.3	floor	floor to cellar building							
2	201	0	4.3	surface (external)	car park surface					0.05		
2	202	0	4.3	hardcore	make up for carpark surface			bricks, tiles and concrete lumps		0.22		
2	203	0	4.2	wall	garden wall				0.25	0.11		
2	204	0	4.2	floor	floor to former building?				2.65	0.32		
2	205	0	4.2	buried soil	garden soil	very dark brown	silty clay sand	flints, pebbles, charcoal lumps and sand lenses		0.28		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
2	206	0	4.2	buried soil	cultivation garden soil	very dark brown	sandy silty clay	occasional flints, pebbles sand lenses and charcoal lumps		0.28		
2	207	0	3	buried soil	cultivation garden soil	dark grey brown	sandy silty clay	occasional flints, pebbles, sand lenses and charcoal lumps		0.38		
2	208	0	3	buried soil	Cultivation Garden Soil	mid grey	sandy silty clay	occasional flints, pebbles and charcoal lumps		0.35		
2	209	0	4.2	deposit	levelling material	mid brown yellow	sandy silt	sands, gravels and occasional charcoal lumps		0.22		
2	210	0	2	buried soil	A garden cultivation soil	very dark grey	silty sandy clay	flints, pebbles, charcoal lumps sand lenses and frequent tile fragments		0.71		
2	211	0	2	deposit	the base layer of test pit	mid grey brown	silty sand	gravel flints, pebbles and some clay lumps		0.22		
2	212	0	0	natural	natural							
3	300	0	4.2	capping	Concrete capping					0.1		
3	301	0	4.2	rubble layer		Dark Greyish Brown	sandy silt			0.5		
3	302	312	2	pit	Disuse	mid green grey	silty clay	moderate charcoal flecks, oyster shell, lumps of chalk and green brown clay		0.38		
3	303	312	2	pit	Disuse	Mid Reddish Grey	Silty sand	rare small stones		0.32		
3	304	312	2		Disuse	mid greyish brown	silty sand	rare small stones		0.16		
3	305	312	3		disuse	light greyish brown	sandy silt	rare small stones		0.12		
3	306	0	3			dark green grey	clayey silt	rare small stones		0.38		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
3	307	0	4.2			dark reddish brown	clayey sand			0.06		
3	308	0	4.2	soil		light greyish brown	clayey silt	rare small stones		0.36		
3	309	0	4.2	soil		mid greyish brown	clayey silt	rare small stones		0.44		
3	310	0	4.2			dark greyish brown	clayey silt			0.14		
3	311	0	4.2	wall	lower fill of masonry cut	light yellow	sand	mortar and CBM frags		0.4		
3	312	0	2	pit						1.7	circular	U shape
3	313	0	2	pit		dark greyish brown	clayey silt			0.4		
3	314	0	2	pit		dark green brown	silty sand			0.26		
3	315	0	2	pit		light grey	silty sand	very rare random small stones		0.2		
3	317	0	4.2	wall	structure							
3	318	0	4.2	wall	structure							
3	319	0	4.2	wall	structure							
4	400	0	0	brook		light greyish brown	silty sand			0.18		
4	401	0	0	brook		dark reddish brown	sandy silt	rare random small stones		0.32		
4	402	0	0	brook		light grey	clayey silt	rare random small stones		0.22		
4	403	0	0	brook	slump	dark orangey brown	clayey sand			0.03		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
4	404	0	0	brook	dump	mid greyish brown	clayey silt			0.57		
4	405	0	3	buried soil	buried soil	light grey	clayey silt			0.3		
4	406	0	3	buried soil		mid grey	sandy silt			0.28		
4	407	0	3	buried soil		light grey	sandy silt			0.26		
4	408	0	3	buried soil		dark greyish brown				0.2		
4	409	0	3	buried soil		dark greyish brown	sandy silt			0.1		
4	410	0	3	buried soil		mid brownish grey	sandy silt			0.1		
4	411	0	4.3	structure	brickwork					0.5		
4	412	0	4.3	floor	surface					0.3		
4	413	0	3	natural	brook					0.85		
	502	0	4.2	wall	structure				0.35	0.15		
5	503	0	4.2	wall	foundations				0.48			
5	504	0	4.2	wall	structure				0.38	0.14		
5	505	0	4.2	wall	structure				0.38			
5	506	507	3	Brook		Mid grey brown	clay silt	small stones-rare- random		0.8		
5	507	0	0	Brook						2		U ?
5	508	0	4.2		foundation layer for wall	mid yellowish grey	mortar and sand			0.4		
5	509	507	3	brook	silting up	light grey brown	clay silt	small stones-rare- random		0.2		
5	510	0	3	buried soil	garden soil	mid greyish brown	sandy silt	rare small random stones		0.22		
5	511	0	3	buried soil		dark greyish brown	clayey silt			0.42		
5	512	0	4.2	ditch	wall foundation trench				1.28	0.38		U shape

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
5	513	0	4.2	ditch	backfill	mid yellowish brown	sand			0.38		
5	516	0	4.2	foundation		dark reddish brown	clayey silt	Brick and mortar and CBM throughout		0.4		
5	517	507	3	brook		dark greyish green	silty sand	moderate small random stones		0.16		
5	518	507	3	brook		dark greyish green	clayey silt	moderate random small stones		0.06		
5	519	507	3	brook		dark green grey	clayey silt			0.26		
5	520	507	0	brook		mid grey	sandy silt			0.1		
5	521	507	0	brook		mid orange	sand			0.04		
5	522	507	0	brook		dark green grey	silty sand			0.18		
5	523	0	0	brook		mid greyish brown	silty sand			0.52		
5	524	0	4.2	foundation		light reddish brown	silty sand	moderate CBM		0.3		
5	525	0	4.2	foundation		dark brownish yellow	sand			0.3		
6	600	0	4.2	floor								
6	601	0	4.2		rubble backfill of trench							
6	602	0	4.2		backfill							
6	603	0	1									
6	604	0	1			dark green grey	clay silt	small stones-moderate- random				
6	605	606	1	pit	disuse	dark green grey	sand silt	small stones-rare- random		0.3		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
6	606	0	1	pit						0.36	sub rectangu lar	U
6	607	0	1		soil	dark green grey	clay silt	small stones-rare- random		0.1		
6	608	606	1	pit	silting up	dark red brown	silt sand	small stones-rare- random		0.26		
6	610	0	1	pit					1.3	0.22	sub- circular	U
6	611	610	1	pit	silting up	grey brown mottled	silt sand	small stones-rare- random		0.08		
6	612	610	1	pit	disuse	dark red brown	sand silt	small stones-rare- random		0.16		
6	613	0	3		buried soil	mid green grey	clay silt	small stones-moderate- random		0.3		
6	614	0	3		buried soil ?	dark green grey	clay silt	small stones-rare- random		0.2		
6	615	0	3		buried soil	dark grey green	sand silt	small stones-random- rare		0.42		
6	616	606	4.2	layer	layer					0.3		
6	617	0	4.2	pit	pit	dark red brown				0.04		
6	618	618	3		truncation							
6	619	619	4.2		truncation							
7	700	0	4.2	floor								
7	701	0	4.2	layer			clay silt					
7	703	0	4.2	wall								
7	704	0	4.2	structure	urinal							
7	705	0	4.2	wall	structural							
7	706	0	4.2	wall	structural							
7	707	0	4.2	wall	structural							
7	708	0	4.1	wall	wall within construction cut							
7	709	0	4.2	drain	structural							
7	710	0	4.2	drain	structural							

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
7	711	0	4.1	wall	structural							
7	712	0	4.2	wall	structural							
7	713	0	4.2	wall	structural							
7	714	0	4.2	wall	structural							
7	715	0	4.2	floor	floor	mid grey	concrete	stone and brick inclusions	2.1	0.2		
7	716	0	4.1	wall								
7	717	0	4.1	floor	use							
7	719	0	4.1	wall	brick making up wall	mid red	brick					
7	720	0	4.1	layer	disuse	mid brown yellow	sand and mortar			0.2		
7	721	0	4.1	?surface (external)	?stony yard surface	mid orangey brown	sand with some ash	frequent rounded stones (cobbles?), very regular smaller and medium sized stones		0.25		
7	722	0	4.2	pit	unknown				0.91	0.31	sub- circular	flat base steep sides
7	723	0	4.2	pit	ashy waste	dark grey	ashy sandy silt	occasional stones, frequent charcoal flecks	0.91	0.31		
7	724	0	4.1	ashy brick layer	Rubble waste/ Tipping?	orange grey	ashy sandy silt	frequent brick and tile fragments, charcoal flecks	2.1	0.21		
7	725	0	4.2	ditch	backfill	light grey brown	sand silt	moderate random small-medium stones		0.5		
7	726	0	4.2	ditch	construction				0.44	0.5	linear	U shape
7	727	0	4.1	surface clay	floor base	cream yellow	clay sand	rare small random stones		0.16		
7	728	0	4.2	mortar surface	floor base	dark yellow	mortar and sand			0.06		
7	729	0	4.2	debris	backfill	dark grey brown	soft sand	moderate small random stones		0.28		
7	730	0	4.2	wall	mortar base	light grey brown	silty sand and mortar	rare loose small stones		0.08		
7	731	0	4.1	construction	backfill	dark grey	sand silt	rare small stones		0.38		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
7	732	0	4.1	construction	backfill	light grey brown	sandy silt	rare small stones and CBM frags		0.22		
7	733	0	4.1	construction	backfill	dark grey	sandy silt	rare small stones and CBM frags		0.15		
7	734	0	4.1	demolition	layer within demolition	light yellow	sand					
7	735	0	4.1	wall	mortar for wall	light grey	mortar					
7	738	0	4.2	foundation trench	construction slot for wall							
7	739	0	4.1	wall	brick wall in construction trench							
7	740	0	4.1	foundation trench	backfill of construction trench							
7	741	0	4.2	wall foundation	foundation trench						linear	
7	742	0	4.2	wall	backfill of wall construction trench		silty sand					
7	743	0	4.1	wall	brick wall in construction trench							
7	744	0	4.1		layer within building	mid greyish brown	silty sand					
7	745	0	4.1		layer within building	mid yellow	sand					
7	746	0	4.1		layer within building	mid greyish brown	silty sand					
7	747	0	4.1		layer within building	mid yellow	sand					
7	748	0	4.1	cobbles	track/roadway	grey	sand	compacted sand concrete hard cobble surface	1.5			
7	749	0	4.1	ash surface	possible surface	dark grey	ash and soils	small coal pieces and occasional CBM frags	0.7			
7	750	751	2	pit	Disuse	mid grey brown	sand silt		1.8	0.2		
7	751	0	2	pit					1.9	0.3		U
7	752	0	2	pit	Disuse	light red brown	silt sand		1.8	0.1		
7	753	0	2	pit					1	0.22		U

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
7	754	0	2	pit	Disuse	dark grey brown	silt sand		1	0.22		
7	755	0	2	pit					0.34	0.26		V
7	756	0	2			light grey	sand silt			0.02		
7	757	755	2		Disuse	dark brown grey	sandy silt			0.4		
7	758	0	2			mid grey brown	clay silt			0.3		
7	759	0	3			bright red brown	sand clay			0.1		
7	760	0	3			dark brown grey	clay silt			0.4		
	761	0	3			dark grey	clay silt			0.1		
7	762	0	3			dark red brown	sand			0.12		
7	763	0	3			light grey	clay silt			0.2		
7	764	0	3									
7	765	0	3									
7	766	0	4.2									
7	767	0	4.2									
7	768	0	4.2									
7	769	0	4.2									
7	770		4.1									
7	772	0	3									
7	773	0	3									
7	774		4.2		truncation line below floor 748							
A	800	0	VOID		rubble - back fill layer	mid grey brown	sand silt	various fragments of rubble - backfill stone - frequent and random				
A	801	0	VOID	wall	building annex	materials - LBC red manufactur ed brick	Size: L220mm, W100mm, H70mm	finish: ashlar	0.22			

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
A	802	0	VOID	wall	structure	materials: LBC frogged red brick	size: L0.2m, W0.1m, H0.07m	finish	0.2			
A	803	0	VOID	wall	wall	material: unfrogged red brick	size: L0.26m, T0.11m, H0.07m	direction of faces: E/W	0.45			
A	804	0	VOID	wall		materials: unfrogged red brick	size: H0.07m, T0.10m, L0.22m	direction of faces: N/S	0.6			
B	806	0	4.2	wall	structural	red manufactur ed brick	2.5mmX.13 mm or 25mmx13m m average size		0.51	0.42		
B	807	0	4.2	rubble/stone foundations	foundation	dark brownish grey	sandy silt	large angular but smooth nodular stones - abundant with small pieces of brick and tile - occasional		0.16		
B	808	0	4.2	mortar	bonding and levelling	light brownish yellow	lime based? Mortar			0.1		
B	809	0	4.2	stones/rubbl e	possible foundation layer	mid brownish grey	sandy silt	large angular but smooth nodular stones super abundant - voids filled with occasional brick and tile		0.48		
B	810	0	4.2	unknown	unknown	dark brownish grey	sandy silt	super abundant gravel (rounded stones approx size 0.05m to 0.10m)		0.3		
B	811	0	4.2	mortar layer	levelling?	light brownish yellow	lime based mortar			0.14		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
B	812	0	4.2	rubble	demolition	mid brownish grey	sandy silt	frequent large stones - angular and rounded, frequent CBM		0.36		
B	813	0	4.2	rubble/concrete	demolition	mid brownish grey	sandy silty	abundant concrete/mortar/cement/CBM and occasional stones				
B	814	0	4.2	wall	structural	materials. Red manufactured brick		finish: moulded brick	0.6	0.2		
B	815	0	4.2	wall foundation	structural	dark grey brown	silty sand	primarily large unworked smooth angular stone nodules with fragments ceramic tile occasional	1.54	0.24		
B	816	0	4.2	wall foundation mortar	structural	light brown yellow	lime sand mix		1.54	0.07		
B	817	0	4.2	wall foundation	structural	dark yellow grey	silty sand	mainly large smooth angular stones and occasional ceramic tile fragments	1.54	0.69		
B	818	0	4.2	demolition	disuse	dark yellow grey	silty sand	frequent small irregular gravel and medium rough angular stones	1.44	0.18		
B	819	0	4.2	demolition	disuse	mid brown grey	silty sand	small irregular sized gravel	1.42	0.11		
B	820	0	4.2	demolition	disuse/structural	light grey yellow	lime sand mixture	occ small rounded natural stones	1.42	0.18		
B	821	0	4.2	demolition	disuse	dark grey brown	sandy silt	rounded and irregular gravel throughout	1.42	0.32		
B	822	0	4.2	demolition	disuse	mid yellowy brown	sandy silt	primarily broken ceramic tile fragments	1.42	0.03		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
B	823	0	4.2	demolition	disuse	mid yellowy brown	silty sand	frequent irregular gravel	1.42	0.17		
B	824	0	4.2	floor	surface	red		tile		0.04		
B	825	0	4.2		levelling/building up	dark brown grey	sandy silt			0.2		
B	826	0	4.2	pit					0.38	0.2	not seen in plan	shallow disk
B	827	826	4.2	pit	disuse	dark grey brown	sandy silt	oyster shell forming a band 0.1m thick of frequent shells				
B	828	0	4.2		build up/levelling	mid brown grey	sandy silt	occasional charred material to 0.03m	0.7	0.13		
B	829	0	4.2	trench	foundation slot				0.32	0.55	not seen presume d linear	funnel shaped
B	830	829	4.2	building wall foundation cut	build up / levelling	mid grey brown	sandy silt		0.7	0.6		
B	831	0	4.2	post hole	structure						not seen in plan	
B	832	0	4.2	post hole	packing/structure	mixed medium grey brown	sandy silt	yellow white mottles of mortar 25% broken soft red brick				
B	833	0	4.2		construction/structure	dark grey	sandy silt					
B	834	0	4.2		structure	mid yellow brown	clay	none				
B	835	831	4.2	post hole	disuse	mid yellow grey	silty sand	occasional crushed soft red brick				
B	836	0	4.2	wall		mid red brick						
B	837	0	4.2		construction	light grey	cement					
8	1033	1033	4.2		truncation							
8	1034	0	4.2	layer	disuse	mid to dark grey	silty sandy clay	small stones and cobble		1.3		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
8	1035	0	1	pit	unknown					0.9	sub- circular	
8	1036	1035	1	pit	disuse	mid to dark grey	sandy silty clay	occasional small stones		0.9		
8	1037	0	1	pit	?					0.85	sub- circular	wide u shape
8	1038	0	1	pit	disuse	mid to dark grey	sandy silty clay	small stones occ grit		0.85		
9	1039	0	1	occupation	disuse/unknown	dark grey brown	sandy silt	well sorted small rare sub angular stones		0.33		
9	1040	0	1	ditch	road frontage				2.06	0.94	circular	flat based U shape
9	1041	1040	1	ditch	disuse/unknown	mid olive brown	sandy silt	small rare sub angular stones	1.74	0.25		
9	1042	0	4.2	natural deposit/back fill	disuse	dark greyish material	sandy silt	occasional poorly sorted small/med sized sub angular stones		0.36		
9	1043	0	4.2	backfill	disuse	mid grey brown	sandy silt	frequent poorly sorted small sub rounded stones; CBM rare		0.29		
9	1044	0	4.2	occupation/b uilding disturbance	disuse	dark brown grey	sandy silt	freq charcoal, chalk flecks, occ small rounded stones	8.1	0.32		
9	1045	0	VOID	foundation trench	building foundation				1.63	0.42	linear	wide u shape
9	1046	1045	VOID	foundation trench	foundation	mid brown grey	sandy silt	freq large flint cobbles brick and tile fragments		0.42		
9	1047	0	VOID	wall	structure	materials: brick and mortar	size: 0.22x0.10x0 .07m	Coursing: English bond	0.7	0.49		
9	1048	0	VOID	wall	structure	materials: brick, mortar and concrete	size: 0.24x0.10x0 .07m	coursing: uncertain - English?	0.45	0.6		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
9	1049	1040	1	ditch	disuse	dark brown grey	sandy silt	occ chalk and charcoal flecks	1.9	0.27		
9	1050	1040	1	ditch	disuse/unknown	mid grey brown	silty sand	occ sub angular stones	2.06	0.33		
9	1051	0	4.2	occupation	demolition/ build up	mid brown grey	sandy silt	rare small sub rounded stones, unsorted	0.28	0.46		
9	1052	0	4.2	occupation	unknown/disuse	mid grey brown	sandy silt	occ med sub angular stones unsorted	0.16	0.64		
9	1053	0	1	bank - ditch spoil	boundary bank	mid brown grey	sandy silt	occ charcoal flecks, occ small rounded gravel	1.2	0.5		
9	1054	0	1	occupation	disuse	dark brown grey	sandy silt	occ chalk and charcoal flecks. Occ small rounded stones	4.36	0.22		
9	1055	1040	1	ditch	primary silting/disuse?	very dark brownish grey	clayey silt	freq charcoal flecks, occ small sub rounded stones	1.52	0.34		
9	1056	0	1	ditch	boundary						linear	flat based U shape
9	1057	1056	1	ditch	disuse/unknown	mid olive brown	sandy silt	frequent well sorted sub-rounded stones, med sized				
9	1058	1056	1	ditch	disuse/unknown	dark blueish grey	sandy silt	rare sub angular stones large				
9	1059	0	1	pit	unknown use				0.96	0.16	sub- circular	wide shallow flat based U
9	1060	1059	1	pit	disuse	dark blueish grey	silty sand	nothing of note	0.96	0.16		
9	1061	0	1	pit	unknown				0.98	0.48	linear	U shaped ditch

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
9	1062	1061	1	pit	disuse	very dark brownish grey	silty sand	occ small subrounded stones, occ charcoal		0.34		
9	1063	1061	1	pit	disuse	dark greenish grey	silty sand	occ charcoal, occ small subrounded stones		0.26		
9	1064	1065	1	post hole	disuse	dark grey	sandy silt	grit and sand	0.2	0.15		
9	1065	0	1	post hole	structure				0.2	0.15	circular	u shape
9	1066	1067	1	post hole	disuse	dark grey	silty sand	loose	0.15	0.12		
9	1067	0	1	post hole	construction				0.2	0.15	circular	flat bottom u
9	1068	1069	1	post hole	disuse	dark grey	sandy silt	occ small stones	0.2	0.25		
9	1069	0	1	post hole	construction				0.2	0.25	circular	V shape
9	1070	0	1	washed in material	occupation waste	dark greenish grey	sandy silt	occ small stone				
9	1071	1072	1	post hole	disuse1072	dark grey	silty sand	very occ small stones and grit	0.3	0.1		
9	1072	0	1	post hole	construction				0.3	0.1	circular	flat bottom U shape
9	1073	1074	1	post hole	disuse	dark grey	silty sand	small occ stones	0.25	0.2		
9	1074	0	1	post hole	disuse				0.25	0.2	circular	V shape
9	1075	0	1	occupation spread	disuse	Very dark green grey	sandy silt	rare small stones				
9	1076	0	1	pit	use/unclear				0.9	0.16	sub-rectangular	Wide flat based shallow U
9	1077	1076	1	pit	disuse/silting	dark brown grey	sandy silt	nothing notable, odd green cess lens	0.68	0.16		
9	1078	0	1	ditch	boundary				1.7	0.25	linear	Shallow V

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
9	1079	1078	1	ditch	disuse	dark yellow green	silty sand	small sub rounded stones to 0.01m	0.22	0.25		
9	1080	0	1	pit	use				1.1	0.3	sub- circular	U shaped
9	1081	1080	1	pit	disuse/backfill	mid yellow grey	sandy silt	20% small stones to 0.01m occasional rounded stones to 0.02m		0.19		
9	1082	0	1	pit	extraction/industrial				0.9	0.25	sub- circular	irregular bowl
9	1083	0	1	pit	disuse	dark grey	sandy silt	occ small rounded stone to 0.01m		0.27		
9	1084	0	1	pit	processing?				0.96	0.55	sub- circular	wide flat based U
9	1085	1084	1	pit	disuse	mid reddish grey	fine sand	frequent charcoal and organic matter	0.48	0.16		
9	1086	1084	1	pit	deliberate backfill	mid brown grey	silty sand	frequent oyster and mussel shell. Rare charcoal	0.48	0.16		
9	1087	1084	1	pit	disuse	very dark grey	silty sand	some degraded CBM, CPR. Charcoal	0.48	0.34		
9	1088	0	1	gully	water movement				0.22	0.1	linear	flat based U
9	1089	1088	1	gully	backfill	mid brown grey	silty sand	frequent degraded CBM	0.22	0.1		
9	1090	1080	1	pit	disuse	dark grey	sandy silt	occasional small rounded stone o.01m		0.11		
9	1091	0	1	pit	unknown				1.22	0.6	linear	U shaped ditch
9	1092	1091	1	pit	disuse	mid brown grey	silty sand	occ small-medium subrounded stones, occ charcoal	0.48	0.27		
9	1093	1091	1	pit	disuse	very dark brown grey	silty sand	occ small-med subrounded flints. Freq charcoal	0.58	0.12		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
9	1094	1091	1	pit	disuse	dark greenish grey	silty sand	occ small subrounded stones. Occ charcoal	1.22	0.27		
9	1095	0	1	pit	uncertain				0.63	0.28	sub- circular	U- shaped pit
9	1096	1095	1	pit	disuse	mid brownish grey	silty sand	freq charcoal, occ small subrounded stones	0.64	0.28		
9	1097	0	1	pit	extraction				0.7	0.09	sub- rectangu lar	shallow U
9	1098	1094	1	pit	disuse	dark grey	silty fine sand		0.7	0.09		
9	1099	0	1	pit	uncertain/use				0.63	0.12	sub- rectangu lar	flat based U shape
9	1100	1099	1	pit	disuse	dark brown grey	silty sand	freq charcoal, occ small subangular stones	0.63	0.12		
9	1101	0	1	ditch	plot boundary				0.58	0.16	linear	U shaped ditch
9	1102	1101	1	ditch	disuse	dark brown grey	silty sand	freq charcoal, occ small subangular stones		0.16		
9	1103	0	1	ditch	uncertain				0.5	0.6	circular	U shaped pit
9	1104	1103	1	ditch	disuse	dark brown grey	silty sand	freq charcoal, occ small subangular stones	0.5	0.6		
9	1105	0	1	ditch	boundary				0.38	0.33	linear	wide shallow flat based U
9	1106	1105	1	ditch	disuse	V dark grey	silty sand	occ small-med stones + charcoal	0.38	0.33		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
9	1107	0	1	ditch	boundary				0.6	0.22	linear	modern stansion, modern printing press base
9	1108	1107	1	ditch	disuse	dark grey	silty sand	occ subangular stones to 0.02m	0.6	0.22		
9	1109	0	1	pit	uncertain				0.71	0.27	sub- rectangu lar	flat based U shape
9	1110	1109	1	pit	disuse	dark brownish grey	silty sand	freq charcoal, occ small subangular stones	0.71	0.27		
9	1111	0	1	post hole	construction				0.3	0.06	circular	shallow wide U
9	1112	1111	1	post hole	demolition	mid brown grey	silty sand	rare charcoal + cess	0.3	0.06		
9	1113	0	1	post hole	construction				0.27	0.1	circular	flat based U
9	1114	1113	1	post hole	demolition	mid brown grey	silty sand	rare charcoal + cess	0.27	0.1		
9	1115	0	1	post hole	construction				0.21	0.08	circular	U shape
9	1116	1115	1	post hole	demolition	mid green grey	silty sand	some cess	0.21	0.08		
9	1117	0	1	pit	extraction/industrial				0.42	0.2	linear	U shaped
9	1118	1117	1	pit	disuse	dark greenish grey	silty sand	occasional small subangular stone to 0.02m	0.42	0.2		
9	1119	0	1	ditch	plot boundary					0.34	linear	probabl e U shape
9	1120	1119	1	ditch	disuse	dark greenish grey	silty sand	occ charcoal, occ small subangular stones		0.34		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
9	1121	0	1	pit	uncertain				0.6	0.18	sub-circular	flat based U shape
9	1122	1121	1	pit	disuse	dark brownish grey	silty sand	freq charcoal, occ subangular small stones	0.56	0.18		
9	1123	0	1	pit	use				0.4	0.08	sub-rectangular	shallow U
9	1124	1123	1	pit	disuse	dark green grey	silty sand	occ subangular stones tp 0.02m		0.08		
9	1125	0	1	post hole	structure				0.3	0.08	circular	shallow dish
9	1126	1125	1	post hole	disuse	mid green grey	sandy silt	occ subangular stone to 0.02m		0.08		
9	1127	0	1	post hole	structure				0.3	0.08	circular	shallow bowl
9	1128	1127	1	post hole	disuse	dark green grey	sandy silt	occ sub angular stones to 0.02m		0.08		
9	1129	0	1	post hole	structure				0.3	0.08	sub-circular	shallow bowl
9	1130	1129	1	post hole	disuse	dark green grey	sandy silt			0.08		
9	1135	1136	1	pit	disuse	mid grey	silty sand	occ small stones, occ charcoal fleck		0.15		
9	1136	0	1	pit	?					0.5		
9	1137	1139	1	post hole	disuse	mid grey brown	silty sand	small stones occ	0.36	0.25		
9	1138	0	1	post hole	disuse	mid brown grey	silty sand	small stones	0.2	0.25		
9	1139	0	1	post hole	construction				0.36	0.25	circular	U shape
9	1140	1141	1	pit	disuse	Brown green	silty sand	occ small stone		0.18		
9	1141	0	1	pit	?					0.18	sub-circular	only partially visible

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
9	1142	0	1	post hole	structure?				0.27	0.14	sub-circular	U shape
9	1143	1142	1	post hole	disuse/backfill?	dark brown grey	silty sand	occ charcoal, occ small sub angular stones		0.15		
9	1144	0	1	post hole	structural				0.37	0.12	sub-circular	wide irreg U shape
9	1145	1144	1	post hole	demolition/backfill	dark brown grey	sandy silt	freq CBM lumps	0.37	0.12		
9	1146	0	1	occupation	disuse	dark greenish grey	silty sand	occ - freq charcoal, occ small - med sub rounded stones		0.31		
9	1147	0	1	pit	uncertain				1.86	0.25	sub-rectangular	flat based U shape
9	1148	1147	1	pit	disuse	dark brownish grey	silty sand	occ charcoal, occ small-med subangular stones		0.25		
9	1151	0	1	ditch	boundary						linear	shallow U
9	1152	1151	1	ditch	disuse	dark grey	sandy silt					
9	1153	1151	1	ditch	disuse	mid green yellow	sand	50% small sub angular stones to 0.01m				
9	1154	0	1	ditch	boundary				1.1			
9	1155	0	1	ditch	disuse							
9	1156	1156	1	pit	unknown							
9	1157	1156	1	pit	disuse							
9	1158	0	1	ditch	property boundary?				0.6	0.4	linear	truncated U shape
9	1159	1158	1	ditch	disuse	dark brown grey	silty sand	occ charcoal, occ small subangular stones		0.4		
9	1160	0	1	ditch	property boundary				1.28	0.42	linear	U shaped ditch

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
9	1161	1160	1	ditch	disuse	dark brown grey with occ yellow sand mottling	silty sand	freq charcoal, occ small-med subangular stones		0.42		
9	1162	0	1	post hole	structure				0.25	0.16	sub- circular	U shaped
9	1163	1162	1	post hole	disuse	dark greenish grey	silty sand	occ charcoal		0.16		
9	1164	0	1	gully	boundary/irrigation?				0.19		linear	U shape
9	1165	1164	1	gully	disuse/unknown	dark brownish grey	silty sand	rare small subangular stones		0.1		
9	1166	0	1	gully	unknown/boundary/irrigation				0.26		linear	Ushape
9	1167	1166	1	gully	disuse/unknown	dark brownish grey	silty sand with lenses of olive brown	rare small subrounded stones, cess		0.09		
9	1168	0	1	pit	unknown/extraction				0.59		circular	flat based U shape
9	1169	1168	1	pit	unknown/disuse	dark greenish grey	silty sand	small occ subangular stones, unsorted		0.12		
9	1170	0	1	pit	unknown/extraction?				0.42		sub- circular	U shape
9	1171	1170	1	pit	unknown/disuse	dark brownish grey	silty sand	subangular stones unsorted rare		0.14		
9	1172	0	1	gully	irrigation/unknown?				0.43		linear	flat based U shape

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
9	1173	1172	1	gully	irrigation/unknown	dark brownish grey	sandy silt	rare sub angular stones unsorted. Lenses of cress		0.12		
9	1174	0	1	ditch	plot boundary?				0.94	0.32	linear	flat based U shape
9	1175	1174	1	ditch	disuse	dark brown grey	silty sand	occ charcoal, occ small subangular stones		0.32		
9	1176	0	1	pit	uncertain				0.82	0.14	sub-circular	shallow U shape
9	1177	1176	1	pit	disuse	dark brownish grey	fine sandy silt	Occ charcoal, occ small sub angular stones		0.14		
9	1178	0	1	pit	use				0.58	0.06	sub-circular	wide shallow U
9	1179	1178	1	pit	disuse	dark brown grey	silty sand	rare small stones, cressy lenses	0.25	0.06		
9	1180	0	1	gully terminus	irrigation/unknown				0.31		linear	U shape
9	1181	1180	1	gully terminus	disuse	dark grey brown	silty sand	rare, small, sub angular stones, cress lenses olive brown		0.2		
9	1182	0	1	ditch	plot boundary?				0.76	0.15	linear	U shape
9	1183	1182	1	ditch	disuse	dark brownish grey	silty sand	freg charcoal few small sub angular stones		0.15		
9	1184	0	1	ditch	plot boundary				0.78	0.2	linear	U shaped
9	1185	1184	1	ditch	disuse	dark brownish grey	silty sand	occ charcoal, occ small sub angular stones		0.2		
9	1186	0	1	ditch	plot boundary				0.39	0.14	linear	U shape
9	1187	1186	1	ditch	disuse	dark brown grey	silty sand	occ charcoal, few small sub angular stones		0.14		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
9	1188	0	1	post hole	structure				0.99	0.26	sub-circular	uneven based u shape
9	1189	1188	1	post hole	post packing/backfill?	dark brown grey	fine sandy silt	occ charcoal, occ small-med sub angular stones		0.26		
9	1190	0	1	ditch	plot boundary				1.76	0.3	linear	U shape
9	1191	0	1	ditch	slump	mid reddish brown	sand		0.16	0.02		
9	1192	0	1	pit	extraction/unknown				0.54		oval	U shape
9	1193	1192	1	pit	disuse	dark grey brown	silty sand	rare small sub angular stones, lenses of olive green cress		0.13		
9	1194	0	1	ditch	boundary				1.06	0.34	linear	wide open U
9	1195	0	1	ditch	slumping	mid reddish grey	sand	rare small stone	0.4	0.08		
9	1196	0	1	ditch	plot boundary?				0.62	0.29	linear	U shape
9	1197	1196	1	ditch	disuse	dark brown grey	silty sand	occ charcoal, occ small subangular stones		0.29		
9	1198	0	1	pit	uncertain				0.58	0.07	sub-circular	flat based U shape
9	1199	1198	1	pit	disuse	dark brown grey	fine sandy silt	occ charcoal few small subangular stones		0.07		
9	1200	0	1	pit	uncertain				0.34	0.04	sub-circular	shallow u shape
9	1201	1200	1	pit	disuse	dark brown grey	silty sand	occ charcoal, few small subangular stones		0.04		
9	1202	0	1	post hole	structure				0.38	0.12	sub-circular	u shape
9	1203	1202	1	post hole	backfill?	mid reddish brown	silty sand	rare charcoal, few small sub angular stones		0.12		
9	1204	1190	1	ditch	disuse	dark brown grey	silty sand	occ med subrounded flint, cress	0.76	0.28		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
9	1205	1194	1	ditch	disuse	dark grey	silty sand	rare small-med subangular flint, cress lenses				
9	1207	0	1	stone post packing	foundation	materials - limestone poss recycled	size - varying smallest approx 0.08m side, largest approx 0.2m side	finish - irregular some faced and squared off	0.57	0.2		
9	1208	0	1	pit/ditch terminus	processing pit/plot boundary?				1.9	0.67	sub- rectangu lar	asymetri cal u shape
9	1209	1208	1	pit/ditch terminus	disuse	dark brown grey with greenish mottling	silty sand	occ charcoal, occ small - med sub angular stones		0.27		
9	1210	1208	1	ditch	silting							
9	1211	1208	1	ditch	silting							
9	1212	0	VOID	levelling		red/white/ grey	silty sand mortar			0.65		
9	1213	0	VOID	surface (external)	floor					0.05		
9	1214	0	VOID	levelling		white/grey	mortar			0.28		
9	1215	0	VOID	wall	foundation							
9	1216	0	VOID	levelling		mid to dark grey	silty sand	CBM frags and gravel		0.5		
9	1217	1208	1	ditch	disuse	mid brown grey	silty sand	occasional charcoal and gravel inclusions		0.25		
9	1218	1208	1	ditch	disuse	dark reddish brown	organic silt	rare charcoal and gravel inclusions		0.07		
9	1219	0	1	buried soil	occupation	dark greenish grey	silty sand			0.36		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
9	1220	0	1	buried soil	occupation	dark greenish grey	silty sand			0.1		
9	1221	0	VOID	levelling		mid grey	sandy silt	occasional gravel inclusions		0.16		
9	1222	0	VOID	levelling		mid grey	sandy silt	rare gravel		0.32		
9	1223	0	VOID	levelling		mid grey	sandy silt	occasional CBM frags and gravel inclusions		0.64		
10	1224	1224	4.1	truncation								
9	1225	1208	1	ditch	disuse	mid greyish brown	silt	rare charcoal and occasional gravel inclusions		0.08		
9	1226	1226	1	pit	unknown					0.37	sub-circular	U-shaped
9	1227	1226	1	pit	disuse	mid brownish grey	sandy silt	occasional gravel inclusions		0.2		
9	1228	1226	1	pit	disuse	dark brownish grey	sandy silt	occasional gravel inclusions		0.17		
8	1229	1230	1	pit	disuse	dark to mid grey	silt sandy clay	small stones occ flint		0.7		
8	1230	0	1	pit	?					0.7	sub-circular	
8	1231	1232	1	pit	disuse	mid to dark grey	silty sandy clay	small occ stones		0.72		
8	1232	0	1	pit						0.72	sub-circular	
8	1233	1234	1	pit	disuse	mid grey	silty sand	occ small stones		0.4		
8	1234	0	1	pit	?					0.4		
9	1235	1208	1	ditch	silting	Mid Reddish-Brown	Peat	Occ. small sub-angular stones		0.04		
10	1237	0	4.1	wall	Building	Material: Red Brick	Size of materials: 100mm x		0.45	0.77		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
							70mm x 250mm					
10	1238	0	4.1	wall	Building	Materials: Red Brick	Size of Materials: 100mm x 70mm x 250mm		0.38	0.7		
10	1239	0	4.1	wall	Building	Materials: Brick	Size of Materials: 100mm x 70mm x 250mm		0.38			
10	1240	0	4.1	surface (internal)	Floor	Material: Chalk/Mort ar			0.18	0.08		
10	1241	0	4.2	masonry/surf ace	floor	mid brown grey	sand	large vertically stacked tiles	0.23	0.13		
10	1242	0	4.2	drain base	water management	brick	stretcher bond, 1 course	mortar	0.3	0.06		
10	1243	0	4.1	wall	Building	Materials: Red Brick	Size of Materials: 110mm x 60mm x 200mm		0.2	0.11		
10	1244	0	4.2	structure	Drain Base	Materials: Bricks	Size of Materials: 110mm x 0.70mm x 230mm		1.3	0.18		
10	1245	0	4.2	wall	Building	Materials: Bricks	Size of Materials: 110mm x 60mm x 240mm		0.5	0.92		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
10	1246	0	4.1	structure	Pillar base for a building.	Materials: Brick	Size of Materials: 230mm x 140mm x 60mm		0.66	0.23		
10	1247	0	4.1	structure	Brick pillar base for a building.	Materials: Brick	Size of materials: 140mm x 60mm x 230mm.	Coursing/Bond: Uncertain	0.66	0.18		
10	1248	0	4.1	wall	malting structure	brick		irregular coursing	0.33	0.5		
10	1249	0	4.1	wall	structure, maltings	red/yellow handmade brick	10*9*4mm	English bond	0.4	0.26		
10	1250	0	4.1	wall	structure, maltings	brick	12*25*6mm	irregular coursing	0.25	0.55		
10	1251	0	4.2	wall	Wall, drain culvert.	Materials: Brick	Size of Materials: 230mm x 120mm x 50mm	Coursing/Bond: Unclear	0.05	0.23		
10	1252	0	4.2	surface (external)	Yard	Mid brown- grey	Silty sand	Freq. large flint cobbles (cobbed surface), freq. small sub-rounded stones, occ. coal/charcoal.				
10	1253	0	4.2	wall	Wall and Pillar Base	Materials: Concrete and brick rubble	Size of materials: Rubble approx 30- 40mm		1	0.12		
10	1254	0	4.2	surface (internal)	Floor	Mid reddish- brown	Silty sand	Freq. small mixed sub- rounded and sun- angular stones. Occ. chalk flecks in places.				
10	1255	0	4.2	wall	Wall, drain culvert.	Materials: Brick	Size of materials:	Coursing/Bond: Unclear	0.43	0.07		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
							230mm x 120mm x 70mm.					
10	1256	0	4.2	surface (external)	Floor and pillar base.	Materials: Concrete and brick rubble	Size of materials: brick rubble approx 30- 40mm.					
10	1257	0	4.2	surface (internal)	Floor	Materials: Brick and concrete	Size of materials: 230mm x 100mm x 50mm		1.5	0.2		
10	1258	0	4.2	surface (internal)	Floor	Materials: Brick and concrete	Size of materials: No brick fully exposed		1.25	0.16		
10	1259	0	4.2	Levelling	Ground make-up	Dark brown-grey	Silty sand	Freq. small-medium sub-rounded stones, occ. coal flecks.				
10	1260	0	4.1	Backfill	Demolition layer?	Mid whitish- grey	Sandy silt	Frequent pieces of brick/tile, occ rubbles.	0.44	0.07		
10	1261	0	4.2	wall	Building	Materials: Red brick	Size of materials: 110mm x 60mm x 230mm	Coursing/Bond: 3 courses, English Bond	0.4	0.18		
10	1262	0	4.2	Culvert	Concrete Ducting	Materials: Concrete with concrete slab laid over.			1.24	0.06		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
10	1264	0	4.2	surface (internal)	Floor	Material: Concrete	Size of material: 2.65m x 2.00m x 0.02m.		2	0.02		
10	1265	0	4.2	surface (internal)	Floor	Materials: Brick and mortar	Size of materials: 250mm x 130mm x 60mm		2.9	0.06		
10	1266	0	4.1	wall	Building	Material: Red brick	Size of materials: 110mm x 60mm x 230mm	Coursing/Bond: 4 courses, English bond	0.56	0.28		
10	1267	0	4.1	wall	Building	Materials: Red brick	Size of materials: 230mm x 120mm x 50mm		0.23	0.14		
10	1268	0	4.2	wall								
10	1269	0	4.2	wall	Structure	Material: Red brick.	Size of materials: 115mm x 52mm x 250mm	Coursing/Bond: 3 courses, irregular bond.	0.25	0.2		
10	1270	0	4.1	structure	Pillar base for building.	Materials: Red brick	Size of materials: 230mm x 120mm x 80mm	Coursing/Bond: 5 courses, English bond.	0.61	0.08		
10	1271	0	4.2	wall	Building	Materials: Brick	Size of Materials: 110mm x 60mm x 230mm.	Coursing/Bond: 5 courses, English bond.	0.6	0.4		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
10	1272	0	4.2	wall	Building	Materials: Red brick	Size of materials: 70mm x 100mm x 250mm	Coursing/Bond: 10 courses, English bond.	0.24	0.68		
10	1273	0	4.2	wall	Building	Materials: Brick, concrete, rubble.	Size of materials: 230mm x 110mm x 70mm.		0.23	0.24		
10	1274	0	4.1	foundation trench	Wall foundation				0.34	0.12	linear	
10	1275	1274	4.1	foundation trench	Foundation backfill	Dark greyish-brown	Clayey silt	Frequent large CBM frags abd large flint cobbles	0.34	0.12		
10	1276	0	4.1	surface (external)	Levelling	Mid yellowish-brown	clayey silt	Frequent large CBM frags and flint cobbles	0.7	0.15		
10/tpB	1277	0	4.2	surface	?floor	light brownish yellow	sandy mortar	occasional small sub rounded stones				
10/tpB	1278	0	4.2	occupation	garden soil	mid grey brown	silty sand	Occasional small-medium sub-angular stones, occasional charcoal				
10	1279	0	4.2	surface (internal)	Levelling base for floor	Mid yellowish-brown	Mortar sand	Occasional coal and charcoal flecks	0.19	0.1		
10	1280	1286	4.2	levelling	Ground make-up?	Dark greyish-brown	Ashy sand	Occasional coal fragments	1.01	0.17		
10	1281	0	4.1	surface (internal)	Floor	Light brownish-yellow	Sandy mortar	Occasional small sub-rounded stones.	0.08	0.04		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
10	1282	0	4.1	Levelling	Ground make-up?	Mid greyish-brown	Silty sand	Occasional chalk and coal flecks, few small sub-rounded stones.	0.7	0.14		
10	1283	0	4.1	Levelling	Ground make-up	Mid greyish-brown	Silty sand	Occasional coal and chalk fragments, occasional clay lumps. Few small sub-rounded stones.	0.75	0.19		
10	1284	0	4.1	Levelling	Ground make-up?	Mid purplish-brown	Sandy ash	Frequent coal, few small sub-rounded stones.	1.09	0.2		
10	1285	0	4.2	Demolition Rubble	Levelling for floor.	Mid yellowish-brown	Sandy mortar	Frequent loose bricks	0.32	0.29		
10	1286	0	4.1	foundation trench	Wall foundation				0.14	0.24	linear	Not Ex.
10	1287	0	4.2	wall	Brick skin over stone wall	Material: Brick	Size of materials: 100mm x 50mm x 210mm	Course/Bond: 20 courses, English Garden.	0.1	1.45		
10	1288	0	4.1	Backfill	Levelling	Mid brownish-grey	Silty sand	Frequent small sub-angular stones, occasional brick fragments and lenses of mortar.	1	0.19		
10	1289	0	4.2	Backfill	Levelling	Dark reddish-grey	Silty sand	Frequent large brick fragments, mortar. occasional small sub-angular stones.	1	0.26		
10	1290	0	4.2	Backfill	Levelling	Dark brownish-grey	Silty sand	Occasional larger brick rubble, mortar. Occasional small sub-angular stones.		0.12		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
10	1291	0	4.2	Backfill	Levelling	Mid brownish-grey	Silty sand	Occasional medium-sized roof tile and brick.		0.09		
10	1292	0	4.2	Backfill	Levelling	Mid greyish-brown	Silty sand	Frequent clumps of medium-sized mortar.		0.34		
10	1293	0	4.1	structure	Foundation/Floor?	Mid brownish-grey	Silty sand	Frequent large sub-angular bricks.		0.18		
10	1294	0	4.1	Construction Layer	Levelling	Dark grey	Silty sand	Occasional small sub-angular stones and coal cinders.	0.55	0.08		
10	1295	0	4.1	foundation	Levelling	Mid greyish-brown	Sandy silt	Occasional small sub-angular stones		0.1		
10	1296	0	4.1	buried soil	Waste?	Dark greenish-grey	Clayey silt	Moderate charcoal, small CBM fragments and small gravels.		0.24		
10	1297	0	4.1	Rubble	Levelling	Dark greyish-brown	Sandy silt	Moderate small CBM fragments and occasional cobbles		0.36		
10	1298	0	4.2	pit	Unknown				0.35	0.42	sub-circular	U-shaped
10	1299	0	4.2	pit	Backfill	Light greyish-yellow	Sandy mortar	Frequent large brick rubble fragments and CBM.	0.35	0.42		
10	1300	0	4.2	wall	Building	Material: Red Brick	Size of materials: 52mm x 250mm x ?			0.86		
10	1301	0	4.2	Foundation	Construction	Dark greenish-grey	Clayey silt	Very frequent small gravels		0.24		
	1302	0	0	void	void							
10	1303	0	4.2	pit	Unknown				0.48	0.46	Not visible	

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
10	1304	1303	4.2	pit	Demolition backfill	Yellowish-brown	Sandy silt	Occasional small and medium pebbles, rare medium stones, moderate brick/tile fragments, some chalk.	0.48	0.46		
10	1305	0	4.2	pit	Unknown				0.91	0.58	Not visible	
10	1306	1305	4.2	pit	Backfill	Dark brown	Sandy silt	Rare small pebbles, charcoal flecks, brick/tile fragments. Occasional chalk.	0.91	0.58		
10	1307	0	4.1	Rubble	Demolition layer	Mid yellowish-brown	Sandy silt	Moderate tiles/brick, occasional small pebbles and chalk fragments.	0.12	0.4		
10	1308	0	4.1	surface (external)	Road/path?	Dark brown	Sandy silt	Frequent small pebbles	0.19	0.08		
10	1309	0	4.1	Demolition	Levelling	Mid yellowish-brown	Sandy silt	Occasional small pebbles. Frequent fragments of brick, tile and chalk.	0.12	0.13		
10	1310	0	4.1									
10	1311	0	4.1	surface (external)	Road?	Not excavated.			1			
10	1312	0	4.2	pit	Uncertain				0.07	0.1	Truncated	Flat-based U-shape
10	1313	0	4.2	pit	Backfill?	Dark grey	Sandy silt	Occasional small rounded and sub-angular stones.	0.07	0.1		
10	1314	0	4.2	surface (external)	Road/Trackway?	Mid brownish-grey	Sandy silt	Frequent large and medium angular, sub-rounded, and rounded stones.	0.15	0.1		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
10	1315	0	4.2	Construction	Levelling	Mid reddish-yellow	Sand	Rare small round pebbles	0.21	0.12		
10	1316	0	4.1	Construction	Levelling	Dark brownish-grey	Silty sand	Frequent small rounded pebbles	0.21	0.07		
10	1317	0	4.1	surface (external)	Trackway?	Mid whitish-grey	Silty chalk	Frequent small to medium rounded stones and pebbles.	0.6	0.07		
10	1318	0	4.2	foundation trench	Construction of wall				0.26	0.3	linear	Flat-based U-shape?
10	1319	1318	4.2	pit	Backfill	Mid greyish-brown	Sandy silt	Rare small stones	0.26	0.3		
10	1320	0	4.2	Demolition	Backfill	Mid grey	Sandy silt	Frequent CBM fragments and large angular rocks.	1	0.24		
10	1321	0	4.2	wall	Building	Material: Stone and mortar	Size of material: approx 200mm x 150mm	Finish of stones: Unfaced, some rounded or smooth suggests re-use from floor or road?				
10	1322	0	4.1	surface (external)	Road?	Mid greyish-brown	Silty sand	Frequent small-medium sub-rounded stones. Occasional charcoal/coal.	1			
10	1324	0	4.1	surface (external)	Road?	mid brownish-grey	silty sand	Very frequent small sub-rounded gravels	0.2	0.1		
10	1325	0	4.1	surface (external)	Road?	Light brownish-grey	Sandy mortar	Frequent small sub-rounded stones.	0.15	0.07		
10	1326	0	4.2	foundation trench	Wall foundation.				0.23	0.23	linear	Half U-shaped

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
												excavated
10	1327	1326	4.2	foundation trench	Backfill	Mid brownish- grey	Silty sand	Frequent small sub- rounded gravels	0.23	0.23		
10	1328	0	4.2	Levelling	Ground make-up	Mid brownish- grey	Silty sand	Frequent small-medium sub-rounded stones. Occasional coal/charcoal	0.15	0.24		
10	1329	0	4.2	Levelling	Ground make-up	Light yellowish- brown	Chalky sand	Frequent small-medium chalk lumps and sub- rounded stones.	0.27	0.3		
10	1330	0	4.2	pit	Extraction/Robbing?				0.71	0.59	sub- circular	Flat- based U- shape.
10	1331	1330	4.2	pit	Backfill/Disuse	Dark brownish- grey	Silty sand	Frequent chalk flecks, occasional charcoal and small sub-rounded stones.	0.77	0.59		
10	1332	0	4.1	Levelling	Ground-make up.	Dary reddish- grey	Sandy silt	Frequent small coal fragments and some gravel.		0.12		
10	1333	0	4.1	Levelling	Ground make-up.	Mid brownish- yellow.	Sand			0.04		
10	1334	0	4.1	Demolition	Demolition	Mid greyish- brown	Clayey silt.	Frequent small CBM fragments.		0.32		
10	1335	0	4.1	Levelling	Ground make-up	Dark purplish- grey	Silty sand	Moderate small coal fragments and gravel.		0.09		
10	1336	0	4.1	foundation trench	Pillar Foundation.				0.9	0.47	rectangu lar	Flat- bottomed U- shape

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
10	1337	1336	4.1	foundation trench	Backfill	Light whitish- grey	Sandy mortar	Some large and small CBM fragments.	0.9	0.47		
10	1338	0	4.2	foundation trench	Building foundation.				0.6	0.5	Unclear	
10	1339	1338	4.2	foundation trench	Backfill	Dark brownish- grey	Sandy silt	Some small CBM fragments and moderate mortar patches.	0.6	0.5		
10	1340	0	4.2	pit	Construction?				0.6	0.35	Unclear	U- shaped.
10	1341	1340	4.2	pit	Backfill	Mid yellowish- grey	Silty sand	Moderate CBM fragments and stones.	0.6	0.35		
10	1342	0	0									
10	1343	0	4.1	Demolition	Demolition Backfill	Mid brownish- grey	Sandy silt	Frequent small flecks of chalk, occasional large brick fragments	1.1	0.21		
10	1344	0	4.1	Demolition	Demolition Backfill	Mid brownish- grey	Silty sand	Occasional large brick fragments and medium chalk lumps. Frequent small chalk with mortar.		0.3		
10	1345	0	4.1	Demolition	Demolition backfill	Dark greyish- brown	Sandy silt	Frequent charcoal, chalk, and mortar flecks. Occasional small sub-angular stones.		0.12		
10	1346	0	4.2	Demolition	Demolition backfill	Light brownish- grey	Silty sand	Occasional small sub- angular stones. Layer predominantly formed of mortar.		0.04		
10	1347	0	4.2	structure	Wall	Material: Brick	Size of materials: 100mm x 70mm x 230mm		0.35	0.15		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
10	1348	0	4.2	structure	Wall	Material: Brick	size of materials: 120mm x 50mm x 250mm		0.12			
10	1349	0	4.1	surface	construction	yellow orange	sand	small gravel particles, occasional small stones		0.1		
10	1350	0	4.1	clay	capping	yellow	clay	occasional small stones		0.18		
10/11	1351	0	3	cess	dumping	dark grey green	sandy silt	very occasional stone		0.2		
10	1352	0	4.2	structure	wall	Materials: Brick	Size of materials: 100mm x 70mm x 250mm		0.53			
10	1353	0	4.1	Demolition	Demolition backfill	Greyish- brown	Silty sand	Frequent tile, brick, and mortar fragments.	1	0.1		
10	1354	0	4.2	pit	Unknown				0.14	0.4	Unclear	
10	1355	1354	4.2	pit	Backfill	Yellowish- Brown	Sandy Silt	Occasional small stones, frequent mortar, rare bricks/tiles.	0.14	0.4		
10	1356	0	4.2	pit	Unknown				0.05	0.21	Unclear	
10	1357	1356	4.2	pit	Backfill	Dark greyish- brown	Sandy silt	Rare small stones and brick/tile fragments.	0.05	0.21		
10	1358	0	4.2	pit	Unknown					0.28	Unclear	U- Shaped
10	1359	1358	4.2	pit	Backfill	Mid brown	Sandy silt	Frequent brick fragments, moderate small stones and mortar flecks		0.28		
10	1360	0	4.1	Levelling	Ground make-up	Dark reddish- brown	Sandy silt	Occasional small brick/tile fragments, rare small stones,	1	0.46		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
								frequent flecks of mortar				
10	1361	0	4.1	Dumped soil	Rubbish tipping	Dark grey	Sandy silt	Frequent charcoal	0.36	0.02		
10	1362	0	4.1	Levelling	Ground make-up	Yellow	Sandy gravel	Frequent small stones/pebbles	0.08	0.07		
10	1363	0	4.1	Levelling	Ground make-up	Dark brown	Sandy silt	Moderate fragments of brick/tile, some stones and mortar	1	0.05		
10	1364	0	4.1	levelling	Ground make-up	Light yellowish-brown	Sand	No inclusions		0.11		
10	1365	0	4.1	Foundation	Ground make-up for foundation.	Light blueish-grey	Silty clay	Occasional small sub-rounded stones.		0.1		
10	1366	0	4.1	Demolition	Backfill	Mid brownish-grey	Silty sand	Occasional medium-sized brick fragments, frequent small sub-angular stones.		0.13		
10	1367	0	4.2	Demolition	Backfill	Mid brownish-grey	Silty sand	Frequent large brick fragments and medium sub-angular stones.		0.51		
10	1368	0	4.1	Levelling	Backfill	Dark greyish-brown	Sandy silt	Occasional medium sub-angular stones, mortar, and medium-sized brick fragments.		0.1		
10	1369	0	4.1	Demolition	Backfill	Light brownish-grey	Silty sand	Frequent medium sub-angular stones, mortar fragments, and large brick fragments.		0.18		
10	1370	0	4.2	Levelling	Ground make-up	Light brownish-yellow	Silty sand	Frequent small gravels	0.55			
11	1371	0	4.1	wall	boundary	red brick	110*62*230 mm		0.36	0.42		
11	1372	0	4.1	kiln	Malting Kiln	Material: Red brick	Size of materials:	Coursing/Bond: 4 courses, English	2.26	0.44		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
							110mm x 60mm x 230mm					
10/11	1373	0	0									
10/11	1374	0	4.2	wall	building	red brick	230*110*50 mm		0.18	0.6		
11	1375	0	4.2	wall	Building	Materials: Brick and mortar	Size of materials: 230mm x 100mm x 60mm	Coursing/Bond: Unclear, rendered face	0.32	0.55		
10/11	1376	0	4.3	drain	water management	red brick	110*70*230 mm		1.15			
11	1377	0	4.2	wall	Building	Material: Red brick	Size of materials: 240mm x 110mm x 40mm		0.4	0.25		
11	1378	0	4.1	wall	building	brick	L:235mm, W; 110mm, H; 55mm	regular coursing, English bond	0.55			
11	1379	0	4.1	surface	floor	brick	130*40*240 mm	stretcher bond 1 course	0.28	0.04		
10/11	1380	0	VOID	wall	boundary	bricks	110*50*230 mm	appears as English garden(very deformed)				
11	1381	1381	4.3	linear trench	dainage channel						linear	
11	1382	1382	4.3	linear trench	Drainage Channel						linear	
11	1383	1383	4.3	ditch	drainage						linear	
11	1384	0	4.2	pit	Unknown				0.72	0.33	Unclear	U-Shaped
11	1385	1384	4.2	pit	Backfill	Mid yellowish-grey	Sandy silt	Occasional small stones and brick/tile fragments, frequent mortar fragments	0.72	0.33		
11	1386	0	4.1	Levelling	Ground make-up	Whitish-yellow	Sand and mortar	Frequent bricks and tiles	2.26	0.3		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
11	1387	0	4.1	Levelling	Ground make-up?	Whitish-yellow	Sand and mortar	Moderate brick/tile, moderate pieces of mortar and ash.	2.26	0.21		
11	1388	0	4.1	surface (internal)	Floor	Dark orange	Mortar	Bricks, 110mm x 60mm x 230mm	1.45			
11	1389	0	4.1	Demolition	Backfill	Dark brown	Sandy silt	Frequent brick/tile fragments and pieces of mortar, moderate small stones, rare charcoal fragments.	3	0.4		
11	1390	0	4.2	surface	?floor or foundation base	light brownish yellow	sandy mortar	occasional small sub-rounded gravels				
11	1391	0	4.2	wall	building	Red brick	230*110*50	?English bond	0.34	0.45		
10	1392	0	VOID	wall	building	Red brick	single stretcher course surviving	mortared				
11	1393	0	4.2	surface	?floor	mortar			0.32	0.05		
11	1394	0	4.1	buried soil	Clay capping?	Mid greyish-brown	Clay	Moderate medium-large CBM and brick rubble.		0.24		
11	1395	0	4.1	Levelling	Demolition levelling?	Dark brownish-grey	Sandy silt	Moderate medium-large CBM.		0.3		
11	1396	0	4.1	foundation trench	Wall foundation				0.35	0.55	linear	
11	1397	1396	4.1	foundation trench	Bedding layer	Mid yellow	Sand			0.02		
11	1398	1396	4.1	foundation trench	Backfill	Mid reddish-brown	Sandy silt	Frequent small to large brick rubble and CBM.		0.55		
11	1399	0	4.1	wall	Building	Materials: Red brick	Size of materials: 120mm x	Coursing/Bond: 8 courses. Flemish Garden?	0.25	0.55		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
							60mm x 250mm					
11	1400	0	4.2	wall	Building	Materials: Red Brick	Size of materials: 110mm x 60mm x 230mm	Coursing/Bond: 4 courses, irregular bonding.	0.25	0.31		
11	1401	0	4.2	Demolition	Levelling?	Yellowish- brown	Sandy silt	Frequent fragments of brick/tile, moderate mortar fragments.	0.5	0.2		
11	1402	0	4.2	Burnt Material	Ash from kiln?	Very dark grey.	Sandy silt	Frequent fragments of charcoal	0.25	0.16		
11	1403	0	4.2	levelling	demolition	Mid Yellow Brown	Sandy Silt	Moderate fragments of Brick and Tiles, moderate mortar, rare small stones	0.4	0.23		
11	1404	0	4.2	Levelling	Ground Make-Up	Dark Brown	Sandy Silt	Moderate Fragments of Bricks/Tiles, Moderate Pieces of Mortar	0.3	0.16		
11	1405	0	4.2	surface (internal)	Floor	Mid Yellow Grey	Sandy Mortar	Frequent Mortar	0.17	0.03		
11	1406	0	4.2	surface (external)	Floor	Pale Red Brown	Mortar	Red Bricks: 110mm x 60mm x 230mm	0.7	0.06		
11	1407	0	4.2	surface (external)	Floor	Mid red brown	Mortar	Red Bricks	0.28			
Void	1408	0	0	Void	Void	Void	Void	Void				
11	1409	0	3	buried soil	Occupation	Dark Brown Grey	Silty Sand	Coal and Charcoal, small - medium sub- oval and sub rounded stones	1	0.38		
11	1410	0	4.1	wall	well	brick	200*50*100 mm	regular coursing, header bond, occasional stretcher	2.9	0.25		
11	1411	0	4.1	wall	?roof of well	brick	230*65*105 mm	where sloped =regular coursing		0.23		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
11	1412	0	4.1	rubble	levelling	yellowy brown	sandy silt	frequent fragments of brick, tiles/ moderate small pebbles, some fragments of mortar		0.37		
11	1413	0	4.1	surface (external)	yard	dark brown grey	sand mortar	frequent pebbles		0.12		
11	1414	0	4.1	cobbled surface	?yard	mid brown	sandy silt	rare fragment of bricks/tiles, moderate cobbles 0.12m diameter		0.14		
11	1415	0	4.1	cobble surface	yard	mid brown	sandy silt	frequent cobbles, 0.12m	0.12			
11	1416	0	4.1	charcoal	malting layer?	black grey	silt	frequent charcoal		0.04		
11	1417	0	4.1	LEVELLING	malting layer/construction	dark brown	sandy silt	occasional flecks and fragments of charcoal, brick and tile		0.21		
11	1418	0	4.1	rubble	levelling	mid brown yellow	sandy mortar	frequent fragments of brick/ tile		0.22		
11	1419	0	4.1	buried soil	? Older garden soil	dark brown	clayey silt	rare small stones, rare flecks of charcoal		0.15		
11	1420	0	4.1	wall	?water management	brick	110*50*220 mm	English cross and English bond	0.36	0.76		
11	1421	0	4.2	wall	furnace/kiln room	brick	0.24*0.11*0 .06mm	fairly regular finish	0.78	0.12		
11	1422	1421	4.2	structural	floor	dark brown grey	silty sand	brick	0.78			
11	1423	1421	4.2	backfill	demolition	mid brown grey	sandy silt	frequent brick, tile and masonry	0.64	0.4		
11	1424	1410	4.1	well	backfill	brownish yellow	sand	occasional flint cobble/frequent bricks		1.5		
11	1425	1425	4.2	pit	?packing				0.2	0.24	linear	
11	1426	1425	4.2	pit	packing	light grey	silty clay	rare small sub-rounded stones		0.25		
11	1427	0	4.1	backfill	demolition	light brown grey	silty sand	medium sub angular stones, frequent occasional brick		0.3		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
								medium sized and poorly sorted				
11	1428	0	4.1	Backfill	Demolition	Dark, brown grey	Silty sand	Very fine, rare, small sub-angular stones. Heavy charcoal.		0.04		
11	1429	0	3	Backfill	Demolition	Dark brown gray	Silty sand	Occ. Small fragments of red brick. Rare sub-rounded stones. Frequent charcoal inclusions.		0.21		
11	1430	0	2	buried soil	Demolition	Dark grey brown	Sandy silt	Rare, sub-angular, medium size stones		0.14		
11	1431	0	4.1	Backfill	Demolition	Mid grey brown	Sandy silt	Freq. small, sub-angular stones.		0.4		
11	1432	0	3	Backfill	Demolition	Dark grey brown	Sandy silt	Small, rare, sub-rounded stones, freq. charcoal		0.29		
11	1433	0	4.1	wall	Structure				3	0.215		
11	1434	0	4.1	wall	structure				0.55			
11	1435	0	4.1	drain	water management				0.11	0.34		
11	1436	1435	4.1	Drain	Silting	Mid brown grey	Silty sand	Occ. Coal, freq. brick fragments	0.12	0.66		
11	1438	0	4.1	floor	Surface	Mid reddish brown	Mortar, silt and sand	Red brick				
11	1439	0	4.1	wall	Structure	brick						
11	1440	0	4.1	wall	Structure	Dark blackish brown	Silty sand	Freq. small-med. Sub-angular flint and pebbles.		0.25		
11	1441	0	2	buried soil	levelling	Dark grey	Sandy clay silt	Occ. Small stones. Occ. Small pieces of CBM		0.3		
11	1442	0	2	surface (external)	Mottled surface			Cobble and stone. Occ. CBM frags.				
11	1443	0	4.2	wall	Boundary				0.12			
11	1444	0	4.1	wall	Structure				0.12	0.12		

Test Pit/ Trench/ Area	Cxt.	Cut	Phase	Feature Type	Function	Colour	Fine component	Coarse component	Breadth	Depth	Shape in Plan	Profile
11	1445	0	3	surface (external)	Yard surface	Mid grey brown	Silty sand	V. req. med-large sub- round stones/compacted clay lumps.	1	0.24		
11	1446	0	4.1	wall	Cellar				0.85	0.23		
11	1447	0	4.1	wall	Structure				0.5	0.23		
11	1448	0	4.2	structure	Backfill	Dark grey brown	Silty sand	Occ. Coal fragments, occ. Brick and tile lumps.	0.7	0.9		
11	1449	0	3	buried soil	Occupation/Garden	Dark brown grey	Silty sand	Occ. Charcoal, and small-med sub-ang stones.	0.6	0.7		
11	1450	0	2	buried soil	Disuse	Dark grey brown	Sandy silt.	Occ. Med. Sub-rounded stones/cobbles.		0.16		
11	1451	0	4.2	Backfill	Demolition	Light grey brown	Silty sand	Freq., sub-angular, med, stones, and fragments of CBM and brick				
10	1452	0	3	buried soil	Disuse	Mid reddish brown	Silty sand	Occ., small, sub- angular, stones. Freq. mid-large charcoal.		0.15		
10	1453	0	2	buried soil	Disuse	Dark brown grey	Sandy silt	Small, freq., sub- angular stones		0.22		
10	1454	0	4.1	surface (external)	Yard floor	Light reddish brown		Red brick, frequent, organised in reg. pattern		0.18		
11	1455	0	4.1	surface (external)	Yard	Dark brown grey	Silty sand	V. freq. small, sub- rounded pebbles				
10	1456	0	4.1	surface (external)	Yard	Mid grey brown	Silty sand	V. freq., med-large sub- rounded stones.				
10	1457	0	2	buried soil	Garden	Dark brown grey	Silty sand	Occ. Charcoal				
10	1458	0	4.1	wall	Foundation							
11	1459	0	VOID						0.27	0.18		

Table 19: Context inventory

APPENDIX B FINDS REPORTS

B.1 Coins

By Denis Sami

Introduction

B.1.1 Excavations produced an assemblage of 11 coins and one jetton recovered from archaeological features including pits, layers and a ditch as well as from topsoil. The assemblage consists of four silver (Ag) coins and eight copper-alloy (CuA) issues. The chronology of these items spans the Romano-British period to the late 17th century. This small assemblage provides some tentative evidence to help address some of the project's research questions, notably in terms of elucidating themes such as economy and trade within the environs of the excavated area.

Alloy	Total
Ag	4
CuA	8
Total	12

Table 20: Quantification of the coins and jetton by alloy

B.1.2 Despite the oxidation due to the adverse condition of the soil and with just one exception (SF 155), all coins were identified to type, and a full summary catalogue is presented in Table 23.

Methodology

B.1.3 Volume II of the *Roman Imperial Coinage* was used in the identification of Roman coin SF 135. The Late Anglo-Saxon penny of Aethelweard was identified using Rory Naismith, *The Coinage of Southern England* (2011). This coin was subsequently catalogued in the Corpus of Early Medieval Coins of the Fitzwilliam Museum (EMC number : 2022.0240, <https://emc.fitzmuseum.cam.ac.uk/full-record/20220240>).

B.1.4 Jeffrey North second volume of the *English Hammered Coinage* (1991) was used in the identification of the post-medieval group. Coins belonging to the early modern era were identified according to the *Coins of England and The United Kingdom* catalogue by Spink (2022).

B.1.5 The catalogue of post-medieval jettons published by Mitchiner (1988) was the main reference in the identification of jetton SF 25.

B.1.6 Coins were quantified using an access database. A single Excel spreadsheet was used to enter details and measurements of each single coin. The catalogue is organised by context number and a summary catalogue is included below.

Factual data

B.1.7 Most of the coins were recovered from layers, a ditch, a pit and a brook also produced one coin each (Table 21).

Feature	Count
brook	1
drain	1
layer	9
pit	1
Total	12

Table 21: Distribution of coins and jetton by feature type

B.1.8 The majority of coins from phased contexts were recovered from post-medieval to modern features attributed to Periods 4.1 and 4.2 (Fig. B.1.1).

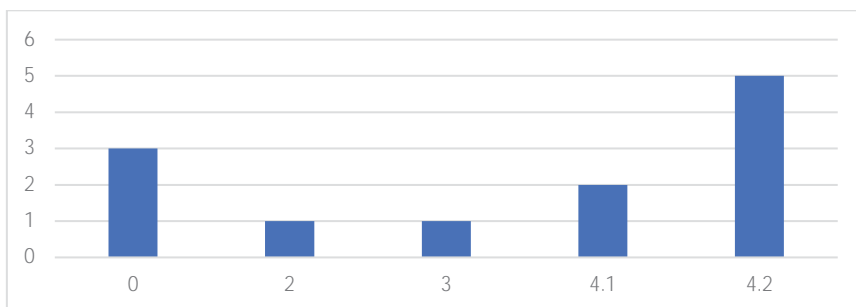


Fig. B.1.1: Quantity of coins by phase

B.1.9 The earliest identified coin is a copper-alloy sestertius of Trajan minted between AD 103 and 111 (SF 135) to celebrate the conquest of Tracia. The latest is a halfpenny of William III dating to the period between 1699 and 1701 (SF 134).

B.1.10 A silver penny of Aethelweard (c.880–c.922) minted by moneyer Twicga recovered from brook 507 (SF 6) is a rare issue (Plate B.1.1). Naismith lists seven types of this coin (2011, vol. 2, 366-7, type E53.1) and he suggests they were possibly all minted in Ipswich.

B.1.11 All post-medieval/modern coins are heavily worn indicating they were part of an intense exchange activity and/or remained in circulation for some time.

B.1.12 The Rose/orb jetton (SF 155) dating to the period between 1586 to 1635 is a well know and widely used type (Mitchiner 1988, 441, number 1538)

Authority	No. Coin
Trajan	1
Aethelweard	1
Elizabeth I	2
Charles I	3
Charles II	1
William III	2
Illegible	1
Total	11

Table 22: Quantification of coins by ruler

Catalogue

Cxt	Cut	SF	Feature	Site Phase	Coin Phase	Denomination	Alloy	Min Date	Max Date	Authority	Wgt (g)	Diam
507	0	6	brook	0	1	Penny	Ag	880	922	Aethelweard	1.08	21.2
1043	0	113	layer	4.2	3	Halfgroat	Ag	1558	1603	Elizabeth I	0.8	17
1259	0	133	layer	4.2	3	Halfpenny	CuA	1672	1672	Charles II	6.2	22
1259	0	135	layer	4.2	Roman	Sestertius	CuA	103	111	Trajan	23	31.5
1288	0	134	layer	4.1	3	Halfpenny	CuA	1699	1701	William III	8.5	28
1436	1435	149	drain	4.1	3	Shilling	Ag	1689	1699	William III	2.4	20
1449	0	154	layer	3	3	Rose Farthing	CuA	1625	1634	Charles I	0.9	14
1451	0	155	layer	4.2	3	Un-id.	CuA	1600	1700	illegible	0.4	9
1451	0	150	layer	4.2	3	Halfgroat	Ag	1562	1569	Elizabeth I	0.8	17
99999	0	106	layer	0	3	Rose Farthing	CuA	1625	1634	Charles I	0.7	13.5
99999	0	25	layer	0	3	Rose/Orb jetton	CuA	1586	1635	Hans Krauwinckel II	1.4	25
99999	0	13	pit	2	3	Farthing	CuA	1625	1634	Charles I	0.6	17

Table 23: Summary catalogue of coins

Discussion

- B.1.13 This is a very small assemblage, and it is mostly formed of modern issues. Given the recent chronology of the recovered types, this assemblage cannot be directly compared with other groups of coins recently excavated in Ipswich, as for example the assemblage from Stoke Quay (Popescu and Gaimster 2020) which is nearly entirely composed of Middle Anglo-Saxon issues.
- B.1.14 The Roman coin (SF 135) was found in a layer belonging to modern Period 4.2, and therefore it is a residual item that cannot provide any valid contribution to the project's research questions.
- B.1.15 A low degree of coin loss possibly due to monetary exchange is documented in the Late Anglo-Saxon period. The silver penny (SF 6) of Aethelweard offers a valuable contribution in terms of the possible confirmation of Ipswich being the origin for this type of coin.
- B.1.16 Interestingly, a small folding balance (SF 102, see App. B.3) was recovered from Period 1 layer 1041. Such items were used to weigh coins and this example – together with the Aethelweard penny – perhaps supports the idea of some sort of trade activity taking place in the area during the Late Anglo-Saxon period.
- B.1.17 A change in land-use around Lower Brook Street may have been behind the lack of medieval coinage from the site. However, an increase in the presence of issues from the reign of Elizabeth I up to the time of William III seems to suggest the area once again became a place of (albeit low-level) monetary exchange during the post-medieval to early modern period.



Plate B.1.1: Coin of Aethelweard of East Anglia

B.1.18 The Rose/orb jetton dating to 1586–1635 found in the unstratified overburden provides further tentative evidence for a slight intensification of trade between the late 16th and late 17th century.

B.2 Lead tablet

By Martin Findell (University of Nottingham)

Introduction

B.2.1 This small lead plaque is a valuable addition to the corpus of similar objects with runic inscriptions, found in Norfolk, Cambridge and Lincolnshire (Hines 2019). The inscription is a close parallel to a plaque found by a detectorist near Fakenham in Norfolk, and can be translated as “[a/the] dwarf is dead”, which is likely to be (part of) a charm to protect against or cure illness.

Methodology

B.2.2 The plaque was examined by the author of this report and by Jasmin Higgs, a PhD researcher at the University of Nottingham, initially using hand magnifiers and lamps. High resolution images were taken with cameras and the assistance of staff at the University’s Digital Transformations Hub (DTH).

Description

B.2.3 The plaque is a flat, roughly rectangular piece of lead, approximately 2 x 1.5 cm in size, with runes incised on one side. The characters are consistent in height and evenly spaced (c.0.01m), and were most likely cut with a fairly sharp tool such as the tip of a small knife. At the edges of the cuts the metal is raised, creating a sort of furrow. This may indicate that the tool was less sharp than those used on most of the other plaques described and photographed by Hines, which have finer lines and no “furrow”. The plaque from “near March” (Norwich Castle Museum, NWHCM2010.112) does appear to have cuts with a similar profile.

B.2.4 The reverse side bears scratches and signs of wear, but no marks resembling written characters are visible.

Translation and interpretation

Transrunication, transliteration, transcription and translation

B.2.5 Seven characters are visible, most of them quite clearly legible with the naked eye. Those which are fainter become more clearly visible when the light source is moved (Figs B.2.1–4, below). They can be read with confidence as follows:

d6diSdW

deadisdw[

Old English transcription: *dēad is dw[*

Translation: “Dead is *dw-*”

B.2.6 Higgs (pers. comm.) noticed the similarity to another plaque found near Fakenham in Norfolk and reported by Hines (see below). Its inscription, arranged around two sides of one face, reads: **deadisdw/erg**, “dead is dwarf”, or “The dwarf is dead”. It seems highly likely that the Ipswich plaque contains a partially preserved form of the same text, and **dw[** represents the beginning of Old English *dwe(o)rg*, “dwarf”. The form *dweg* would be regular in “Anglian” dialects of OE, and cognate with the “standard” West Saxon form *dweorg* (cited as the headword in dictionaries and handbooks); see Hines (2019:37, 40) for more detail on the phonological and orthographical variants.

Images

B.2.7 Appendix Figs B.2.1–3 show the inscription with varying angles of incident light to show the incised marks more clearly. Appendix Fig. B.2.4 shows the back of the object. All photographs taken by Jasmin Higgs using equipment from the Digital Transformations Hub, University of Nottingham.



Fig. B.2.1: Front with inscription



Fig. B.2.2: Front with inscription



Fig. B.2.3: Front with inscription



Fig. B.2.4: Back

Discussion

B.2.8 References to *dwe(o)rg* ~ *dwe(o)rh* "dwarf" appear in a number of Old English medical texts, where it seems to denote a serious illness, possibly associated with seizures, paralysis and/or tightness of the chest. In the 11th-century medical collection known as *Lacnunga* (British Library, MS Harley 585, ff 130r-193r), a recipe for treating this condition includes a metrical charm which describes the *dweorh* as a creature who claims the patient as his horse and harnesses them, until his sister puts an end to his mischief. For a more detailed discussion of the remedies against a *dweorg*, and a possible parallel in an Old Norse runic inscription on a skull fragment from Ribe in Denmark (DR EM85;151B. Object URL: <http://kulturarvsdata.se/uu/srdb/a2c48695-7f96-4515-8d68-9e6f3e84bc86>) see Hines (2019, 36–40).

Parallels

B.2.9 Hines's account of lead plaques bearing runic inscriptions includes five objects:

1. "Near Fakenham", Norfolk (PAS NMS-63179C)
2. March, Cambridgeshire (Norwich Castle Museum NWHCM:2010.112)
3. Shropham, Norfolk (Norwich Castle Museum NWHCM:2004.37)
4. Scotterthorpe, North Lincolnshire (North Lincolnshire Museum SRAN NOLMS: 2005.106)
5. St Benet's, Norfolk (Norwich Castle Museum NWHCM:2003.54)

B.2.10 The surviving fragments are of comparable size with the one from Ipswich, being roughly 3-4 cm to a side. Two of them (Shropham and St Benet's) are folded, and would be rather larger when laid flat. Three of the five ("near Fakenham", Shropham, St Benet's) are pierced by a round hole indicating that they were probably affixed to some

other object. The March plaque has an irregular hole which may have been a similar nail-hole, distorted when the plaque was torn from whatever it was fixed to.

- B.2.11 The inscriptions seem to relate in one way or another to the use of charms and prayers. The “dwarf”-charm on the “near Fakenham” plaque is described above. The March and Scotterthorpe plaques bear prayers in Latin, the former accompanied by the names of the Evangelists. Shropham carries a memorial inscription dedicated to the souls of three named individuals (although only one of the names, Almund, is legible); the memorial formula is similar to those found on a number of stone monuments, mostly in the north of England (Findell and Kopár 2017, 126–128).
- B.2.12 The St Benet’s inscription appears to be nonsense (or at any rate, does not contain any identifiable language), and is written with a mixture of English and Scandinavian runes. Other “nonsense” inscriptions are found in late Viking-period and medieval Scandinavia, and are generally interpreted as having some sort of protective function (Hines 2019, 51).
- B.2.13 Taken together, this group of plaques appears to be associated with one form or another of what Flowers (2006) calls “operative communication”: that is, communication with a divine or supernatural addressee, which is intended to have some effect on the world, whether this might be for the healing of the sick, protection from harm, or prayers for the salvation of the deceased. The object discussed here expands this small but intriguing corpus of material and offers valuable insight into the culture and writing practices of people in early medieval England.

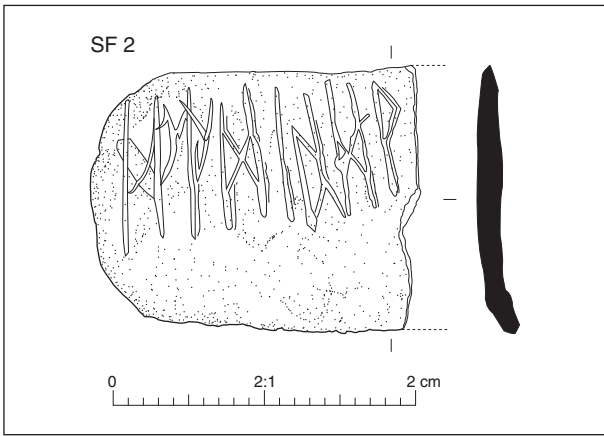


Figure B.2.1: Lead curse

B.3 Metalwork

By Denis Sami

Introduction

- B.3.1 The metalwork assemblage consists of 65 artefacts recovered from topsoil, layers, pits and from a brook (Table 24). The assemblage comprises copper-alloy (CuA), iron (Fe) and lead (Pb) artefacts.
- B.3.2 The bulk of the assemblage dates to the medieval and post-medieval periods with a few artefacts of Late Anglo-Saxon–Saxon-Norman date, and two items are of uncertain chronology.
- B.3.3 In accordance with Crummy’s functional categories (1983), the metalwork includes objects related to dress accessories, fittings, household equipment, weighing and measuring, militaria and ‘unidentified to type’ (miscellaneous).
- B.3.4 The general preservation of finds is poor with iron artefacts presenting heavy encrustation, mineralisation of soil and fragmentation. Lead and copper-alloy objects show patina and oxidation; however, this did not affect– identification of the artefacts.

Metal	No. Artefact	% No. Artefact
CuA	26	40%
Fe	19	29%
Pb	19	29%
Pewter	1	2%
Total	65	100%

Table 24: Quantification of artefacts by metal

Methodology

- B.3.5 The metalwork was examined in accordance with the OA East metalwork finds standard based on the guidance of the Historical Metallurgy Society (HMS Datasheets 104, Dungworth 2012 and 108, Davis and Starley 2012), the *Historic England Archaeometallurgy Guidelines for Best Practice* (Bayley *et al.* 2015) and the *English Heritage/Historic England Guidelines for the Storage and Display of Archaeological Metalwork* (Rimmer *et al.* 2013).
- B.3.6 The catalogue of household equipment by Egan (2010) and the volume dedicated to medieval dress accessories by Egan and Pritchard (2002) were used as the main reference in the description and discussion of finds. These were integrated with the research by Rosie Weetch (2014) into Late Anglo-Saxon brooches to find parallels for the artefacts. The catalogue of Anglo-Scandinavian metalwork from Coppergate in York by Mainman and Rogers (2000) acted as reference for the Mid to Late Anglo-Saxon items with particular attention to the small balance steelyard SF 102. The discussion about SF 102 was further expanded in the light of Susan Kruse’s paper regarding balances and weights from England (1992). The catalogue of artefacts from The Portable Antiquities Scheme, was also used for comparison and to expand the discussion about the assemblage.

B.3.7 The material was classified according to Crummy’s 1983 categories. The items were catalogued, and the details are presented at the end of this section in three tables: copper-alloy artefacts (Table 28), iron artefacts (Table 29), and lead and lead-alloy artefacts (Table 30).

B.3.8 Finds were quantified using a Microsoft Access database, while a single Microsoft Excel spreadsheet was used to enter details and measurements of each artefact. This database was interrogated to compile statistics. All metal finds were counted, weighed where relevant and classified on a context-by-context basis. The catalogue is organised by context number.

The assemblage

B.3.9 Dress accessories and fittings represent the bulk of the assemblage, followed by household equipment (Table 25). This is in line with other contemporary urban assemblages such as, for example – on a larger scale – Ipswich Stoke Quay (Brown et alii 2020), or London (Cowie et al. 2012 and Malcolm and Bowsher 2003).

Row Labels	No. Artefact	% No. Artefact
Dress accessories	18	28%
Fittings	10	15%
Household equipment	5	8%
Militaria	3	5%
Miscellaneous	20	31%
Textile manufacture and working	1	2%
Transport	3	5%
Weighing and measuring	5	8%
Total	65	100%

Table 15: Quantification of metalwork by Crummy’s categories

B.3.10 Post-medieval brook 507 (Period 3), produced most of the metalwork assemblage including some residual Anglo-Saxon and medieval artefacts (Table 26). Pit 606 and layer 758 in Period 1, as well as pit 312 and layer 607 in Period 2 also produced a higher quantity of metalwork.

Feature	No. Artefact	% No. Artefact
Ditch	5	8%
Foundation trench	1	2%
Layer	21	32%
n/a	3	5%
Pit	8	12%
Brook	19	29%
Topsoil	7	11%
Wall	1	2%
Total	65	100%

Table 26: Quantification of metalwork by feature

B.3.11 Late Anglo-Saxon (Period 1), and post-medieval Period 3 produced the larger groups of metalwork, while seven items (12%) were recovered from topsoil and two artefacts (3%) was from an undated feature (Table 27).

Period	No. Artefact	% No. Artefact
0	9	14%
1	14	22%
2	6	9%
3	21	32%
4.1	6	9%
4.2	7	11%
n/a	2	3%
Total	65	100%

Table 27: Quantification of metalwork by archaeological phase

Copper-alloy

B.3.12 The oldest recovered dress accessory is a Cog-wheel type 15 brooch (SF 24) (Weetch 2014, vol. 1, 96-97, vol. 2, 157 no. 535, 536 and 546) that is made from an alloy possibly containing lead. In her study about Middle to Late Anglo-Saxon brooches, Rosie Weetch dates this type of fastener to the 9th century.

B.3.13 An incomplete and undiagnostic pin from a brooch (SF 140) was dated to the Anglo-Saxon period on the basis of the stratigraphical phase of the feature from which the item was recovered.

B.3.14 Of particular interest is a small folding balance (SF 102; Fig. B.3.1). Susan Kruse (1992) dedicated a paper to these artefacts and argues that the tradition of folding balances might have originated from the Scandinavian/Baltic regions and that such artefacts were introduced to England in concomitance with the expansion of trade in the North Sea. Although largely unpublished, folding balances were found in the 10th-century assemblage from Copper Gate in York (Mainman and Rogers 2000), Thetford, Great Yarmouth, Exeter and particularly Ipswich (Kruse 1992, 72). Despite being heavily deformed and missing the terminal part of an arm and the stirrup with the pointer, the balance from Lower Brook Street is well preserved and given the decoration of the beam it can be compared with a similar item from Ipswich (Kruse 1992, 74, no. 3 b) dating to the 10th century.

B.3.15 Buckle SF 9 is a popular double oval shoe fastener of late medieval date (c.1350–1450) (Egan and Pritchard 2002, 86, no. 350, 367). D-shaped buckle SF 10 is a late medieval or possibly early post-medieval item with a moulded decoration style similar to a circular buckle from Suffolk (PAS: SF-BA1858), while the fragment of an undiagnostic frame (SF 16) could potentially be dated to the medieval to post-medieval periods on the basis of the associated feature’s chronology.

B.3.16 Of late medieval to early post-medieval date is recessed plate SF 22 that was most likely a component of a D-shaped buckle.

B.3.17 The group of late medieval belt components is also formed by a bar-mount with pendant loop (SF 14) from layer 607 that has a very similar parallel with a bar-mount

from London dating to *c.*1300–1400 and published by Egan and Pritchard (2002, 219, no. 1189), a mount decorated with an unusual human face (SF 23) and the terminal part of a possible strap-end folded lengthways (SF 111) (Egan and Pritchard 2002, 131, no. 605).

- B.3.18 Of late medieval to post-medieval date are three incomplete pins with small globular heads (SFs 103, 148 and 163). Such items were used in pinning the folds of linen head-dresses or to fasten veils (Egan and Pritchard 2002, 297) and together with lace-chapes SFs 112 and 142, they are evidence of domestic activity in the area.
- B.3.19 A late medieval to post-medieval thimble (SF 5) decorated with spirals of pits could suggest domestic textile activity in the vicinity. This type of thimble is a very common item (PAS: PUBLIC-324BCB) and it is generally dated to the period between 1400 and 1600. Household equipment is very limited in quantity, comprising stud SF 8, possibly from a late to post-medieval upholstered item, and serving fork SF 19.
- B.3.20 A post-medieval to modern spur (SF 4) from topsoil and similar to PAS: DEV-1386CA is the only item connected with transport activity and horse equipment.
- B.3.21 A total of six artefacts (SFs 7, 17, 26, 104, 105 and 151) remain unidentified, most being shapeless off cuts or fragments of copper-alloy sheet. These fragments were recovered from post-medieval contexts or topsoil. They were possibly part or decorations of furniture or caskets as the form of SF 105 and the punched decorations on SFs 104 and 152 seem to suggest.

Cxt.	Cut	SF	Feature	Site phase	Artefact	No.	Description	Length (mm)	Width (mm)	Thickness (mm)	Diam. (mm)	Weight (gr)	Spot date
302	312	16	Pit	2	Buckle	1	A fragment of a buckle loop with flat sub-rectangular cross-section	20	24	1.6	0	13	1066-1540
302	312	17	Pit	2	Unidentif.	1	A shapeless fragment of copper-alloy sheeting	21	18	1	0	1.5	1066-1540
506	507	5	Brook	3	Thimble	1	The thimble has a conical shape with spiral of pits decorating the body up to the domed top. The base is plain	20	0	0	23	8	1540-1700
506	507	8	Brook	3	Stud	1	A truncated tapering stem with square cross-section and large circular and domed head	6	0	1	10	0.7	1540-1700
506	507	26	Brook	3	Unidentif.	1	A shapeless fragment of metal sheeting	44	20	4.5	0	15.6	1540-1700
507	0	3	Brook	3	Button	1	An incomplete Postmedieval to modern button with a CuA circular and domed head covered with a silver foil. The loop is heavily encrusted with iron rust	0	0	4	13	3.6	1540-1700
507	0	7	Brook	3	Unidentif.	1	An undecorated regularly cut quarter of a circular artefact	0	10	0.1	0	0.2	1540-1700
507	0	9	Brook	3	Buckle	1	A double looped buckle of Medieval or early Postmedieval date The frame has a sub-rectangular cross-section and a flat tapering pin is still attached to the strap bar	17	22	2	0	6	1350-1450
507	0	10	Brook	3	Buckle	1	A cast D shape medieval buckle with flattened frame decorated with two knobs and stylised vegetal decoration	29	33	2	0	6	1300-1450
607	0	14	Layer	1	Mount	1	A vertically aligned bar of three half globes and hanging four lobes loop. The central globe is	7	14	5		3.2	1250-1350

Cxt.	Cut	SF	Feature	Site phase	Artefact	No.	Description	Length (mm)	Width (mm)	Thickness (mm)	Diam. (mm)	Weight (gr)	Spot date
							decorated with transverse horizontal grooves while the flanking globes are plain, concave and have a narrow pin						
607	0	22	Layer	1	Buckle	1	A rectangular buckle plate with folded and slotted end to clasp the strap bar	21	31	1.5	0	6.7	1300-1450
607	0	23	Layer	1	Mount	1	A mount made from a bar with central boss in the shape of a human head flanked by two plain half globes. The reverse is flat and presents the remain of two pins	22	9	6	0	3.9	1300-1450
758	0	24	Layer	2	Brooch	1	A Cog-wheel type 15 brooch	0	0	3	28.4	6.9	800-900
1041	1040	102	Ditch	1	Folding balance (Fig. B.3.1)	1	A small folding balance with incomplete arms. The balance consists of a beam with hexagonal cross section decorated with erring bone style lines. The stirrup and pointer originally placed in the middle of the beam are now missing. Two tapering arms with circular cross-section are hinged at the two ends of the beam. At one harm ends with a swollen circular decoration and develop into a small suspension loop now incomplete	21	28	4	0	5	850-1050
1043	0	111	Layer	4.2	Strap-pend	1	Terminal part of a medieval strap-end. The flat knob flower/acorn shaped is decorated with incised lines	27	15	3	0	5	1300-1450
1043	0	112	Layer	4.2	Lace chape	1	A folded lace chape	24	0	0	2.5	0.4	1350-1650

Cxt.	Cut	SF	Feature	Site phase	Artefact	No.	Description	Length (mm)	Width (mm)	Thickness (mm)	Diam. (mm)	Weight (gr)	Spot date
1195	0	140	Ditch	1	Pin (Fig. B.3.1)	1	A slightly curved pin possibly from a brooch	38	0	0	0.8		850-1050?
1296	0	163	Layer	4.1	Pin	1	A small pin with globular head	14	0	0	0	0	1450-1750
1339	1338	148	Foundation trench	4.2	Pin	1	A fine pin with globular head	24	0	0	0	0	1450-1750
1409	0	142	Layer	3	Lace chape	1	A large lace chape decorated with incised spiral line	28	0	0	6.5	1.7	1350-1650
1409	0	151	Layer	3	Unidentif.	1	A fragment of a possible circular metal sheeting with a punched decoration representing a rosette with 6 petals. The edge of the item is hammered to form a contour ridge. On the ridge is a single very small riveting hole	32	16	2	0	1.1	1500-1700
99999	0	103	Layer	0	Pin	1	A dress pin with globular head	43	0	0	0	0.3	1450-1750
99999	0	105	Layer	0	Unidentif.	1	A possible furniture mount consisting in a cast flat figurine representing a naked woman with open arms and spread bird wings. The legs are missing and on the back of the item is a tapering pin now curved	36	51	11	0	13.8	1650-1800
99999	0	104	Topsoil	0	Unidentif.	1	A copper alloy sheeting decorated with punched circles set around a large circle	39	33	0.3	0	0	1450-1700
99999	0	19	Topsoil	0	Fork	1	A possible table fork of post-medieval date. The artefact consists of a cast tapering and circular socket developing into a plain, sub-circular stem ending in	129	39	0	9	34.7	1450-1650

Cxt.	Cut	SF	Feature	Site phase	Artefact	No.	Description	Length (mm)	Width (mm)	Thickness (mm)	Diam. (mm)	Weight (gr)	Spot date
							three horizontal globes from which two prongs originally extended						
99999	0	130	Topsoil	0	Spur	1	A postmedieval CuA rowel spur. The arms are oval in cross-section and the neck expands into a thick circular in cross-section neck developing into a lobe before bifurcating into the rowel box	120	92	9	0	0	1500-1600

Table 28: Summary catalogue of copper-alloy artefacts

Iron

B.3.22 The small group of iron artefacts is mostly representative of household activity, transport and structural fittings.

B.3.23 The pintle with strap (SF 29) (similar to Egan 2010, 46, no. 31) was possibly from a wooden window shutter of the Late Anglo-Saxon period. The two hand-forged nails could also have been employed in some domestic structural construction of medieval or post-medieval date. Similarly, the large iron key SF 33 from topsoil would have been related to a substantial door from an important building and it highlights the preoccupation within the local community regarding safety.

B.3.24 A medieval spur (SF 117) and a buckle (SF 27) were common elements of horse equipment (Ellis 2002, no. 15 and Clark 1995, 55, no. 14-25). Possible stud SF 101 may also relate to horse equipment, but the item is very corroded and undiagnostic and other functions cannot be ruled out.

B.3.25 A total of three artefacts from modern features (SF 32, 159 and 165) are too small and poorly preserved to be identified.

Context	Cut	SF	Feature	Site phase	Artefact	No. Artefact	Description	Length (mm)	Width (mm)	Thickness (mm)	Spot date
506	507	27	Brook	3	Buckle	1	A large D-shaped buckle with sub-circular cross-section. A flattered tapering pin with rectangular cross-section is attached to the strap bar	38	53	6	1066-1540
506	507	1	Brook	3	Nail	9	Nine very encrusted nails of different size	0	0	0	1540-1700
605	606	29	Pit	1	Hinge	1	An incomplete and fragmented hand forged iron hinge-loop (pintle) with strap	95	25	6	850-1050
605	606	32	Pit	1	Unident.	1	An unidentified lump of iron possibly the stem of a nail	0	0	0	n/a
99999	0	33	Topsoil	0	Key	1	The large key has a circular cross-section handle. Despite heavy encrustation the stem appears to be square in cross-section and tapering to the end. A rectangular bit is placed at c.27 mm from the stem terminal	190	14	0	1100-1650

Table 29: Catalogue of ironwork

Lead

B.3.26 A total of 19 lead items was recovered from contexts attributed to Late Anglo-Saxon Period 1. Of these, brooch SF 20 is particularly interesting as it represents the only lead artefact assigned to the dress accessory category (Fig. B.3.1). The brooch is a type 4.c of Weetch's (2014) classification that represents a large group of popular fasteners dating to period between the 10th and the 11th centuries.

- B.3.27 Late Anglo-Saxon lead weights are generally found in truncated sphere or pyramid shapes, plain disc or conical, but also cylindrical forms were recovered from Coppergate (Mainman and Rogers 2000, 2562, no. 10584, Kruse 1992, 79). SF 21 is a cylindrical weight with slightly concave sides weighing 24.91g thus very similar to the Scandinavian unit of $24 \pm g$ (Kruse 1992, 86). If it cannot completely be excluded that SF 167 was a balance weight, the presence of a large (8 mm) circular central hole opens it to other interpretations including a weight for a fishing net or another possible domestic use.
- B.3.28 SFs 126 and 166 are rather undiagnostic items the functions of which cannot be clearly identified. SF 115 remains a quite enigmatic artefact, it closely resembles a cartwheel leading to the identification of this item as a possible component of a toy (Fig. B.3.1). The wheel, however, seems not to have been used as on its surfaces there are no signs of wear, and the edges are quite sharp. No parallels were found for this artefact but given toys of Late Anglo-Saxon era remain a topic largely unexplored, this interpretation for SF 115 should perhaps be considered.
- B.3.29 Shots SFs 4 and 12 are from a small modern firearm, possibly a pistol (Foard 2009); SF 12 is intrusive in its context.
- B.3.30 A single lead-alloy (pewter) artefact was recovered (SF 162). This is a small, moulded buckle decorated with a floral relief motive dating to the late post-medieval to modern period.

Cxt.	Cut	Feature	SF	Site phase	Artefact	Description	Length (mm)	Width (mm)	Thickness (mm)	Diam. (mm)	Weight (gr)	Spot date
506	507	Brook	4	3	Shot	A lead shot from a firearm	0	0	0	10.7	7.5	1650-1820
507	0	Brook	11	3	Un-identified	An irregular sub-circular possible lead ingot with a convex surface	0	0	10	51	124	1200-1800
302	312	Pit	12	2	Shot	A shot from a firearm	0	0	0	10.8	6.5	1200-1500
302	312	Pit	15	2	Un-identified	An unidentified lead artefact in the shape of a flat ring	30	20	1.3	0	4.1	1200-1500
9999 9	0	Topsoil	18	0	Weight counter	A possible weight or coin counter very poorly preserved. The weigh appears to be similar to SF 18. Part of an eagle with double head is visible on one side	0	0	0	0	2.07	1650-1750
603	0	n/a	20	1	Brooch (Fig. B.3.1)	A lead disc brooch with a moulded curved-armed cross decoration encircled by a band of pellets. A central hole may be the result of a old damage. On the reverse, a catch plate and part of an encrusted pin are preserved	0	0	2.7	33	16	900-1000
603		n/a	21	n/a	Weight	A cylindrical weight with slightly concave side	0	0	12	17	24.91	850-1050
9999 9	0	Topsoil	30	0	Weight counter	A possible weight or coin counter on one side is an eagle with double head. On the reverse is an unidentified coat of harm	0	0	1	23	4.98	1650-1750
605	606	Pit	31	1	Un-identified	A shapeless lump of lead	0	0	0	0	8.7	850-1400
1043	0	Layer	109	4.2	Un-identified	A flat loop (internal hole 6 mm)	0	0	1.8	24	6.4	1500-1700
1043	0	Layer	110	4.2	Un-identified	A square cut with a hammered decoration representing a cross in relieve with four pellets	11	12	1	0	1.2	1300-1500
1148	1147	Pit	115	1	Un-identified	A cast lead wheel with 6 rays. Possibly part of a toy or votive artefact	0	0	6	33	22.2	850-1050?

Cxt.	Cut	Feature	SF	Site phase	Artefact	Description	Length (mm)	Width (mm)	Thickness (mm)	Diam. (mm)	Weight (gr)	Spot date
					(Fig. B.3.1)							
1146	0	Wall	116	4.1	Un-identified	A rod of lead with rectangular cross-section	44	10	7	0	0	1700-1900
1211	1208	Ditch	126	1	Un-identified	A lead rod with square cross-section and slightly tapering terminals	95	3.5	3.5	0	0	850-1050?
1441	0	Layer	152	2	Seal	A possible small lead seal with a unidentified decoration in relieve	0	0	3	19	3.6	1100-1300?
1288	0	Layer	161	4.1	Button	A planoconvex undecorated head of a button	0	0	4	13	0	1600-1800
1288	0	Layer	162	4.1	Buckle	An incomplete moulded and rectangular in shape buckle frame. The frame is rectangular in cross-section and decorated with floral motifs in relieve	37	43	0	0	0	1600-1800
1297	0	Layer	164	4.1	Pipe	An incomplete and flattened lead pipe	94	0	0	13	0	1800-1950
1041	1040	Ditch	166	1	Un-identified	Originally the artefact probably had two horizontal rings now incomplete joined by a oval in cross-section bar	46	11	4	0	0	850-105?
1083	0	Layer	167	1	Weight	A cylindrical lead weight with circular hole (8 mm)	0	0	10	19.5	22.92	850-1050?

Table 30: catalogue of lead artefacts

Discussion

- B.3.31 Despite this being a small assemblage, the metalwork recovered from Lower Brook Street has an interesting nature and character that offer an important contribution to the emerging picture of this part of Ipswich from the Late Anglo-Saxon to the modern periods. The Late Anglo-Saxon or Anglo/Scandinavian era is characterised by items connected with trade and monetary exchange (see report on coins, App. B.1), as well as dress accessories and possibly domestic activity. These finds fit very well with the expected activity within a wic/emporium of the 10th–11th centuries.
- B.3.32 The general lack of medieval metalwork could be possibly explained with a change in the use of the area from a space of relatively dense human activity to a less busy and possibly more open part of the townscape.
- B.3.33 From starting around the reign of Elizabeth I and until the late 17th or early 18th century, the area appears to regain a more active character evidenced by a resurgence of lost coins, horse equipment and dress accessories.
- B.3.34 The absence of clearly datable metalwork and coins after the early 17th century indicates that the type of activity once again changed in this area of the town.

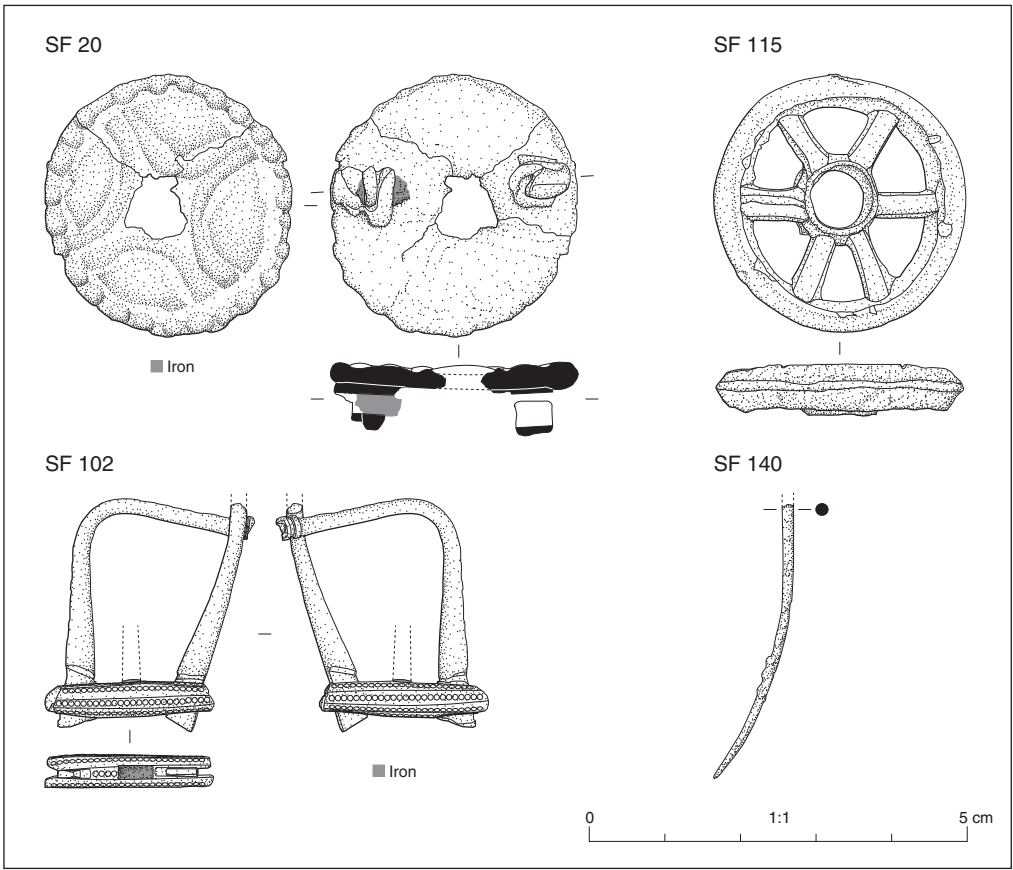


Figure B.3.1: Metalwork

B.4 Slag

By Rebecca Sillwood

Introduction

- B.4.1 Archaeological works produced an assemblage of 17 fragments of metalworking waste, weighing 2.268kg.
- B.4.2 The slag came from a variety of features, including ditches, pits, occupation layers, and wall construction backfill.
- B.4.3 The slag was almost exclusively found in contexts of Period 1, which corresponds with the Late Anglo-Saxon period, only three pieces were assigned to Period 4.2, of 20th century date.

Methodology

- B.4.4 The industrial waste was assessed by eye and catalogued into an Excel spreadsheet which is submitted as part of the archive.
- B.4.5 The slag is discussed below by phase.

Period 1: Late Anglo-Saxon (c.AD850-1066)

- B.4.6 Fourteen fragments of ferrous metalworking waste were assigned to this period of activity on the site, weighing 2.207kg. Eight pieces were undiagnostic slag, five were tap slag, and one piece was hearth lining.
- B.4.7 The slag from this phase was recovered from pits **1123**, **1147**, and **1226**, ditches **1158**, **1160**, **1190**, and **1208**, in addition to layer 1146.
- B.4.8 Undiagnostic slags usually make up the largest part of most assemblages, and cannot be assigned to an activity type, such as either smithing or smelting. They are purely evidence of activity on or close to the site involving metalworking. Tap slag is produced when the furnace is tapped to free up the slag, which then flows out and forms distinctive 'lava-like' flows which are very recognisable. Hearth lining is usually associated with smithing, with part of the ceramic structure of the hearth adhering to waste product.

Period 4.2: Early 20th century furniture factory

- B.4.9 Three fragments of undiagnostic slag, weighing 0.061kg, were recovered from two contexts within this phase of activity on the site. Two pieces came from demolition layers 1423 and 1448.

Conclusions

- B.4.10 The slag from this site is almost exclusively from Late Anglo-Saxon contexts. Slag is not intrinsically datable, and so it is only by context and association, that the material can be identified as such. The assemblage is small and is, therefore, not evidence for extensive metalworking activity on this site but rather evidence of metalworking in the vicinity.

B.4.11 The slag assemblage also shows evidence of both smithing and smelting of iron, which in a town such as Ipswich is not unusual. It seems likely that the slags from this site were simply waste which was deposited in an opportune pit or ditch.

B.5 Stone

Worked stone description by Ruth Shaffrey

B.5.1 A total of two pieces of stone was recovered and submitted for analysis. These were recorded with the aid of a x10 magnification hand lens and are recorded in full here (Table 31).

B.5.2 A single almost complete whetstone was recovered from Period 1 ditch **1158** (1159) in Area 9 (SF 119; Fig. B.5.1). This is an almost complete small, perforated whetstone of slate that would have been used for the sharpening of fine points such as needles. It is typical of a personal toolkit.

B.5.3 The end portion of an amethyst quartz crystal was found in Period 3 brook **507** fill 506 in Trench 5 (SF 28). This is not worked and retains most of its natural hexagonal form. Amethyst quartz does not occur naturally in East Anglia and the nearest UK source is in the granite of Dartmoor and Bodmin. It is not possible to be certain of provenance, however, and a more distant source cannot be ruled out.

Trench / Area	Period	Cut	Ctx	SF	Function	Notes	Size	Wt (g)	Lithology
9	1	1158	1157	119	Whetstone	Almost complete neat whetstone, slightly broken along a lamination at the narrow end. Of elongate form, wedge shaped in long section and rectangular in cross-section. It is perforated through the thickness at the narrow end. The surfaces are generally smoothed through use and there are plentiful fine point-sharpening scratches to one face	Measures 64mm in length x 7-12mm in width x 7-10.5mm in thickness	13	Slate
5	3	507	506	28	Unworked	End portion of amethyst crystal in natural hexagonal form	Measures 12 x 11 x 11mm	2	Quartz (amethyst)

Table 31: Stone

Architectural stone description by Carole Fletcher

B.5.4 In Trench 7, Period 3 layer 763 produced two large fragments of architectural stone (SFs 34 and 35; Fig. B.5.1). Both pieces are cut from a fine-grained limestone. One (SF 34) is a moulding and has a recess that may have held a glazing bar for a window (290mm x 300mm x 155mm). The second (SF 35) has been dressed on five sides to form a wedge shape possibly to act as a key stone above a window or door. It has strong cut marks on four of its faces, the fifth is smoothed and the sixth is convex and irregular (260mm x 310mm x 240mm). Both pieces appear to be of late medieval or early post-medieval date and are more likely to be secular than ecclesiastical in character (V. Rowlinson pers. comm.) and may have originated from or been destined for a large grand house.

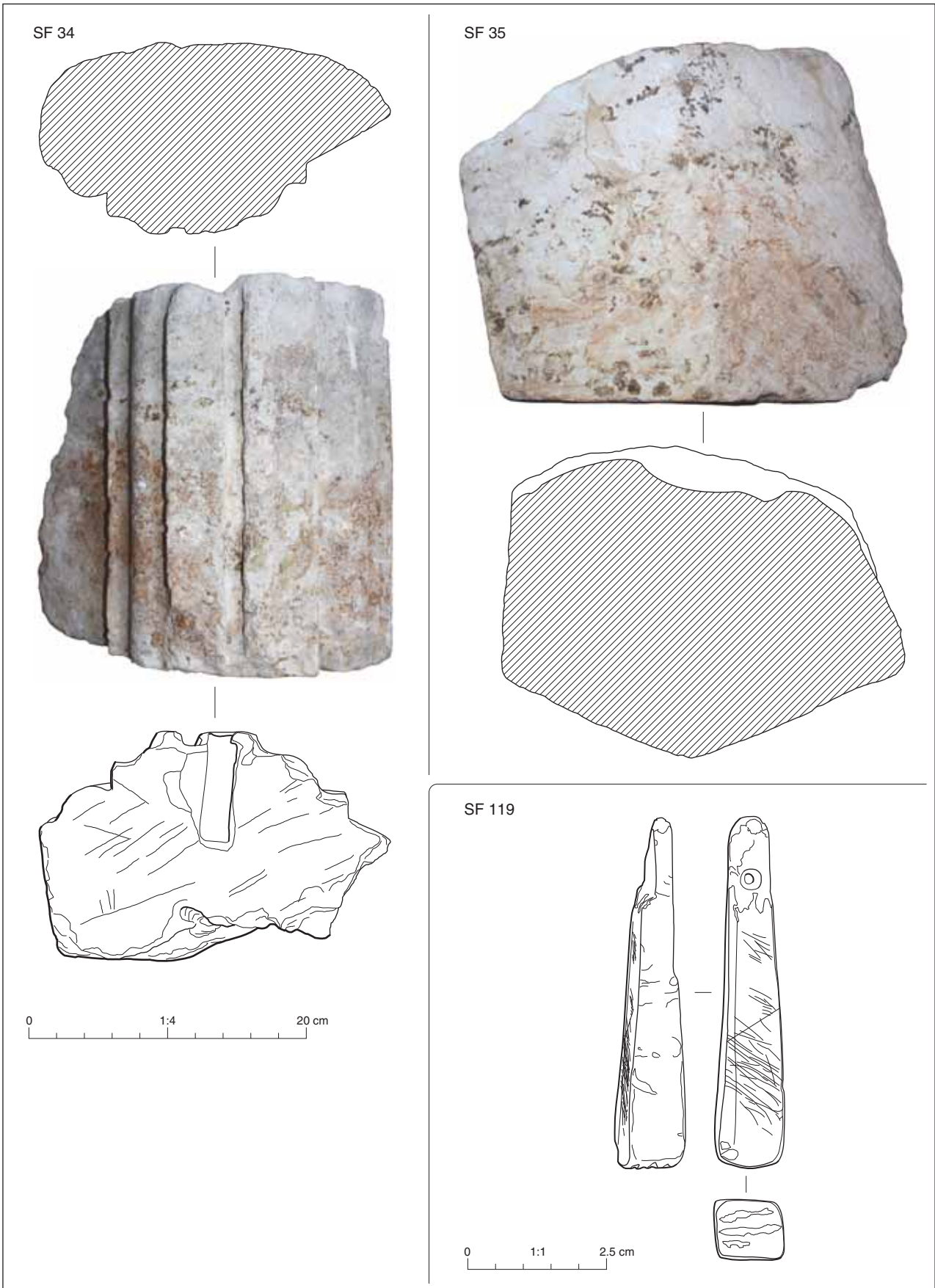


Figure B.5.1: Stone

B.6 Flint

By Rona Booth

Introduction

- B.6.1 This report deals with a small residual assemblage comprising 16 struck flints and 13 unworked burnt flints (0.431kg). The flint was recovered from a total of 13 Period 1 contexts in Area 9 and one Period 4.1 context in Area 10. All the flint was therefore residual, incorporated into later features.
- B.6.2 The assemblage was recorded on an Excel spreadsheet, a copy of which is retained in the site archive. This includes a complete breakdown of flint from individual contexts and detailed recording of retouched pieces. A summary table of the catalogue is presented in Table 32, with the catalogue retained in the project archive.
- B.6.3 The worked flint assemblage has been recorded/catalogued according to technological and typological classes based largely on the approach of Inizan and colleagues (1999) and follows standard practice for the analysis and classification of post glacial British lithic assemblages (e.g. Healy 1988; Bamford 1985; Butler 2005).

Context	Cut	Period	Context type	Irregular waste	Flake	Narrow flake	Serrated blade	Edge trimmed flake	Abruptly retouched piece	Core fragment	Core on flake	Irregular burnt core	Unworked burnt	Total
605	606	1	pit							1				1
1087	1084	1	pit			1								1
1093	1091	1	ditch										1	1
1138	1139	1	post hole	2										2
1146	-	1	layer	1		1					1	1	3	7
1159	1158	1	ditch		1		1						2	4
1191	1190	1	ditch		1									1
1205	1194	1	ditch						1					1
1209	1208	1	pit/ditch							1			2	3
1210	1208	1	ditch										1	1
1211	1208	1	ditch										3	3
1227	1226	1	pit					1						1
1282	-	4.1	layer		1									1
9999	-	-	Un-stratified			1							1	2
				3	3	3	1	1	1	2	1	1	13	29

Table 32: Quantification of the flint assemblage by context

Raw materials and condition

- B.6.4 The struck flint is of variable quality as might be expected for a residual assemblage. The majority is fine-grained brown and grey flint, most of which was probably derived from the local river gravels, as indicated by the surviving thin and worn, cortical surfaces on the majority of cortical pieces, although a primary source cannot be discounted for some of the material.

B.6.5 Most of the flint exhibits edge damage of varying degrees reflecting its incorporation into later features, although some pieces, for example, the narrow flake from pit **1084**, look remarkably fresh. It is probable that these pieces did not exist as surface scatters for too long before they were incorporated into later fills and deposits.

Unworked burnt flint

B.6.6 A total of 13 unworked burnt flints (0.431kg) were recovered from seven contexts, mainly ditch fills and occupation layers. Burnt flint occurs in archaeological contexts, either *in situ* or from the 'sweeping up' of debris and is produced when flint is used for a number of processes, for example, to heat water or as a temper for use in pottery. It is entirely possible that these flints were the result of more recent burning events, given their context.

Characterisation and technology

B.6.7 The assemblage as a whole has a significant early prehistoric element and whilst undoubtedly a later date cannot be precluded for some of the flint, especially the unworked burnt material, a Late Mesolithic/Early to Mid-Neolithic date can be posited for much of the assemblage.

B.6.8 All of the flakes, five of which exhibit platform preparation, would fit comfortably into this time frame and the small core on a flake (0.027g) from layer **1146** is also of a Late Mesolithic/Early Neolithic date.

B.6.9 The remaining core-related debitage affords the assemblage, as a whole a broader time frame. The large flake recovered from layer **1282** struck from an opposed platform core and the lightly burnt core (0.153kg) from layer **1146** are of Neolithic date.

Retouched implements

B.6.10 Three contexts produced tools. The proximal end of a serrated blade was recovered from ditch **1158**. A corticated piece of flint from ditch **1194**, potentially the broken distal end of a thick flake, had short abrupt retouch through the cortex. Pit **1226** produced a flake with very fine retouch down one lateral and its distal end, whilst the opposing lateral was edge damaged and had striations. The dorsal surface of this small flake showed evidence of stepped removals.

Discussion

B.6.11 The site lies close to the alluvial terraces of the River Orwell and river valleys were a focal point for prehistoric settlement. Although this assemblage is small and out of context, it demonstrates a small but active presence at this site during the Neolithic period and potentially earlier.

B.7 Glass

By Rebecca Sillwood

Introduction and Quantification

B.7.1 Excavations produced 120 fragments of glass, weighing 2.546kg in total (Table 37). The most frequent form of glass found was bottle glass, followed by undefined vessel glass and window glass (see Table 33).

Glass Form	Qty
Bottle	65
Vessel	29
Window	14
Phial	3
Biconical phial/Sandglass	2
?Window	2
?Flask/Phial	2
Drinking vessel	2
Globular beaker	1
Total	120

Table 33: Glass forms

B.7.2 The glass assemblage includes two pieces of Middle Saxon vessel, three pieces of medieval painted window glass, with the rest of the assemblage being post-medieval, dating from the 17th–20th centuries and consisting of bottles, window fragments, phials, and drinking vessels (see Table 34).

Date	Qty
L17th-E18thc.	30
17th-18thc.	27
PM	23
L19th-20thc.	9
20thc.	8
19th-20thc.	6
M17th+	5
MED	3
MS	2
18thc.+	2
17th-M18thc.	2
?18thc.	1
?MED	1
?PM	1
Total	120

Table 34: Date of glass

B.7.3 The assemblage was recovered mainly from stratified contexts (Table 35), though many consisted of backfill layers, demolition layers, levelling layers, *etc.* which may suggest some mixing of dates and importing of material.

Feature Type	Qty
Backfill layer	74
Unstratified	15
Rubble layer	9
Demolition layer	9
Structure fill	4
Buried soil	4
Levelling layer	2
Foundation trench 1274	1
Pit 1384	1
Pit 1156	1
Total	120

Table 35: Feature types producing glass

B.7.4 Seven phases of activity on the site have been identified by the excavator, with five of them producing glass (see Table 36). A few pieces remain unphased, due to being unstratified.

Period	Qty
4.1: c.18th-19th century malshouses	82
4.2: early 20th century furniture factory	18
Unphased/unstratified	15
2: Medieval (c.AD1066-1540)	2
3: Post-medieval (c.AD1540-1700)	2
1: Late Anglo-Saxon (c.AD850-1066)	1
Total	120

Table 36: Phases producing glass

Methodology

B.7.5 The glass was examined by eye and catalogued, weighed and recorded, as individual vessels where possible. All dates given for the phases are those assigned by the excavator to individual contexts. The terminology used in the report and the catalogue, for the various glass forms, is mainly taken from *Antique Glass Bottles Their History and Evolution* (1500-1850) (Van den Bossche 2001) and *Early post-medieval vessel glass in England c. 1500-1670* (Willmott 2002).

B.7.6 The glass is discussed below ordered by Phase.

Factual Data

Period 1: Late Anglo-Saxon (c.AD850-1066)

B.7.7 A single small fragment of vessel glass was assigned to this phase of activity on the site. The piece (SF 120; Fig. B.7.1, no. 1) was recovered from pit **1156** and is most likely part of the rim of a palm cup of Middle Saxon date. The fragment is bright blue, almost

glittering, glass, with two parallel lines of yellow/gold banding close to the edge. The rim is folded inwards and forms a single tubular cavity, making the rim profile P-shaped. A similar colour and banding can be seen on an example from Hamwic (modern Southampton) (Hunter & Heyworth, 1998, 11, fig. 5, no. 24/509 and 28, Plate 4). The palm cups recorded from the Anglo-Saxon cemetery at the Buttermarket in Ipswich are similar in colour, but do not appear to have the banding to the rim that the Lower Brook Street example has (Evison 2009, plate 10). Some small rim fragments from Brandon, Suffolk, also have the yellow banding that the Lower Brook Street example has (Evison, 2014, 174, plate 6.4, nos 3679 & 5097). Evison (*ibid.* 250) discusses the dating of palm cups as being mid-7th century into the 8th century, but not beyond. Broadley (2021, 194) gives a wider date range of late 6th to late 7th century, and states that 'The percentage of palm cups found at Ipswich is significantly above the national average for England'.

- B.7.8 Both Evison (2009) and Broadley (2021) discuss the provenance of the palm cup, with Evison stating that there may have been glass-making at this time within Britain, and Broadley stating that there was major trading occurring between 'emporium' such as Ipswich and Dorestad (Netherlands) (*ibid.* 193). Whether glass was manufactured in Ipswich or not is uncertain, though given the evidence for other trades and craft activities, it is certainly possible. Palm cups are often placed into graves in pairs, but are also found on settlement sites, and so are not seen as purely a 'grave furnishing', but a multi-functional drinking vessel for use in a domestic setting as well as a funerary one.

Period 2: Medieval (c.AD1066-1540)

- B.7.9 Two fragments of window glass were attributed to this phase of activity on the site, both from buried soil layers 1441 and 1450 respectively. The first fragment (SF 153) is a striking piece of green glass with two grozed edges (the two remaining are broken) forming a corner piece (Fig. B.7.1, no. 12). This piece of window glass is painted to the reverse with a red/brown design which appears to be a repeating floral pattern. This fragment is in excellent condition, measuring 2.85mm thick. The second fragment is plain, broken on all sides, and colourless with a greenish hue. This piece is only 1.6mm thick.
- B.7.10 Both of these pieces are in unusual condition for their apparent medieval date assignment. It is more usual that medieval glass is both thicker and often in very poor opaque condition, such as that listed below in Period 3. Perhaps both pieces date to the latter end of the medieval period, perhaps being of early 16th century date, possibly even associated with the Tudor Cardinal's College that once stood nearby. No parallels have been found for the pattern on the first fragment.

Period 3: Post-medieval (c.AD1540-1700)

- B.7.11 Two pieces of opaque medieval window glass were recovered from this phase of activity on the site. The pieces (SF 151) came from buried soil 1409 and were possibly painted but are in too poor condition to be certain. These fragments are clearly residual in this context but may relate to previous medieval buildings on the site, such as the Augustinian priory of SS Peter and Paul.

Period 4.1: c. 18th–19th-century malthouses

- B.7.12 This phase produced the largest proportion of glass from the whole assemblage, with 82 pieces in total. The contexts represented appear to be mixed backfill, demolition and levelling layers.
- B.7.13 Backfill layer 1288 is worth discussing on its own, as it produced much of the material of this phase (62 pieces in total) and it is also the context that produced a Middle Saxon globular beaker fragment, along with 17th-century and later material. The Middle Saxon beaker fragment consists of a curving opaque body sherd, which, when held to the light, shows a vivid red/amber colour (Fig. B.7.1, no. 8). This piece is decorated with white/yellow marvered trails of curving decoration, similar to that found on a vessel from Brandon in Suffolk (Evison, 2014, 172, plate 6.2, no. 7371). The red colour found on this vessel is discussed by Broadley (2021, 195) and is described as being 'present at Ipswich in above average quantities for England'. The date range for this type of vessel is extremely broad, being in use from the 5th to the 11th centuries (*ibid.* 195).
- B.7.14 The maximum number of vessels from context 1288 was only 17. Twenty-two fragments were identified as probably deriving from a single green bottle, most likely an onion (or possibly a mallet) bottle (Fig. B.7.1, no. 7) of late 17th to early-18th century date (Van den Bossche, 2001, 71–79). Two joining pieces of a small, pale green, incomplete, square bottle were also recovered (Fig. B.7.1, no. 5). This little bottle is very distinctive in form, with indented sections on the sides, similar to an example from Norwich (Haslam, 1993, 101, fig. 67, no. 630) which was dated to between the 17th–18th century. Another piece of bottle glass is dark olive-green and is from an uncertain bottle-type of post-medieval date.
- B.7.15 Around 32 pieces of thin vessel glass from context 1288 were attributed to pharmaceutical phials/flasks. Twenty-five of these pieces are colourless with a blue hue, and are undiagnostic body fragments, making up a maximum of four vessels. All vessels are cylindrical in form. Two pale blue bases were recorded, measuring 66mm and 67mm respectively; both have conical kicks, although one is high and one low (Fig. B.7.1, nos 2 and 3). These bases may be too large to be phials, and so are recorded as being either a flask or a phial (Willmott, 2002, 91, fig. 117; Haslam, 1993, 102, fig. 68) and are dated to *c.* mid-17th century or later. Two joining body fragments, which are colourless with a blue-green hue, and include a fragment of everted rim, are of such a distinctive profile that they can be identified as a biconical flask, also known as a sandglass (Fig. B.7.1, no. 4; Haslam, 1993, 102, fig. 68, nos. 639–641; Willmott, 2002, 91, fig. 118), dating to the 17th to mid-18th century. Two joining sherds from a phial with an everted rim, narrowed neck, and cylindrical body, were also recovered (Fig. B.7.1, no. 9). These pieces are colourless with a blue-green hue, and are from a straight-sided vessel, dating to the mid-17th century onwards (Willmott, 2002, 91, fig. 117). The base of a green cylindrical phial with a conical kick and pontil scar to the underside is of similar date (Fig. B.7.1, no. 10; *ibid.* & Haslam, 1993, 102, fig. 68).
- B.7.16 The remaining pieces from this context include an incomplete clear foot ring from a drinking vessel of *c.* 18th century date onwards (Fig. B.7.1, no. 6), an incomplete

colourless heavy cut glass ?bowl or similar (Fig. B.7.1, no. 11), and two fragments of clear window glass.

B.7.17 Other contexts containing bottle glass include backfill layer 1260, rubble layers 1297 and 1307, and demolition layer 1345. Layer 1345 produced seven fragments from another probable onion bottle. Layers 1260 and 1307 both produced undiagnostic bottle fragments. Layer 1297 produced three pieces of distinctively modern glass, including a Codd bottle fragment, which must post-date 1872 due to the design, alongside a brown glass bottle fragment which is likely to be 20th century in date.

B.7.18 Eight pieces of window glass were recovered from layers 1260, 1297, and 1389, in addition to foundation trench 1274. Most pieces can only be dated to the post-medieval period and are colourless fragments, however, rubble layer 1297 produced the distinctively modern wire mesh safety glass in five fragments. This wire mesh glass must post-date 1892 which is when it was invented.

Period 4.2: Early 20th century furniture factory

B.7.19 Only 18 glass fragments were assigned to this phase of activity on the site, 17 pieces are bottle glass, and one piece is window glass.

B.7.20 Demolition layer 1401 produced one sherd of green bottle glass, consisting of the part profile of a probable onion bottle. This type of bottle dates to between the late-17th and early 18th century (Van den Bossche, 2001, 71-79).

B.7.21 The remaining bottle glass was recovered from layers 1259, 1291, 1423, 1448 and 1451. The glass is mainly undiagnostic in form, mainly green, although one piece is aqua coloured.

B.7.22 A single fragment of wire mesh safety glass was recovered from pit 1384.

Discussion

B.7.23 The glass from this site in Ipswich is a diverse group of some interest, with evidence of the early origins of Ipswich, through to the later prosperity and industrialisation of the town. Middle Saxon glass from Ipswich is apparently not as rare as it would be from other sites. Ipswich's early origins were as an emporium, trading far and wide, and this could explain the provenance of the two Middle Saxon pieces of glass from this site.

B.7.24 The Middle Saxon glass came from a Late Anglo-Saxon context and a post-medieval context, and so is likely to be residual in both cases. The pieces represent a probable palm cup and a globular beaker, both drinking vessels. Palm cups can often be found in pairs within burials, but can also be found on settlement sites, as is the case here. There is no indicator that either vessel was particularly high status, but a comparable site, with similar glass, at Brandon, is known to be a high status site, so perhaps there are some similarities. It must be noted that a possible early minster lay on the site of St Peter's Church, some 75m south-west of the site.

B.7.25 Although only two small fragments of Middle Saxon glass were recovered from this site, they provide an important addition to the corpus of glass already known from the area (Broadley 2021).

- B.7.26 Medieval window glass (SFs 151 and 153) was recovered from this site, probably associated with the priory thought to be located in the vicinity. Neither piece was in good enough condition to be closely dated. Further window glass, this time better preserved, was possibly associated with the Tudor Cardinal's College which was also briefly on/near this site.
- B.7.27 The remaining glass was probably of domestic nature, with at least three probable onion bottles, most likely for wine, and other bottle fragments. Pharmaceutical phials and flasks were also present. There is also the possibility of an inn/tavern or an apothecary's clearance, most especially with context 1288 which produced the vast majority of the post-medieval glass assemblage. It is not easy to trace this, but it should be raised as a possibility for some of the assemblage. No marked or distinctive glass fragments named a particular inn, and so it may remain an uncertainty, though is of interest given the location within a busy town such as Ipswich. It is equally possible that the post-medieval glass represents 'night soil' deposits from nearby houses.
- B.7.28 Only a small amount of post-medieval vessel glass was recovered from this site, none of which is of high quality, and most represents drinking vessel fragments of plain form.

Illustration catalogue (Fig. B.7.1)

1. Vessel. SF 120. Blue with two inset lines of yellow/gold; part of possible rim or footring, with folded over edge, tubular with cavity. Middle Saxon. Fill 1157 of pit **1156**. Period 1
2. ?Flask/phial. Pale blue, cylindrical base with high pointed conical kick, pontil scar to underside, possibly sloping sides. Mid 17th+ century. Layer 1288. Period 4.1
3. ?Flask/phial. Pale blue; cylindrical base with low pointed conical kick; pontil scar to underside; may have sloping sides. Mid 17th+ century. Layer 1288. Period 4.1
4. Biconical phial/Sandglass. two joining body/rim fragments; everted rim, incomplete; neck/shoulders of vessel splay to 45 degrees, with no sign of curving in for base; clear with blue-green hue. 17th-mid 18th century. Layer 1288. Period 4.1
5. Bottle. Small square bottle in pale green glass; joining pieces; square base with very low kick, pontil scar to underside; fairly straight sides, one with indented dimple; right angled shoulders with narrow neck, no rim remaining. 17th-18th century. Layer 1288. Period 4.1
6. Drinking vessel. Part of clear footring; with folded over rim, slightly raised, doesn't lie flat. 18th+ century. Layer 1288. Period 4.1
7. Bottle. Green; probably part of an onion bottle; several joining base shards forms an oval base with shallow kick; joining neck and shoulder fragments point to a squat short necked piece with applied string rim; other body fragments. Late 17th-early 18th century. Layer 1288. Period 4.1
8. Globular beaker. Curving body fragment; opaque, but when held to light is a vivid red/amber; with marvered white/yellow trails of curving lines of decoration to outer surface. Middle Saxon. Layer 1288. Period 4.1
9. Phial. Two joining body/neck/rim fragments; clear with bluish-green hue; incomplete everted rim with narrow neck and shoulders at right angle forming a probable cylindrical vessel; thin walled; straight sided. Mid 17th+ century. Layer 1288. Period 4.1
10. Phial. Green; cylindrical base with pointed conical kick; pontil scar to underside; probably straight sided. Mid 17th+ century. Layer 1288. Period 4.1

11. Vessel. Heavy lead glass; clear; part of base of ?bowl, very thick with tapering faceted broken stem, possibly bon bon dish or bowl, rather than drinking vessel. ?18th century. Layer 1288. Period 4.1
12. Window. SF 153. Sub-rectangular flat fragment with two grozed edges, other two edges broken (corner fragment); green glass with pattern, possibly floral painted onto reverse in ?red/brown paint. Medieval. Layer 1441. Period 2

Phase	Context	Count	Weight (g)	MNV	Form	Description	Measurements	Date	Feature Type	Reference
1	1157	1	1	1	Vessel	blue with two inset lines of yellow/gold; part of possible rim or footring, with folded over edge, tubular with cavity	L>11.5 W>19 T4.2	MS	Pit 1156	Hunter & Heyworth, 1998, 28, Plate 4
2	1441	1	6	1	Window	sub-rectangular flat fragment with two grozed edges, other two edges broken (corner fragment); green glass with pattern, possibly floral painted onto reverse in ?red/brown paint	L>27 W>40 T2.85	MED	Buried soil	
2	1450	1	1	1	Window	clear with greenish hue; flat fragment; broken on all sides	L>31 W>13 T1.6	?MED	Buried soil	
3	1409	2	4	1	Window	opaque fragments, possibly painted, but in too poor condition; one piece has a finished edge which is bevelled and another that is grozed	T1.5 and T2	MED	Buried soil	
4.1	1260	1	14	1	Bottle	green curving fragment	-	PM	Backfill layer	
4.1	1260	1	2	1	Window	thick clear fragment; broken on all sides	-	PM	Backfill layer	
4.1	1275	1	3	1	?Window	rolled worn piece, possibly part of an edge, uncertain	-	?PM	Foundation trench 1274	
4.1	1288	1	30	1	?Flask/Phial	pale blue; cylindrical base with high pointed conical kick; pontil scar to underside; possibly sloping sides	D66	M17th+	Backfill layer	Willmott, 2002, 91, fig. 117; Haslam, 1993, 102, fig. 68
4.1	1288	1	22	1	?Flask/Phial	pale blue; cylindrical base with low pointed conical kick; pontil scar to underside; may have sloping sides	D67	M17th+	Backfill layer	Willmott, 2002, 91, fig. 117; Haslam, 1993, 102, fig. 68
4.1	1288	2	5	1	Biconical phial/ Sandglass	two joining body/rim fragments; everted rim, incomplete; neck/shoulders of vessel splay to 45 degrees, with no sign of curving in for base; clear with blue-green hue	H>49.5	17th- M18thc.	Backfill layer	Haslam, 1993, 102, fig. 68, nos. 639-641; Willmott, 2002, 91, fig. 118
4.1	1288	2	13	1	Bottle	small square bottle in pale green glass; joining pieces; square base with very low kick, pontil scar to underside; fairly straight sides, one with indented dimple; right angled shoulders with narrow neck, no rim remaining	H>40 L>29 W33	17th- 18thc.	Backfill layer	Haslam, 1993, 101, fig. 67, no. 630
4.1	1288	22	639	1	Bottle	green; probably part of an onion bottle; several joining base shards forms an oval base with shallow kick; joining neck and shoulder fragments point to a squat short necked piece with applied string rim; other body fragments	-	L17th- E18thc.	Backfill layer	van den Bossche, 2001, 71-79
4.1	1288	1	22	1	Bottle	dark olive-green; edge of base fragment	-	PM	Backfill layer	

Phase	Context	Count	Weight (g)	MNV	Form	Description	Measurements	Date	Feature Type	Reference
4.1	1288	1	7	1	Drinking vessel	part of clear footring; with folded over rim, slightly raised, doesn't lie flat	D>58	18thc.+	Backfill layer	Haslam, 1993, 107, fig. 72
4.1	1288	1	3	1	Globular beaker	curving body fragment; opaque, but when held to light is a vivid red/amber; with marvered white/yellow trails of curving lines of decoration to outer surface	-	MS	Backfill layer	Evison, 2014, 172, Plate 6.2, no. 7371
4.1	1288	2	17	1	Phial	two joining body/neck/rim fragments; clear with bluish-green hue; incomplete everted rim with narrow neck and shoulders at right angle forming a probable cylindrical vessel; thin walled; straight sided	H>79 D46	M17th+	Backfill layer	Willmott, 2002, 91, fig. 117
4.1	1288	1	21	1	Phial	green; cylindrical base with pointed conical kick; pontil scar to underside; probably straight sided	D45	M17th+	Backfill layer	Willmott, 2002, 91, fig. 117; Haslam, 1993, 102, fig. 68
4.1	1288	1	72	1	Vessel	heavy lead glass; clear; part of base of ?bowl, very thick with tapering faceted broken stem, possibly bon bon dish or bowl, rather than drinking vessel	H>54	?18thc.	Backfill layer	
4.1	1288	25	25	4	Vessel	multiple body shards of thin vessel glass, probably related to the other pharmaceutical flasks/phials in same context; all clear with bluish hue	-	17th-18thc.	Backfill layer	Willmott, 2002, 91, fig. 117; Haslam, 1993, 102, fig. 68
4.1	1288	2	9	2	Window	flat fragments; both clear, one with bluish hue, one with greenish hue; possibly some finished edges, no grozing	-	PM	Backfill layer	
4.1	1297	3	27	3	Bottle	one brown body shard; one clear possibly part of Codd bottle neck with folded section; one clear thick body shard	-	L19th-20thc.	Rubble layer	
4.1	1297	5	146	2	Window	modern wire safety glass fragments; flat and broken on all sides	-	20thc.	Rubble layer	
4.1	1307	1	121	1	Bottle	green; part of circular base with deep kick up	D>88	PM	Rubble layer	
4.1	1345	7	521	1	Bottle	green; probably part of onion bottle, consisting of large circular base with shallow rounded kick; and multiple curving body shards	D138	L17th-E18thc.	Demolition layer	van den Bossche, 2001, 71-79
4.1	1389	1	12	1	?Window	thick clear fragment with one finished smoothed edge	-	PM	Demolition layer	
4.2	1385	1	21	1	Window	wire safety glass; clear; broken on all sides	-	20thc.	Pit 1384	

Phase	Context	Count	Weight (g)	MNV	Form	Description	Measurements	Date	Feature Type	Reference
4.2	1401	1	120	1	Bottle	green; probably part of onion bottle, part profile visible, body shard which curved in at base and in at top	H>98.5	L17th-E18thc.	Demolition layer	van den Bossche, 2001, 71-79
4.2	1423	2	14	1	Bottle	green; possible neck fragments	-	PM	Backfill layer	
4.2	1259	2	59	2	Bottle	one mid green circular base fragment with shallow kick; one pale aqua green curving body fragment	-	PM	Levelling layer	
4.2	1291	2	39	1	Bottle	green; curving body fragments	-	PM	Backfill layer	
4.2	1448	4	85	4	Bottle	all green, one paler than the others; fragment of base, plus three body shards	-	PM	Structure fill	
4.2	1451	6	248	1	Bottle	green; incomplete base fragment with shallow rounded kick, circular; remainder body fragments	D>103	PM	Backfill layer	
	99999	4	22	1	Bottle	dark green body fragments	-	19th-20thc.		
	99999	1	8	1	Bottle	clear body fragment	-	20thc.		
	99999	6	123	1	Bottle	pale blue-green; all fragments of probable same Codd bottle, part of folded neck fragment present along with two body fragments with lettering, one reads '[M]AKERS//[L]ONDON'; others are body fragments	-	L19th-20thc.		
	99999	1	42	1	Drinking vessel	heavy lead glass; clear; incomplete solid circular footring with pontil scar to underside; slightly raised (not flat); part of faceted stem base remaining; concentric striations	D>60	18thc.+		Haslam, 1993, 107, fig. 72
	99999	2	18	1	Vessel	pale blue; possibly part of medicinal bottle; may be hexagonal?	-	19th-20thc.		
	99999	1	5	1	Window	clear flat fragment; broken on all sides	-	20thc.		

Table 37: Glass catalogue

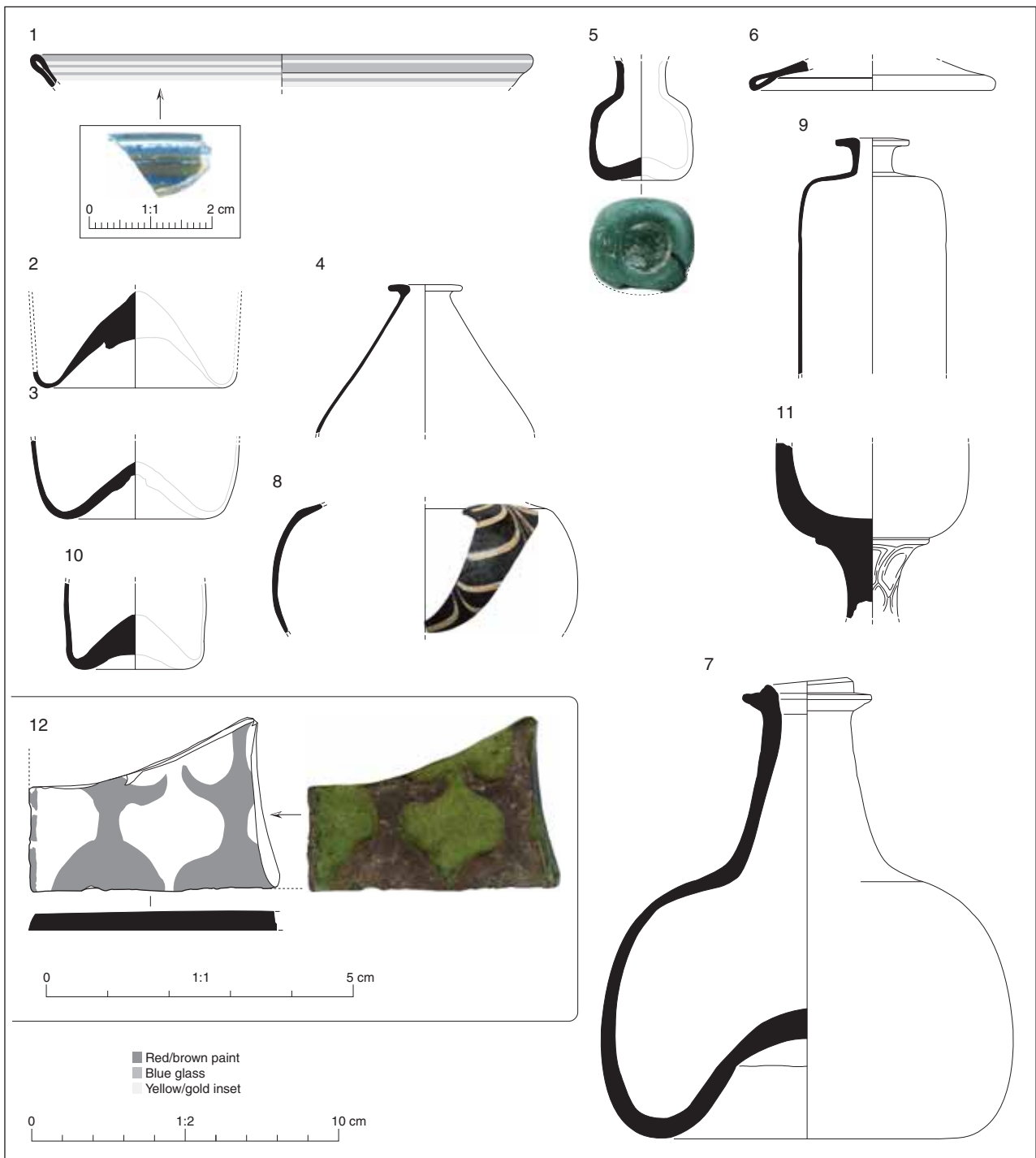


Figure B.7.1: Glass

B.8 Pottery

By Sue Anderson

Introduction

B.8.1 The assemblage comprises 930 sherds (19,973g) of pottery, recovered from 107 contexts in the evaluation test pits and the excavation areas. Table 38 provides a quantification by period.

Pot period	Abbrev.	Date range	No	Wt/g	eve	MNV	Avg Wt/g
Early Anglo-Saxon	ESax	5th-7th c.	28	296	0.12	26	10.6
Middle Saxon	MSax	L.7th-M.9th c.	65	1613	0.40	57	24.8
Late Saxon	LSax	M/L.9th-11th c.	542	8073	7.05	526	14.9
Early medieval	EMed	11th-12th c.	41	398	0.30	41	9.7
Medieval	Med	12th-14th c.	41	691	0.35	30	16.9
Late medieval	LMed	L.14th-M.16th c.	41	2044	0.94	22	49.9
Post-medieval	PMed	M.16th-M.18th c.	63	1616	3.18	20	25.7
Modern	Mod	18th-20th c.	109	5242	3.95	87	48.1
<i>Totals</i>			<i>930</i>	<i>19973</i>	<i>16.29</i>	<i>809</i>	<i>21.5</i>

Table 38: Pottery quantification by period

Methodology

B.8.2 Quantification was carried out using sherd count, weight and estimated vessel equivalent (eve). The minimum number of vessels (MNV) within each context was also recorded, but cross-fitting was not attempted unless particularly distinctive vessels were observed in more than one context. A full quantification by fabric, context and feature is available in the archive. All fabric codes were assigned from the Suffolk post-Roman fabric series (Anderson 2020). Thetford-type ware fabrics are based on Dallas (1984), and forms on Anderson (2004). Form terminology for medieval pottery is based on MPRG (1998). Redwares were identified based on Jennings' Norwich work (Jennings 1981) and Cotter's work in Essex (Cotter 2000). The results were input directly onto an Access database, which forms the archive catalogue.

Pottery by pot period

Early Anglo-Saxon

B.8.3 Twenty-eight sherds were of Early Anglo-Saxon date, all from contexts in Trench 9 (Table 39). A few fine sandy micaceous, shelly and granitic wares were present, but the majority of sherds were of late date in this period and comprised grass-tempered wares. Three rims were present, all upright/vertical types, and all from jars. One vessel was burnished externally, and one was grass-wiped. There were no decorated sherds.

Fabric	Code	Date range	No	Wt/g	Eve	MNV
Early Saxon fine sand and mica	ESSM	5th-7th c.	1	3		1
Early Saxon granitic	ESCF	6th-7th c.	1	42		1
Early Saxon calcareous and granitic	ESCM	6th-7th c.	1	20		1
Early Saxon sparse shelly	ESSS	6th-7th c.	3	40		3
Early Saxon grass and sand-tempered	ESO2	6th-7th c.	4	14	0.06	4
Early Saxon grass-tempered	ESO1	L.6th-7th c.	18	177	0.06	16

Table 39: Early Anglo-Saxon pottery by fabric

Middle Saxon

B.8.4 Sixty-five sherds were of Middle Saxon date (Table 40). Most sherds were residual in later contexts, and the majority were Ipswich ware. One gritty rim fragment was recovered, a type E (West 1963), from a relatively large jar with a rim diameter of 240mm. A type A rim sherd in the smooth sandy fabric was also found. One sherd with incised horizontal line decoration may be from a Buttermarket-type bottle, and another sherd with a possible (poorly executed) triangular stamp may be from a spouted pitcher. One handmade oxidised ware appeared similar to Ipswich ware and may also date to this period.

Fabric	Code	Date range	No	Wt/g	Eve	MNV
'Sandy' Ipswich Ware (Group 1)	SIPS	L.7th-M.9th c.	35	1062	0.08	35
'Gritty' Ipswich Ware (Group 2)	GIPS	L.7th-M.9th c.	9	176	0.07	9
Middle Saxon handmade	MSHM	M.7th-M.9th c.	1	9		1
North French blackware	NFBW	7th-9th c.	17	324	0.20	9
North French greyware	NFGW	7th-9th c.	1	9	0.05	1
Badorf Ware	BAD	8th-9th c.	2	33		2

Table 40: Middle Saxon pottery by fabric

B.8.5 A few imported wares are traditionally recorded as Middle Saxon and are included in Table 40, but all extend into the early part of the Late Saxon period. Given the much larger group of the latter in this assemblage, a Late Saxon date seems more likely and the sherds are discussed below.

Late Saxon

B.8.6 Table 41 shows the quantities of Late Saxon pottery by fabric.

Description	Fabric	Date range	No	Wt/g	eve	MNV
Thetford-type ware (Ipswich)	THETI	M/L.9th-11th c.	472	6106	6.29	463
Thetford-type ware	THET	L.9th-11th c.	26	856	0.15	23
Stamford Ware	STAM	850-1150	1	1		1
Late Saxon shelly wares	LSSH	9th-11th c.	4	235		2
St. Neots-type ware	NEOT	875-1100	32	746	0.42	30
Saxo-Norman Wares (general)	SXNO	850-1150	7	129	0.19	7

Table 41: Late Saxon pottery by fabric

B.8.7 Thetford-type wares were the most frequent find, with 498 sherds representing up to 486 vessels. Most of these were in Ipswich fabric, but a few were not and have been recorded as THET or SXNO, the latter being less like Thetford-type wares from elsewhere in the region and potentially non-local. Also of Late Saxon date were a few fragments of St Neots-type ware and another Late Saxon shelly ware (perhaps from Lincoln or London).

B.8.8 Thetford-type ware rims included a number of jars of small (AA, 9 vessels), medium (AB, 26 vessels) and large (AC, 5 vessels) types, as well as pieces of two spouted pitchers/handled jars (AD/AE; Fig. B.8.1, nos 1 and 2), and two uncategorised jars. Rim forms included early, intermediate and late types. A BB4 bowl rim (Fig. B.8.1, no. 3) and fragments of two lamps were also found (Fig. B.8.1, no. 4). Ten vessels had applied thumbed strips and one short wide strap handle was found, suggesting that larger jars and storage vessels were also present in the assemblage. Nine bases were sagging and 45 were flat. Forty-eight vessels had girth-grooving of the upper half, and one THET

vessel was rouletted. Most body and base fragments were sooted and some contained limescale deposits internally.

- B.8.9 St Neots-type ware was more frequent in East Anglian towns, particularly this far east, in the 11th century. This group included rims of three bowls (Fig. B.8.1, no. 5), all inturned types, and a rounded wedge (type 6) jar rim. Stamford ware was represented by one small body fragment.
- B.8.10 Saxo-Norman sherds included a small jar with a parallel sided everted (type 4) rim, and a flat base.
- B.8.11 As noted above, the French blackwares, greyware and Badorf ware sherds span the Middle and Late Saxon periods but are probably of Late Saxon date in this assemblage. Most pieces were body sherds, but there were two jar rims in the North French fabrics, comprising a tapered form in NFBW and a flanged form in NFGW (*cf.* Hodges 1981, fig. 4.1 no. 9). Most of the blackwares were burnished externally and had corrugated necks (Fig. B.8.1, nos 6 and 7).

Medieval wares

- B.8.12 Early medieval wares are generally handmade wares of 11th–12th-century date, while high medieval coarsewares are wheelmade wares which are generally of 12th–14th-century date. Table 42 shows the quantities of early and high medieval pottery by fabric.

Description	Fabric	Date range	No	Wt/g	eve	MNV
Early medieval ware	EMW	11th-12th <i>c.</i>	2	9		2
Early medieval ware East Suffolk	EMWES	11th-13th <i>c.</i>	1	2		1
Early medieval Essex micaceous type	EMEMS	11th-13th <i>c.</i>	6	36	0.10	6
Early medieval ware gritty	EMWG	11th-13th <i>c.</i>	1	3		1
Early medieval ware flinty	EMWFL	11th-12th <i>c.?</i>	2	21		2
Early medieval ware with grog	EMWGR	11th-13th <i>c.</i>	1	21		1
Early medieval ware shelly (Essex)	EMWS	11th-12th <i>c.</i>	2	107	0.10	2
Early medieval ware shelly with sand	EMSS	11th-13th <i>c.</i>	2	9		2
Early medieval sparse shelly ware	EMWSS	11th-13th <i>c.</i>	6	48	0.05	6
Early medieval sparse shelly gritty ware	EMWSG	11th-13th <i>c.</i>	1	14		1
Yarmouth-type ware	YAR	M.11th–12th <i>c.</i>	11	80	0.05	11
Pingsdorf Ware	PING	10th-13th <i>c.</i>	6	48		6
Andenne Ware	ANDN	12th-13th <i>c.</i>	2	37		1
Medieval sandy coarseware	MCW	12th-14th <i>c.</i>	3	38	0.05	3
Medieval coarseware gritty	MCWG	L.11th-13th <i>c.?</i>	7	66		1
Hollesley coarseware	HOLL	L.13th-14th <i>c.</i>	2	16		2
Medieval East Suffolk coarseware	MESCW	13th-14th <i>c.</i>	2	27		2
Ipswich medieval coarseware	MIPS	L.13th-E.14th <i>c.</i>	7	52		6
Medieval South Suffolk coarseware	MSSCW	12th-14th <i>c.</i>	2	18		2
Unprovenanced glazed	UPG	L.12th-14th <i>c.</i>	3	249	0.30	3
Unidentified medieval glazed whiteware	UNWW	11th-14th <i>c.</i>	1	14		1
Ipswich glazed ware	IPSG	L.13th-E.14th <i>c.</i>	8	58		8
Gritty Rhenish proto-stoneware	RHSW	13th-14th <i>c.</i>	4	116		1

Table 42: Early and high medieval pottery by fabric

- B.8.13 Sherds of early and high medieval date were not common in this assemblage, but there was a wide variety of fabrics. The coarsewares were typically sandy or sparse shelly types. One large fragment of a jar rim was probably an Essex shelly ware (Fig. B.8.1, no. 8), and another jar rim in EMWSS was more typical of Suffolk types. An Essex

micaceous ware jug rim was also found. High medieval wares included an MCW jar rim and an MCWG jug rim.

- B.8.14 The few medieval glazed wares included some examples of Ipswich glazed ware and some unprovenanced sherds. A large fragment of a rod handle was recovered from pit fill (750) (Fig. B.8.1, no. 9). It is glazed with a pale greenish glaze and stamped with a small rectangular stamp divided into three small squares. The fabric is fine sandy with few other inclusions, and is light grey with buff surfaces. The handle tapers to the point where it is broken, with the wider end attached to the remains of a body sherd. The fragment is unprovenanced, but may be a London product or an import. A rim fragment in a similar fabric with splashed glaze on the neck was found in (1430) and may be from a North Lincolnshire jug (Fig. B.8.1, no. 10).
- B.8.15 Imported wares of medieval date included Andenne ware, Rhenish proto-stoneware, an unidentified gritty whiteware with yellow glaze (Fig. B.8.1, no. 11), and Pingsdorf ware. Coutts (1991, 136) states that the majority of Pingsdorf ware in this country dates to the 11th century and later, although it is occasionally found in Ipswich from the second half of the 9th century.

Late medieval and early post-medieval wares

- B.8.16 Table 43 shows the quantities of late medieval wares by fabric.

Description	Fabric	Date range	No	Wt/g	eve	MNV
Midland Purple-type ware	MIDP	L.14th-16th c.	4	257		1
Late medieval and transitional wares	LMT	M/L.14th-M.16th c.	2	68		2
Late Colchester-type Ware	COLL	15th-16th c.	1	27		1
Late Essex-type wares	LMTE	15th-16th c.	18	1268	0.38	6
Unprovenanced late medieval	NLLM	15th-16th c.	2	114	0.16	2
Siegburg Stoneware	SIEG	E.14th-17th c.	2	13		2
Raeran/Aachen Stoneware	RAER	L.15th-16th c.	1	17		1
Dutch-type redwares	DUTR	15th-17th c.	6	211	0.30	2

Table 43: Late medieval pottery by fabric, in approximate date order

- B.8.17 Late medieval pottery was also infrequent, but included local and Essex-type wares, as well as some Dutch redwares and unprovenanced wares. Four sherds of a possible 'Midlands purple' ware vessel could equally be overfired Essex redware. Non-local wares included a jar with a collared rim (Fig. B.8.1, no. 12) and a few body and base fragments of Rhenish stonewares.
- B.8.18 Thirteen sherds of a large globular jug were recovered from brook fills 519 and 506. The jug is in a relatively fine, hard red fabric with occasional medium sand inclusions and has sparse clear glaze externally. The form is typical of examples from Colchester, but the fabric is finer than normal for the town. Similar pottery was made in Ipswich and elsewhere in Essex, but the provenance of this particular vessel is uncertain. The jug is painted with white slip curving lines and has a slip line around the neck and slip dashes on the rim, comparable with the Colchester ware 'late style' which Cotter (2000) dates to the later 15th and early 16th centuries. One other sherd in the same fabric was also recovered from brook fill (519) and has a thin all-over white slip externally with spots of yellowish glaze.
- B.8.19 Five large sherds of a Dutch-type redware cauldron or pipkin were also found in fills 519 and 506 and are likely to belong to the same period as the jug. This example has

a simple flaring rim, a rod handle with pinched angle, and partial clear glaze sparsely applied internally and externally. Comparable examples are found in Amsterdam in 15th-century contexts (*e.g.* Gawronski 2012, nos 216 and 221).

Post-medieval

- B.8.20 Post-medieval pottery (Table 44) included several local redwares (GRE, PMRE, IGBW, SPEC) and English tin-glazed earthenwares. Identified vessels included bowls (including an oval straight-sided type; Fig. B.8.1, no. 13), a plate and pipkins (Fig. B.8.1, no. 14).
- B.8.21 The central part of the base of a large tin-glazed earthenware platter or dish was recovered from layer 760. It was white-glazed on both surfaces with a footring base, and hand-painted with a blue octofoil motif centrally (Fig. B.8.1, no. 15). Comparable designs from Norwich are dated to the 17th century (Jennings 1981, fig. 86, nos 1391–3, 1395).
- B.8.22 Three sherds of a Border ware pipkin with an inturned lid-seated rim and yellow glaze internally were recovered as an unstratified find (99999). Pipkins of this type are common in mid 17th-century contexts in London (Pearce 1992).
- B.8.23 Imported wares comprised Dutch/German whitewares and Frechen stonewares.

Description	Fabric	Date range	No	Wt/g	eve	MNV
Iron-glazed blackwares	IGBW	16th-18th <i>c.</i>	3	20	0.07	2
Glazed red earthenware	GRE	16th-18th <i>c.</i>	6	241	0.14	6
Post-medieval redwares Essex type	PMRE	16th-18th <i>c.</i>	3	181	0.22	1
Border ware	BORD	16th-18th <i>c.</i>	3	82	0.27	1
Dutch/German-type whitewares	DUTW	16th-18th <i>c.</i>	5	69	0.10	5
Tin glazed earthenwares	TGE	16th-18th <i>c.</i>	25	950	1.48	5
Frechen Stoneware	FREC	16th-17th <i>c.</i>	2	43		2
Speckle-glazed ware	SPEC	17th-18th <i>c.</i>	2	42		2
Westerwald stoneware	WEST	17th-19th <i>c.</i>	4	13		2

Table 44: Post-medieval pottery by fabric, in approximate date order

Modern

- B.8.24 The modern group was dominated by a number of sherds of large stoneware bottles, some with stamped labels for Ipswich merchants, and two with maker's stamps (Price, Bristol). Other pottery of this period included factory-made earthenwares and stonewares, of which most vessels were tablewares and storage vessels. Imported wares of this period included a Chinese porcelain bowl (Fig. B.8.1, no. 16) and a few fragments of Westerwald stoneware. Table 45 shows the quantities of modern wares by fabric.

Description	Fabric	Date range	No	Wt/g	eve	MNV
English Stoneware London-type	ESWL	M.17th-E.20th <i>c.</i>	3	43	0.48	3
English Stoneware Nottingham-type	ESWN	L.17th-L.18th <i>c.</i>	6	121	0.32	3
English Stoneware Staffordshire-type	ESWS	L.17th-M.18th <i>c.</i>	3	10	0.42	2
Chinese porcelain	PORCC	16th-21st <i>c.</i>	19	57	1.00	1
Porcelain	PORC	18th-20th <i>c.</i>	3	17	0.31	2
Staffs white salt-glazed stonewares	SWSW	18th <i>c.</i>	1	2		1
Refined white earthenwares	REFW	L.18th-20th <i>c.</i>	17	609	0.37	8
Pearlware	PEW	L.18th-M.19th <i>c.</i>	1	2	0.05	1

Description	Fabric	Date range	No	Wt/g	eve	MNV
Ironstone	IRST	E.19th+	1	14		1
English Stoneware	ESW	19th-20th c.	70	4411	2.00	64

Table 45: Modern pottery by fabric, in approximate date order

Illustration catalogue (Fig. B.8.1)

1. THET1 corrugated shoulder of ?spouted pitcher. Layer 1389. Period 4.1
2. THET spouted pitcher, rim type 6, rouletted and applied strip decoration. Layer 1146. Period 4.1
3. THET1 bowl (type BB4) with tapered beaded rim. Fill 1227 of pit **1226**. Period 1
4. THET1 baluster lamp, scratched ?letters internally. Fill 1161 of ditch **1160**. Period 1
5. NEOT bowl, inturned rim. Fill 1210 of ditch **1208**. Period 1
6. NFBW corrugated neck. Fill 1185 of ditch **1184**. Period 1
7. NFBW jar, tapered everted rim. Fill 1058 of ditch **1056**. Period 1
8. EMWS jar rim, upright plain type. Layer 1146. Period 1
9. UPG jug handle, stabbed with small groups of 3 squares forming short rectangles. Fill 750 of pit **751**. Period 2
10. UPG jug, upright flat-topped rim. Layer 1430. Period 2
11. UNWW body sherd, curving applied thumbed strip. 99999 (unstratified)
12. NLLM jar, collared rim with incised diagonal lines. Fill 1331 of pit **1330**. Period 4.2
13. GRE bowl, lid-seated beaded rim, flat base. Layer 1389. Period 4.1
14. PMRE ?pipkin, lid-seated rim. Layer 1430. Period 2
15. TGE footring base with blue octofoil painted decoration. Layer 760. Period 3
16. PORCC bowl, plain rim and footring base, blue floral hand-painted decoration. Layer 1288. Period 4.1

Pottery by site phase

B.8.25 Table 46 shows the distribution of pottery by pot period and site phase.

Pot period	Period 0	Period 1	Period 2	Period 3	Period 4.1	Period 4.2	Unphased
Early Saxon		28					
Middle Saxon	1	51	3	4	2	2	2
Late Saxon		457	42	6	7	6	24
Early medieval	1	19	19	1		1	
Medieval		7	20	7	4		3
Late medieval		1	2	22	10	6	
Post-medieval			3	3	53	1	3
Modern					77	21	11
<i>Totals</i>	<i>2</i>	<i>563</i>	<i>89</i>	<i>43</i>	<i>153</i>	<i>37</i>	<i>43</i>

Table 46: Pottery by pot period and site period (sherd count)

B.8.26 Features of Period 1 (mid-9th to mid-11th century), contained some Early and Middle Saxon material, but was dominated by Late Saxon pottery with a few early medieval sherds and some intrusive later material. A smaller group of similar make-up was recovered from Period 2 (mid-11th to mid-16th century) but most could be contemporary with the broad date range of the period. The Period 3 (mid-16th to 17th century) group contained a high proportion of earlier wares, although some of the late

medieval wares could fit with the earliest date of this phase. Periods 4.1 and 4.2 were the only phases to contain modern material, but residual finds were still relatively frequent. The unphased material was all unstratified and will not be considered further.

Period 0 - Brook

B.8.27 A body sherd of GIPS came from brook fill 507, and a sherd of PING came from brook fill 401.

Period 1 – Late Anglo-Saxon

B.8.28 Trench 6 features and layers assigned to Period 1 contained 44 sherds, of which 38 were THETI, two were SXNO and three were NEOT. One SIPS sherd was probably residual in layer 603. Most of the sherds were from this layer, including three jar rims, a wide strap handle and sherds with applied thumbed strips from a large storage vessel. Pit 606 contained a bowl rim of NEOT and 16 sherds of THETI including a jar rim. The jar rims in this group were all intermediate types, suggesting a late 10th/11th-century date.

B.8.29 Pottery was recovered from two pit fills in Area 8, 1036 and 1038. These produced five sherds in total (1 BAD, 3 THETI, 1 THET), including a handle, and a jar rim of 11th-century type.

B.8.30 The majority of sherds in this period were recovered from features and layers in Area 9. Seventy-nine sherds came from a buried soil (1070, 1075 and 1146) including residual Early Anglo-Saxon, Ipswich and Badorf wares (1 ESCF, 1 ESO1, 7 SIPS, 1 BAD), 63 Late Saxon sherds (53 THETI, 5 THET, 1 SXNO, 4 NEOT), five early medieval sherds (1 EMWS, 1 PING, 1 YAR, 2 ANDN) and a presumably intrusive base fragment of MCW. This group included rims of 14 Late Saxon vessels (13 jars, 1 spouted pitcher) with early, intermediate and late rim forms, and an EMWS jar rim. Overall, the group may be of mid to late 11th-century date and the ANDN sherds may also be intrusive, although it is possible that they could be earlier (Huy-type?) wares from the same region of Belgium.

B.8.31 Ditch 1182/1186 contained two sherds of Early Saxon handmade wares (ESSS, ESO1), a fragment of North French blackware and a small sherd of THETI.

B.8.32 A group of linear ditches (fills 1159, 1161, 1181, 1185, 1191, 1195 and 1204) forming a possible plot boundary produced 104 sherds of which at least 27 were residual (1 ESCM, 11 ESO1, 2 ESO2, 1 ESSM, 1 GIPS, 10 SIPS, 1 MSHM). Up to 75 sherds were of Late Saxon date (57 THETI, 5 THET, 1 SXNO, 1 NEOT, 10 NFBW, 1 NFGW) but only a few rims were recovered including two small THETI jars and a lamp, and a NFGW jar rim. A handle from a handled jar or spouted pitcher in THET was also found. Early medieval wares comprised one sherd each of EMWG and YAR, suggesting a date no earlier than the 11th century for the fills of these ditches.

B.8.33 The fills of a north–south ditch (fills 1040, 1041, 1050, 1055, 1057, 1058, 1120, 1122, 1152, 1153, 1209, 1210, 1211, 1217 and 1218) contained 173 sherds. Eight were residual (1 ESO1, 2 GIPS, 5 SIPS). The majority, 159 sherds, were of Late Saxon date (137 THETI, 1 THET, 2 SXNO, 14 NEOT, 3 LSSH, 2 NFBW) including rims of ten jars (9 THETI, 1 NFBW), a large storage vessel (THETI type AF), two bowls (1 NEOT, 1 THETI)

and the rims/handles of three handled jars or spouted pitchers. Two early medieval sherds (EMWGR, EMEMS) was also recovered, again suggesting an 11th-century date for the fill, although the EMEMS sherd was a jug rim and may be later. One small sherd of Dutch-type whiteware with internal yellow glaze is presumed intrusive. A radiocarbon date was obtained for fill 1218, which suggests a late 10th or early 11th-century date (1048 ± 26 BP; 973-1033 cal AD at 88.0% probability).

B.8.34 Ditch **1101** contained two body sherds, a fragment of THETI with applied thumbed strips, and a piece of NEOT.

B.8.35 Gully fill 1095 contained a body sherd of EMWFL, and gully fill 1167 contained a small fragment of LSSH.

B.8.36 Six post-holes contained pottery, although generally only in small quantities, the exception being **1188** which produced 26 sherds. A residual sherd of ESO1 came from (1203). Two sherds were found in 1064, a lamp pedestal base and a jar rim of THETI. In 1068 there was a base fragment of THETI, and 1133 contained two body sherds of THETI. An EMWFL body sherd came from 1071. Fill 1189 contained residual sherds of ESSS and SIPS, 21 fragments of THETI including a small intermediate-type jar rim, one THET, one NEOT and one EMEMS.

B.8.37 Sixteen pits contained pottery as shown in Table 47. The largest group was recovered from pit **1061/1091** which contained 33 sherds including early and high medieval wares which may be intrusive, and three THETI jar rims of both early and late types. Pit **1226** contained 31 sherds of entirely Late Saxon date and this group included a NEOT bowl rim, and three jar and one bowl rims of THETI – the jar rims were of early and intermediate types, which accords with the lack of early medieval ware from this feature. All of the other pits contained ten sherds or fewer. Pit **1080** contained some ?intrusive medieval pottery and there were residual Early Anglo-Saxon sherds in **1176**, but both also contained largely Late Saxon wares, and the remainder of the pits contained entirely material of this date. As four pits contained North French black wares and no Middle Saxon pottery, this tends to confirm the late date of the North French pottery at this site.

Fabric	1059	1061/ 1091	1076	1080	1099	1103	1109	1136	1147	1168	1170	1176	1178	1192	1200	1226
ESO1												2			1	
ESO2												1		1		
ESSS												1				
GIPS		1														
SIPS		2														
NFBW		1					1	1	1							
THETI	1	21	5	7	1	1	3	2	4	5	2	2	1	2		24
THET									2							2
NEOT		1										1				5
PING		1														
YAR		1														
EMEMS		2		1												
EMSS		1														
MESCW		1														
MSSCW				2												

Fabric	1059	1061/ 1091	1076	1080	1099	1103	1109	1136	1147	1168	1170	1176	1178	1192	1200	1226
UPG		1														

Table 47: Pottery from pits in Area 9, Period 1, in approximate date order

Period 2 - medieval

- B.8.38 The majority of pottery from this period was recovered from two buried soil layers, (211 and 210) in Test Pit 2. Seven sherds (4 THETI, 2 YAR, 1 EMWS), all body fragments, came from the lower layer (211) and suggested an 11th-century date for this deposit. Fifty-nine sherds were recovered from 210, the majority of which were early and high medieval. Two sherds of SIPS, one of STAM and 27 of THETI are assumed to be residual in this context. Four sherds of YAR included two jars with everted rims, and other early medieval wares included one EMSS, two EMW, one EMWSG, and three EMWSS including a jar rim of 12th/13th-century type. The high medieval wares included seven sherds of an MCWG jug, one HOLL, two MIPS, one MCW and seven IPSG. The latter suggests a date no earlier than the late 13th century for the final deposits in this layer.
- B.8.39 In Trench 3, pit fill 302 contained three sherds of THETI, which are presumed to be residual in this phase. Similarly, a sherd of THETI from pit **751** in Trench 7 is likely to be residual, as it was found with a large ?jug handle of an unprovenanced glazed ware.
- B.8.40 Layers 1453 and 1457 in Area 10 contained 12 sherds, most of which were residual (1 GIPS, 6 THETI), with two YAR, two EMWSS and one EMWES suggesting a mid 11th-century or later date.
- B.8.41 Pottery recovered from two layers in Area 11 was all relatively late. There were two sherds of LMTE from layer 1441 including a possible chafing dish base, and layer 1430 contained a large fragment of an unprovenanced glazed jug and three fragments of a post-medieval redware pipkin. The group may be of 16th-century date.

Period 3 – post-medieval

- B.8.42 Test Pit 2 produced nine sherds from two layers assigned to this phase. All were probably residual (1 SIPS, 1 GIPS, 1 EMWSS, 2 MIPS, 1 IPSG, 1 HOLL, 1 SIEG, 1 COLL) although it is possible that the Siegburg and Late Colchester sherds could date to the 16th century.
- B.8.43 In Test Pit 3 there was a base fragment of a Frechen stoneware vessel of 16th/17th-century date in layer 305.
- B.8.44 Buried soils in Trench 4 produced a fragment of MIPS from (405) and a THETI base from 406, both residual in this period. Two deposits within brook **507** produced 22 sherds, of which at least three were residual (1 GIPS, 1 THET, 1 SXNO). The remainder were broadly of late medieval/transitional date and comprised five sherds of a DUTR cauldron, 13 sherds of an LMTE jug and one other LMTE sherd; sherds of the two main vessels occurred in both contexts.
- B.8.45 Deposit 760 in Trench 7 contained a residual fragment of MESCW and a large footring base fragment of a decorated TGE vessel.
- B.8.46 Area 11 layers 1409 and 1429 produced seven sherds (1 SIPS, 1 THET, 2 THETI, 1 MCW, 1 SIEG, 1 FREC). The two stoneware sherds suggest a 16th-century date.

Period 4.1 - c. 18th/19th-century malthouses

B.8.47 Much of the pottery from this period was recovered from demolition and rubble layers, as shown in Table 48. Of most interest in this group were a Chinese porcelain bowl and several early British stoneware vessels in backfill 1288 and fragments of several later stoneware bottles in 1389, which were presumably some of the latest stock of packaging owned by the maltings when it was demolished. Very little residual material was recovered from these layers.

Fabric	1260	1282	1288	1296	1307	1309	1334	1345	1389
SIPS	1				1				
THETI									2
LMT							1		
MIDP					4				
RAER		1							
DUTW	1	1							
GRE				1	1	1			1
IGBW		2							
SPEC				1			1		
PORCC			19						
TGE	1		13					10	
WEST			3						
ESWL			2						
ESWS			3						
ESWN	1								
ESW									65
PEW									1
IRST									1
REFW									1

Table 48: Pottery from rubble, demolition etc. in Period 4.1, in approximate date order

B.8.48 Structural features which produced pottery in this period comprised a surface (1276), a wall (1440) and a foundation trench (1396). Post-medieval redwares and whitewares were the main finds from the surface (2 DUTW including a bowl, 1 GRE bowl, 1 IGBW) with one small residual sherd of THET. Four residual sherds of THETI were built into the wall, and the foundation trench contained four sherds of an early Rhenish stoneware vessel.

Period 4.2 - early c.20th furniture factory

B.8.49 Like Period 4.1, most of the pottery from this phase came from levelling and other layers, as shown in Table 49. These layers contained only small quantities of pottery and most pre-dated the phase, with the possible exception of the ESW and REFW. However, the ESW included some bottles which probably related to the Period 4.1 maltings.

Fabric	206	601	1042	1259	1320	1328	1423	1448	1451
SIPS			1						
THETI	3	1							
THET		2							
EMEMS	1								
LMT									1

Fabric	206	601	1042	1259	1320	1328	1423	1448	1451
LMTE		1							1
NLLM						1			
GRE					1				
WEST							1		
ESWL								1	
ESWN								4	1
ESW									3
REFW				1				10	

Table 49: Pottery from rubble, demolition etc. in Period 4.2, in approximate date order

B.8.50 Three sherds were recovered from a pit 1330, all residual (1 GIPS, 1 NLLM, 1 DUTR). Structure.

Discussion

B.8.51 A small but significant group of Early Anglo-Saxon pottery represents the earliest post-Roman activity on the site. Evidence for occupation of this period in the town is rare, but there is a growing concentration of finds close to the north bank of the river, south of the Buttermarket cemetery (SCCAS n.d.). The site also produced only a relatively small quantity of Middle Saxon pottery, suggesting that it may not have seen intensive activity in this period.

B.8.52 The largest period group of pottery from the site relates to the Late Saxon period. Although some of the jar rims present were of 'early' type, the majority belonged to the second half of the period, and many were associated with St Neots-type wares and early medieval wares, again suggesting an 11th-century date for this activity. However, some or all of the North French wares from the site appeared to belong to the early Late Saxon period rather than the Middle Saxon period, so this would suggest that there was an increase in activity from the (mid?) 9th century onwards. The range of vessels present is typical of the period and there were no unusual forms. Most of this group was recovered from Period 1 features with little occurring as residual material, certainly beyond the medieval period.

B.8.53 Although there was an increasing diversity of fabrics in the medieval period, the actual quantity of both early and high medieval wares was relatively low. This is unfortunately typical of Ipswich and may relate to the loss of these levels due to post-medieval levelling and cellar-digging across the town. Nevertheless, this group is typical of the wares found in south-east Suffolk and includes some wares made within Ipswich itself, and some imported wares from the Rhineland and the Low Countries. Only 39 sherds of early and high medieval pottery were recovered from Period 2 features.

B.8.54 Late medieval and early post-medieval pottery was similarly rare on this site, and again may reflect the degree of later truncation. The pottery from Period 3 was dominated by late medieval wares. Much of this group comprised locally made earthenwares, most of which are comparable with Essex wares of the period, and several Rhenish stonewares. Red earthenwares of post-medieval date were also relatively infrequent, but were supplemented by non-local English and Dutch whitewares and later Rhenish stonewares. Again, there is nothing unusual in this period group.

B.8.55 The latest pottery from the site included a few table wares including a fragmented Chinese porcelain bowl and some factory-made whitewares, but was largely dominated by brown stoneware vessels, particularly a group of bottles which may have belonged to the maltings towards the end of its life, and which were found in related demolition rubble.

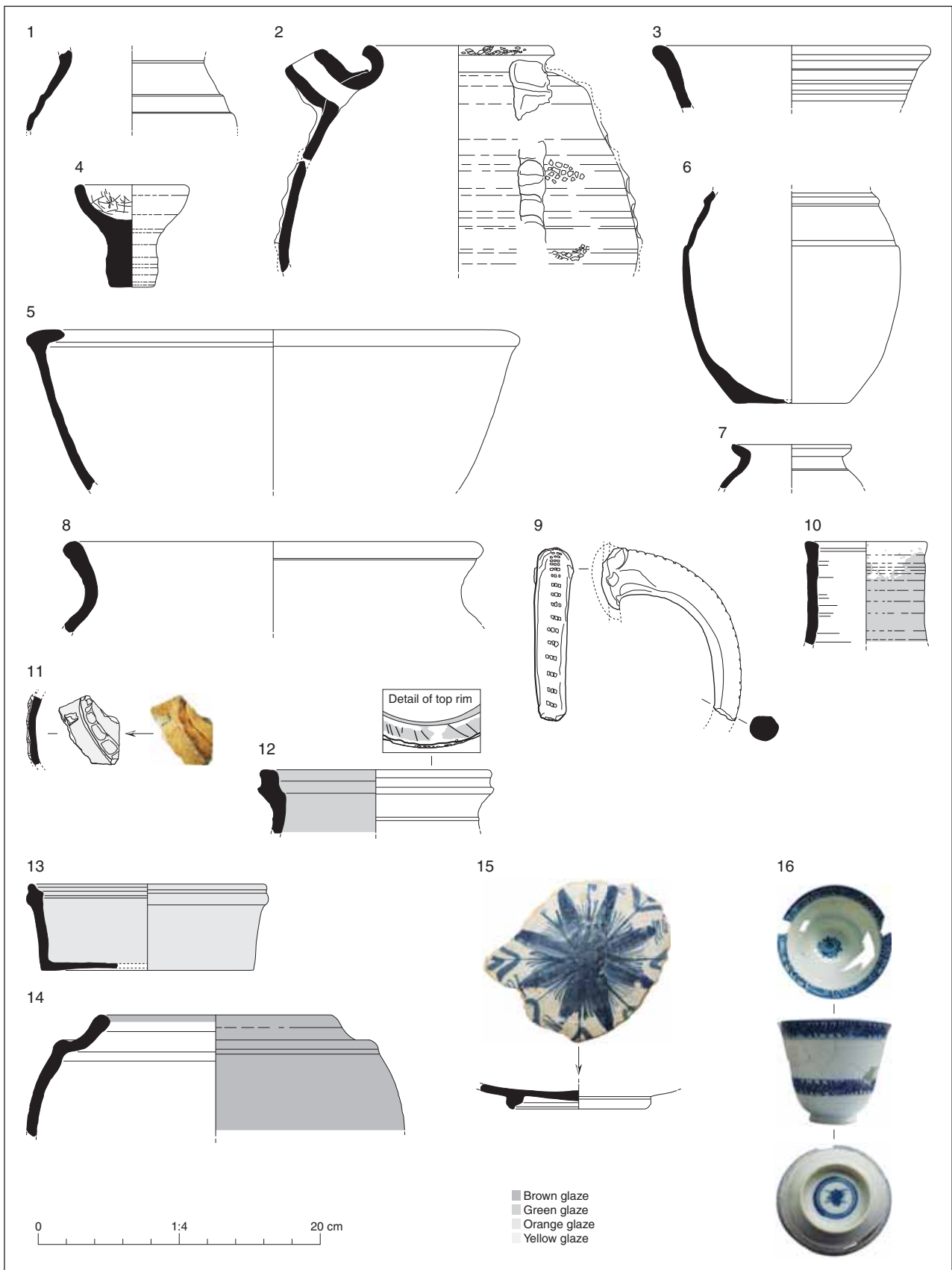


Figure B.8.1: Pottery

B.9 Ceramic building material

By Sue Anderson

Introduction

B.9.1 A total of 530 fragments of ceramic building material (CBM) weighing 222,672g was collected from 72 contexts.

Methodology

B.9.2 As agreed on site, brick samples were taken from each of the walls making up the major structure. As far as possible, one complete and one half brick of similar type were collected so that one complete set of measurements could be recorded and the fabric could be observed in the broken brick. The assemblage was quantified (count and weight) by fabric and form. Fabrics were identified on the basis of macroscopic appearance and main inclusions. The width, length and thickness of bricks and floor tiles were measured, but roof tile thicknesses were only measured when another dimension was available. Forms were identified based on work in Norwich (Drury 1993), which is closely comparable with Ipswich in terms of CBM types. Other form terminology follows Brunskill's glossary (1990). Observations were entered onto an Access database, which forms the archive catalogue.

The assemblage

B.9.3 Table 50 shows the quantification by period and form. The majority of fragments fell into the 'roofing' category.

Period	Type	Description	Code	No. frags	Wt/kg
Roman?	Roofing	Imbrex?	IMB?	1	27
Medieval	Roofing	Plain roof tile: medieval	RTM	69	2339
			RTM?	6	182
	Flooring	Relief floor tile	RFT	1	91
		Floor tile	FT	1	128
Post-medieval/modern	Roofing	Plain roof tile: late/post-medieval	RTP	199	8227
			RTP?	4	152
		Pantile	PAN	5	1087
			PAN?	1	32
	Walling	Later brick	LB	118	186380
			LB?	24	32
		Dutch brick	DUTB	7	4554
		Brick	B	2	3268
	Flooring	Floor brick	FB	4	7535
		Quarry floor tile	QFT	2	2107
	Misc	Drainpipe	DP	1	140
		Malting tile	MALT	17	6282
Undated		Unidentified	UN	68	109
<i>Totals</i>				<i>530</i>	<i>222672</i>

Table 50: CBM by type and form

?Roman CBM

B.9.4 One heavily abraded fragment may be a piece of Roman imbrex. It was found in association with Saxon and medieval pottery in Period 1 layer 1146 (Area 9).

Medieval CBM

B.9.5 There were 75 fragments of probable or possible medieval roof tile, most of which were identified based on the presence of a reduced core or the coarseness of the fabric. No fragments were glazed. Table 51 shows the distribution of medieval forms by fabric.

Fabric	Code	RTM	RTM?	RFT	FT
coarse sandy	cs	2			
medium sandy	ms	16	1	1	
fine sandy	fs	36			1
fs with coarse quartz	fscq	7			
ms with coarse quartz	mscq	1	4		
fs with flint	fsf	1			
ms with flint	msf	2			
fs with ferrous oxide	fsfe	1			
ms with ferrous oxide	msfe	1			
fs with grog	fsg		1		
ms with chalk	msc	1			
ms with clay pellets	mscp	1			

Table 51: Medieval CBM fabrics and forms (fragment count)

B.9.6 The majority were in fine or medium sandy fabrics with few other inclusions. Circular peg holes were noted in six fragments of RTM, one of which had two holes. A few pieces had traces of white mortar adhering.

B.9.7 Also of medieval date were two pieces of floor tile. A worn fragment of medieval floor tile from Period 3 occupation layer 1409 (Area 11) had a reduced core and was very worn. A piece of ?relief floor tile from Period 2 buried soil layer 1441 (Area 11) had possible white slip under a clear glaze on the worn surface, and patchy coarse sandy lime mortar on the base.

Post-medieval and modern CBM

Roofing

B.9.8 A total of 209 roofing fragments (9498g) were collected. These comprised plain roof tiles and pantiles. Table 52 shows the quantities of roofing material by fabric and form.

Fabric	Code	RTP	RTP?	PAN
fine sandy	fs	136	3	3
	fs?	1		
fsc with ferrous oxide	fscfe			1
fs with clay pellets	fscp	31		
fs with ferrous oxide	fsfe	3		
fsfe with grog	fsgfe	1		
fs micaceous	fsm	2		1
fsm with grog	fsgm	8		
fsm with clay pellets	fsmcp	9		
medium sandy	ms	5	1	
ms with flint	msf	3		

Table 52: Post-medieval roofing material by fabric and form

B.9.9 All post-medieval roof tiles were in red-firing fine and medium sandy fabrics, including a high proportion of fine sandy micaceous with grog inclusions. Fourteen fragments had peg holes, the majority circular with only one square. Two tiles had two holes, one circular and the other square. A few pieces had traces of white lime mortar on one surface, but otherwise there were no noteworthy features.

B.9.10 One complete tile was recovered as sample <32> from Period 4.1 maltings wall 1250 (Area 10), and measured 235 x 168 x 14mm.

Walling

B.9.11 The brick recovered from the site represents a sample of the material present in wall foundations and other structures, as well as fragments recovered from stratified contexts. Table 53 shows the fabrics and forms present.

Fabric	Code	LB	LB?	DUTB	B
compressed shale	comp				2
fine sandy	fs	1	24	1	
fs with clay pellets	fscp	3			
fs with flint	fsf	4			
fs with ferrous oxide	fsfe	2			
fs with grog	fsg	27			
	fsg?	1			
fsg with ferrous oxide	fsgfe	62			
	fsgfe?	2			
fs micaceous with clay pellets	fsmcp	2			
fs micaceous with ferrous oxide	fsmfe	1			
ms micaceous with grog	msgm	7			
msg with ferrous oxide	msgfe	2			
white-firing fine sandy	wfs	2		5	
wfs with voids	wfv			1	
unidentified	un	2			

Table 53: Post-medieval walling by fabric and form

B.9.12 The post-medieval bricks were in a variety of mainly oxidised fabrics with fine sand and grog, with or without ferrous oxide, being the most common types. Forty-four lengths (218–251mm), 86 widths (100–123mm) and 89 thicknesses (43–72mm) could be measured. Full measurements and suggested dates are included below (see ‘CBM by phase’). The majority date either to the 17th/18th–19th centuries or more certainly to the 19th century. A number of bricks had been subject to intense heat, suggesting use in hearths, fireplaces or industrial structures. A few had diagonal or parallel skintling marks (the marks which form on the stretchers of bricks as they are laid out to dry prior to firing), and these may provide a clue to dating – the transition from diagonal to parallel is suggested to occur towards the end of the 18th century, with some exceptions in rural Norfolk (Rose 2000). Diagonal skintlings were noted on bricks from Period 4.1 wall **1248** in Area 10, Period 4.1 walls **1372** and **1433** in Area 11, Period 4.2 wall **1287** in Area 10 and Period 4.2 floor **717** in Trench 7.

B.9.13 Five complete or near-complete ‘Dutch’ bricks were recovered from Period 4.2 wall **708** (Trench 7). The red brick samples from this wall measured 241–246 x 118–120 x 55–56mm, and were in a medium sandy micaceous grogged fabric, similar to many of the roof tiles from this site. The complete ‘Dutch’ brick measured 162 x 65 x 36mm. The presence of this type of brick in the wall suggests a 17th-century or later date, and

the size of the red bricks would be consistent with this date. However, one of the 'Dutch' bricks showed considerable wear on one stretcher, as if it had been used in a floor, perhaps suggesting re-use of these bricks in the wall at a later date. The worn surface also had a drilled hole in it, c.7mm in diameter. Two other larger Dutch-type bricks were recovered from Period 4.1 maltings wall **1249** (Area 10), the complete example measuring 182 x 87 x 41mm, and the half sample measuring 90 x 40mm.

- B.9.14 One fragment and one complete compressed shale bricks of 19th/20th-century date were both frogged and one, from rubble cellar backfill (107), had a V-shaped frog and the L B C / PHORPRES mark used by the London Brick Company. This brick also had a rectangular-section groove in the header. The other brick of this type was from a rubble layer (1297). Both had cement mortar adhering.

Flooring

- B.9.15 Table 54 shows the quantities of floor tile and brick by fabric.

Fabric	Code	FB	QFT
fine sandy with grog and ferrous oxide	fsgfe	1	
white-firing fine sandy	wfs	1	1
wfs with grog	wfg	2	1

Table 54: Post-medieval flooring by fabric and form

- B.9.16 Four fragments of three floor bricks and two pieces of quarry floor tiles were collected. The majority were in white-firing gault clays typical of the 18th/19th centuries. The quarry tiles were incomplete, but based on the thicknesses (40-41mm) they were pieces of larger tiles of this type. The floor bricks measured 242-245 x 112-120 x 40-55+mm thick, with the thickest being the red brick. All fragments in this category showed signs of wear, indicating that they had been used in surfaces, but only two fragments were found in floors – one QFT and one FB were from Period 4.2 internal surface 1265 (Area 10).

Miscellaneous and unidentified

- B.9.17 A piece of brown-glazed Victorian drainpipe was recovered from Period 4.1 demolition 1389 (Area 11).
- B.9.18 Fragments of several malting tiles were recovered from Period 4.1 rubble 1297 (Area 10), Period 4.2 backfill 1451 (Area 11) and as unstratified finds. None was complete but thicknesses were measured and ranged between 30–48mm. All had large circular 'cells' which were pierced with between three and eight smaller holes – the recesses varied in diameter between 21–29mm. Several of the unstratified fragments had thick mortar adhering, including on broken edges, suggesting that they had been re-used in rubble wall cores. Most were in white-firing fine sandy fabrics, with a few red examples also present. Those with only three holes were also the thinnest in the group, and this may suggest an early date. However, all appeared to be machine-made rather than hand-formed.
- B.9.19 The majority of the unidentified fragments were small, oxidised pieces from samples of Period 3 buried soils 207 and 208 (Trench 2). One small fragment from Period 1 ditch fill 1210 (**1208**, Area 9) was in a fine sandy fabric with very fine chalk inclusions and had black surfaces.

CBM by phase

B.9.20 Table 55 shows the distribution of CBM by period and site phase.

CBM Period	Type	Period 1	2	3	4.1	4.2	4.3	Un
Rom?	Roofing	1						
Med	Flooring		1	1				
	Roofing	2	39	33	1			
PMed	Flooring			1		5		
	Misc				1	4		12
	Roofing	8	55	113	11	22		
	Walling	3		31	53	55	3	4
Mod	Misc				1			
	Walling				1		1	
Un	Unident	1		67				
<i>Totals</i>		<i>15</i>	<i>95</i>	<i>246</i>	<i>68</i>	<i>86</i>	<i>4</i>	<i>16</i>

Table 55: Distribution of CBM by period and site phase

B.9.21 Medieval CBM was recovered from site phases up to Period 4.1 but was residual in phases later than Period 2. A few fragments of post-medieval tile and brick were intrusive in Periods 1 and 2, but most of the post-medieval and later CBM was recovered from Periods 3 and 4. The CBM is discussed by phase below; unphased material will not be considered further.

Period 1 – Late Anglo-Saxon (Areas 8 and 9)

B.9.22 Several fragments of medieval and post-medieval CBM were recovered from posthole 1138 (1139) including a large fragment of a white-firing post-medieval (possibly Dutch) brick, another late brick fragment, two pieces of medieval roof tile and six fragments of post-medieval roof tile. These fragments were either intrusive or perhaps wrongly labelled.

B.9.23 A possible fragment of Roman *imbrex* and a possible pantile (perhaps also an *imbrex*?) came from occupation layer 1146.

B.9.24 Ditch 1208 contained two small pieces of late brick and unidentified CBM, both of which could be intrusive.

Period 2 – medieval

B.9.25 The majority of the 95 fragments from this period came from buried soil 210 (Trench 2) and comprised mainly plain tile of medieval and perhaps late medieval date. However, one or two pieces of pantile were probably intrusive. A few other fragments were from deposit 211 (Trench 2) and layer 758 (Trench 7). The single fragment of relief floor tile came from buried soil 1441 (Area 11) in this phase.

Period 3 – post-medieval

B.9.26 This was the largest period group in the assemblage, although the 65 tiny unidentified pieces are included in the total 246 fragments. Most of this assemblage was from buried soils 208 (Trench 2), 1409 and 1449 (Area 11) and comprised largely redeposited medieval and late/post-medieval plain roof tile and a few small pieces of post-medieval brick. A fragment of medieval floor tile came from 1409, and there was

a post-medieval floor tile from layer 760 (Trench 7). Brook fill 507 added two more post-medieval roof tiles.

Period 4.1 – 18th/19th century malthouses

B.9.27 Sixty-eight fragments were collected from contexts assigned to this phase. The majority were samples of bricks from the malthouse walls.

B.9.28 Table 56 shows the bricks associated with the malt kiln furnace and associated structure straddling Areas 10 and 11. The kiln itself was built of bricks which are likely to be of 18th-century date. Thicker bricks, perhaps slightly later, were used to construct the floor and may indicate a replacement of this feature. Bricks in the walls surrounding the kiln all appear to be of 19th-century date. Only one fragment of CBM came from the demolition associated with this structure, a piece of brown glazed drainpipe from 1389.

Context	Feature type	Sample	Fabric	L	W	T	Date
1372	kiln	11	fsgfe	243	115	55	18th c.
		11	fsgfe		112	54	18th c.
		14	fsg	232	114	58	18th c.?
		14	fsgfe		115	55	18th c.?
1388	Kiln furnace floor	12	fsg	230	110	60	18th-M.19th c.
		12	fsg		112	60	18th-M.19th c.
1239	east wall	10	fsgfe	245	115	65	19th c.
		10	fsgfe		118		19th c.?
1238	north wall	15	fsg	250	118	72	19th c.
		15	fsg		116		19th c.
1237	west wall	16	fsgfe	239	112	65	19th c.
		16	fsgfe		112	64	19th c.

Table 56: CBM from the malt kiln furnace and associated structure

B.9.29 Walls to the south and south-east of the kiln (Area 11) contained the brick samples listed in Table 57. These were also broadly of 18th and 19th-century date, although the mixture of bricks in wall 1433 may indicate later repairs or re-use of earlier material.

Context	Feature type	Sample	Fabric	L	W	T	Date
1378	wall	5	fscp	237	116	55	18th c.?
1433	wall	1	fsg		115	52	17th-18th c.
		1	fsg?			55	17th-18th c.
		3	fsgfe		111	60	19th c.
		4	fsgfe	226	112	62	19th c.
		4	fsgfe		115	65	19th c.
1420	wall	24	fsgfe	228	107	60	19th c.
		24	fsgfe		108	61	19th c.
1439	wall	2	fsg	226	120	55	18th/19th c.?
		2	fsg		120	51-57	18th/19th c.?

Table 57: CBM from the walls south of the kiln house

B.9.30 Bricks from a well and related superstructure are shown in Table 58. Bricks from the well were associated with a powdery buff-coloured lime mortar and were probably slightly earlier than the related wall, which was built using a white fine sand and chalk mortar.

Context	Feature type	Sample	Fabric	L	W	T	Date
1410	well	6	fsgfe	242	114	55	18th c.?
		6	fsgfe		119	56	18th c.?
		7	fsgfe	220+	123	57	18th/19th c.
		7	fsgfe		108	58	18th/19th c.
1411	wall	8	fsgfe	228	107	62	19th c.
		8	fsgfe		110	61	19th c.

Table 58: CBM from well 1410

B.9.31 The group of walls at the northern end (Area 10) contained the bricks shown in Table 59. The two bricks from wall 1249 were Dutch-type and were broadly contemporary with the larger bricks from wall 1248. Bricks from the other walls in this area appeared to be slightly later. In addition, a complete post-medieval roof tile was sampled from wall 1250.

Context	Feature Type	Sample	Fabric	L	W	T	Date
1248	wall	31	fsf		115	56	17th-18th c.
		31	fsf	246	122	54	17th-18th c.
		34	fsgfe			50	17th-18th c.
		34	fsgfe	251	120	52	17th-18th c.
1249	wall	35	fs	182	87	41	17th-18th c.
		35	wfv		90	40	17th-18th c.
1250	wall	33	fsgfe		117	47+	18th-19th c.?
		33	fsgfe	243	113	58	18th-19th c.?
1266	wall	46	fsgfe		107	68	19th c.
		46	fsgfe	230	105	65	19th c.
1267	wall	44	fsg		118	58	18th-19th c.
		44	fsg	233	115	58	18th-19th c.
1270	structure	48	fsg		107	56	17th-19th c.?
		48	fsgfe	223	107	60	19th c.
1243	east wall	30	fsgfe?	200+	103	63	19th c.
		30	fsgfe?		110	63	19th c.

Table 59: CBM from the northern structures

B.9.32 Other CBM from this phase was recovered from surfaces and rubble deposits. Small fragments of late brick, medieval and post-medieval roof tile, a malting tile fragment and a piece of modern brick came from surface 1276 and rubble 1297 in Area 10, and samples of two 19th-century bricks were collected from surface 1454.

Evaluation Trench 7

B.9.33 Table 60 shows the samples collected from the western building footprint in Trench 7. This group included the Dutch-type bricks described previously in wall 708. All bricks in this group were earlier than the date of the factory. Also from this period in Trench 7 were fragments of plain roof tile and a piece of post-medieval brick from clay surface 727 and debris 729.

Context	Feature Type	Fabric	L	W	T	Date
708	wall	wfs		64	35	17th-18th c.
		wfs	145	60	33	17th-18th c.
		wfs	150	67	32	17th-18th c.

Context	Feature Type	Fabric	L	W	T	Date
		wfs	160	60	37	17th-18th c.
		wfs	162	65	36	17th-18th c.
		msgm	241	118	55	18th c.?
		msgm	246	120	56	18th c.?
717	floor	msgfe	226	108	43	16th-18th c.?
		msgm	228	112	55	18th c.?
		msgm	230	113	52	18th c.?
		msgm	235	110	49	18th c.?

Table 60: CBM from structural features in Trench 7 Period 4.2

Period 4.2 – early 20th century furniture factory

B.9.34 Again, the majority of CBM from this phase comprised samples of bricks.

B.9.35 Brick samples were collected from this building in Areas 10 and 11, as shown in Table 61. The surface 1265 included a floor brick and a floor tile, a floor brick was collected from structural full 1422, and another floor brick was recovered from wall **1377**, all in white fabrics. The remainder of this group comprised a range of bricks of different sizes, some of which may have been re-used from the earlier maltings complex. In addition, there were a few fragments of pantile and plain tile from layer 1448 and some malting tile fragments from backfill 1451.

Context	Feature Type	Sample	Fabric	L	W	T	Date
1245	wall	29	fsg	241	108	56	18th-19th c.
		29	fsg		113	56	18th-19th c.
1265	surface	49	wfs	242	120	35+	18th-19th c.
		49	wfg		>112	40	18th-19th c.
1268	wall	36	fsgfe	250	117	60	19th c.
		36	fsgfe		122	59	19th c.
		43	fsgfe	245	122	59	19th c.
		43	fsg		120	55	18th-19th c.?
1300	wall	37	fsgfe		118	59	19th c.
1269	wall	38	fsgfe	247	121	55	18th-19th c.
		38	fsgfe		108	57	18th-19th c.
1272	wall	41	fsgfe	227	112	57	19th c.?
		41	fsgfe		121	57	19th c.?
1287	wall	47	fsg	227	110	54	17th-18th c.
		47	fsg		117	56	17th-18th c.
1339	foundation trench	13	fsgfe	235	115	65	19th c.
		13	fsgfe		114	57	18th-19th c.
1347	structure	39	fsgfe	227	110	63	19th c.
		39	fsgfe		106	65	19th c.
1352	structure	12	fsgfe		109	63	19th c.
1375	wall	26	fsgfe	218	103	50	17th-19th c.?
1377	wall	22	wfg	242	112	40	18th-19th c.
		22	fsgfe		109	55	18th-19th c.
1391	wall	25	fsgfe	>195	104	72	19th c.
		28	fsgfe			65	19th c.
1400	wall	20	fsgfe	235	112	53	17th-19th c.

Context	Feature Type	Sample	Fabric	L	W	T	Date
		20	fsgfe		115	60	19th c.
1421	wall	23	?	231	114	60	19th c.
		23	?		122	61	19th c.
1422	structural	18	fsgfe	245	117	55+	18th-19th c.
1443	wall	17	fsg	242	115	60	19th c.
1459	?	21	fsgfe		115	65	19th c.
		21	fsgfe		103	55	17th-19th c.

Table 61: CBM from structural features in Areas 10 and 11

B.9.36 Within the southern building footprint, buried soil 205 and 206 in Trench 2 contained small quantities of plain roof tile, and there was a fragment of brick from wall 203 (fsgfe, 104 x 64mm) of 19th-century date.

Period 4.3 – late 20th century printworks

B.9.37 Four complete bricks were recovered from this phase, as shown in Table 62. The only contemporary brick was a compressed shale 'Phorpres' type from rubble layer 107 in Trench 1.

Context	Feature Type	Fabric	L	W	T	Date
105	rubble fill	wfs	232	112	65	19th c.
107	rubble layer	comp	219	104	64	20th c.
		fsgfe	227	101	68	19th c.
202	hardcore	fs	220	106	66	19th c.

Table 62: CBM from Period 4.3

Discussion

B.9.38 The earliest find was a fragment of possible Roman *imbrex*, which came from Anglo-Saxon levels, and one other fragment identified as a possible pantile from the same layer could also be a fragment of *imbrex*. It was not uncommon for re-use of Roman material in this period.

B.9.39 The medieval assemblage comprised mainly roof tile, although two ?decorated floor tiles were also present. Most of this material was either from contemporary Period 2 contexts, or was redeposited in Period 3. Ceramic roof tiles were relatively expensive at this period, so their presence on the site suggests a high-status structure in the vicinity. Most are likely to pre-date the construction of the Cardinal's College and perhaps relate to the medieval priory. The wide range of fabrics identified in the roof tile group may indicate that they represent the demolished remains of several structures or several phases of construction.

B.9.40 The majority of CBM from the site was broadly post-medieval. CBM is not generally very closely datable and some sizes and types are likely to span more than one century. Nevertheless, there are some walls which can be dated to the 17th–18th/19th and 19th centuries, and two modern bricks of compressed shale type were also sampled. The range of CBM types from the site is similar to those found at other contemporary sites across the town and wider region. Fabrics were mainly geologically local types and most of the bricks would have been made in the many brickworks located in rural

areas in the county. The most common fabrics occur in several brick sizes, reflecting this use of local clays.

- B.9.41 Based on fragment count, post-medieval roof tiles were the most frequent find, but brick was significantly more common on the site – walls were simply sampled to determine the types of bricks in use in each of the main structures. Most of the late and post-medieval roof tile was redeposited in buried soils and other layers, but some of it had clearly been re-used prior to its final deposition, with several fragments having mortar deposits which covered broken edges. Like the medieval plain tile, the range of fabrics suggests that the tiles derived from more than one structure. Pantiles were relatively rare, as is typical of the town.
- B.9.42 The small quantity of malting tile from the site is perhaps surprising, given the use of the site as a maltings, but the group included several different sizes and types of tiles which may reflect replacement of the malting tile floor, or addition of extra kilns, over several decades. Malting tiles were made by several local brickworks, with the most well-known being Fison's of Stowmarket, although smaller works were making kiln tiles from the third quarter of the 18th century at least (Crew 2004, 7, 10).
- B.9.43 Brick and tile samples from structural features have been described above, but the range of bricks in Periods 4.1–4.2 is similar, with a few more 19th-century types in the later phase. Dutch-type bricks and some floor bricks appear to have been re-used in walls, alongside the more typical red bricks. With the amount of brick which must originally have been used within the site boundaries, it is unsurprising to find that many walls contained more than one type, and the presence of layers of different mortars on some bricks and tiles is further evidence for continued re-use and recycling of building products, particularly in the foundations of later walls. However, dating of some of the bricks in Period 4.2 may indicate that some of the maltings complex buildings continued in use within the furniture factory.

B.10 Fired clay

By Sue Anderson

The assemblage

- B.10.1 There were 37 fragments (928g) of fired clay, most of which were recovered from the excavation areas and particularly fill 1148 of Period 1 pit **1147** and fill 1210 of Period 1 ditch **1208** in Area 9. A full catalogue is included in Table 63. The fragments were generally small and abraded, and few could be identified in terms of function. The majority were in fine sandy fabrics, some with flint, chalk or voids. Some pieces had flat surfaces. A few with possible withy impressions may be pieces of daub, although structures such as oven domes were also constructed using a basket-weave technique, so the fragments need not relate to buildings.
- B.10.2 A small fragment (3g) of vitrified hearth lining was recovered from the fill (605) of Period 1 pit **606** in Trench 6. It had coarse sand tempering and a rough, and a vitrified purple surface with reddish underside.

Period	Context	Cut	TP/Trench/Area	Fabric	Type	No	Wt/g	Colour	Surface	Impressions	Abr	Notes
1	605	606	Trench 6	cs	VHL	1	3	purple-red	rough, vit			605C
1	1087	1084	9	ms		1	60	grey	flattish on both sides	grass on surface		18mm thick
1	1089	1088	9	fsc		1	67	buff-orange	convex		++	
1	1096	1095	9	sc		14	293	orange-grey	3 flattish (1 smoothed fingermarks and coarse plaster?)		+	up to 30mm thick
1	1102	1101	9	fsf		1	32	grey-buff	flat		+	
1	1145	1144	9	fsc		3	7	orange			+	
1	1145	1144	9	s		1	8	brown			+	poss natural
1	1146	-	9	fs	D	1	168	buff	rough, undulating	parallel spaced wattles 16mm ø		
1	1148	1147	9	fs		1	46	grey-red	flat, right-angled, convex side	grass/straw		
1	1148	1147	9	fs		1	43	grey-red	flat			
1	1195	1194	9	fsf		1	8	red				
1	1209	1208	9	fsf		1	4	white	flat	striations		
1	1209	1208	9	fsf		1	15	white		wattle?		dense, irreg
1	1210	1208	9	fsv		1	3	black-grey	slightly convex, sooted	wattle?	+	11mm thick
1	1210	1208	9	fsf	D?	1	22	dk grey		2 parallel wattles & 1 at right-angles		
1	1210	1208	9	fsc		1	20	cream	flat	wattles?	+	
1	1210	1208	9	fsfc		1	18	white				irreg
1	1211	1208	9	fsf		1	95	grey	right-angles, flat	2 large wattle impressions		
2	210	-	Test Pit 2	fs		1	2	grey			++	with pottery from <3>
3	208	-	Test Pit 2	fsv		1	1	buff/grey			++	
4.1	1260	-	10	fsc		1	10	orange/grey			++	irreg
4.1	1260	-	20	fs		1	3	orange			+	dense, poss CBM

Table 63: Fired clay

B.11 Clay tobacco pipe

By Rebecca Sillwood

Introduction

- B.11.1 Archaeological works on Lower Brook Street, Ipswich, produced an assemblage of 121 pieces of clay tobacco pipe, weighing 0.711kg in total.
- B.11.2 The clay pipe came from a variety of features, including layers, foundation trenches, and drains.
- B.11.3 The clay pipe was only recovered from Period 4.1 and 4.2 deposits, relating to activity dating to between the 18th–20th century. Period 4.1 (18th–19th century) produced 65% of the assemblage by count and weight and Period 4.2 (early 20th century) the remainder.
- B.11.4 The assemblage is made up of 74% undiagnostic stem fragments (90 fragments), 17% bowls or bowl fragments (20 pieces), and the remainder were mouthpieces (7 pieces).
- B.11.5 Three notable marked 18th-century Dutch pipe bowls were recovered from a single context, along with two decorative pipe stems which may be associated and are also of Dutch origin. Another decorative pipe stem is also Dutch, showing further evidence for trade with the Netherlands. Only one other pipe bowl was marked with a maker, and this was a local example. The remaining pieces were plain and unmarked and dated mainly to the early to mid-17th century, with some outliers. The earliest pipe recorded from this site was from 1640–1660 and the latest was mid-19th century.

Methodology

- B.11.6 The clay tobacco pipe was recorded using a modified version of the Excel spreadsheet produced by the National Pipe Archive and the guidance produced by Higgins & Davey 2004.
- B.11.7 The clay pipes were identified by type (bowl, stem, mouthpiece) and a description produced of the features of each piece where necessary. Stem bore analysis has not been attempted and is unlikely to yield any more refined dating than has already been achieved.
- B.11.8 The type series used for this assessment was Oswald's 'Simplified General Typology' (1975).
- B.11.9 Recommendations for dispersal will be based on the guidelines produced by Historic England (Higgins 2017).
- B.11.10 The clay pipe is discussed below by phase.

Period 4.1 (c. 18th–19th century malthouses)

- B.11.11 This phase of activity on the site produced the largest proportion of clay tobacco pipe, with 63 stem fragments, 11 bowls, and five mouthpieces.

- B.11.12 The most important part of this assemblage are the three imported Dutch pipe bowls identified from a single context (backfill layer 1288), two were complete and one was incomplete. One Dutch pipe within an assemblage is unusual, three is extremely rare and important, as Bert van der Lingen writes 'Although Dutch pipe makers had little or no export to England [due to import restrictions] it is not unlikely there was some sort of (small) private trade between Dutch and English port cities' (pers. comm. 31/05/22). The pipes found here were exceptionally well-made with forward leaning flared profiles, thin walls, and with glossy burnishing in evidence on all pieces. A neat row of milling very close to the rims of all was also recorded. All of these pipes are marked in relief on the heel in two cases, and on the rear of the bowl in one. The form of these pipes was similar over the three and is comparable to an example from Colchester illustrated by Hind & Crummy (1988, 55, fig. 59, no. 2908) dating to between *c.* 1730–1750. This example was also marked on the heel, though with a different mark to the Ipswich examples.
- B.11.13 One of the complete Dutch bowls was marked on the heel with a standing figure, which corresponds to that of the 'trumpeter', a mark identified with multiple different Gouda makers (van der Meulen, 2003, 37) dating from 1674 through until 1919 (Fig. B.11.1, no. 2). The earliest possible pipemaker for this pipe is Hermanus Licht who owned the mark in 1691–1711 and the second (more likely) option is Jan Leendersz Marenhoef who owned the trumpeter mark in the period 1711–1756. Both of these are pipemakers from Gouda.
- B.11.14 The second complete Dutch pipe was marked in relief on the heel with the crowed initials IS (Fig. B.11.1, no. 1). This mark was registered in 1675–1688, though this date is too early for the Ipswich examples. After 1688 the mark went out of use until in 1710 the Gouda pipemaker, Jan Tobiasz Sonneveld (1724–1759) began work (van der Meulen 2003, 74). This pipe, therefore, dates to between 1710–1740.
- B.11.15 Finally, the incomplete Dutch pipe was marked in relief to the rear of the bowl with a Cardinal's hat (kardinaalsmuts) with a Christian cross within the body of the hat (Fig. B.11.1, no. 3). This mark was first registered with the Gouda Pipe Makers Guild in 1716 and was in use until 1768. The first pipe maker who owned and used this mark was Pieter Olijkan from Gouda between 1716–1745 and the pipe will have been made between 1716–*c.* 1740. Dutch pipes with a mark in this position (on the bowl facing the smoker) were usually made for export and are usually found in Northern Germany and Scandinavian countries (Bert van der Lingen, pers. comm. 31/05/22).
- B.11.16 In addition to the pipe bowls mentioned above, it is possible to attribute three fragments of decorated pipe stem to the Netherlands. Two pieces were recovered from the same context as the bowls (1288) and were decorated with zig zags and pellets, similar to examples illustrated by van der Meulen (2003, 15, nos 13 & 17) (Fig. B.11.1, nos 4 and 5). These pieces did not join, though other stem fragments from the same context (undecorated) had similar patina to the pipe bowls and decorated examples and may form a substantial percentage of whole pipe stems. Dutch pipes of this quality usually measured *c.* 0.55m in length. A third decorated stem fragment came from demolition layer (1389). This piece had a repeating relief pattern of fleur de lis within lozenges, similar to the stem of an example illustrated by van der Meulen (2003, 13, no. 10) (Fig. B.11.1, no. 6).

- B.11.17 The remainder of the assemblage recovered from this phase of activity on the site includes pipe bowls, none of which date to before 1700. Without exception all of the identified bowls were of 18th century date, with examples of Oswald's (1975) Type 10 and 21 being the most frequent, with instances of Types 11 and 12. The date range for this assemblage is therefore between 1700–1780, though with most pieces between 1700–1750, which also corresponds with the presence of the Dutch clay pipes. No makers' marks or decoration was found on any of the pipe bowls.
- B.11.18 Five mouthpieces were found in this phase of activity, four from the same context as the Dutch pipes (1288) and one from rubble layer 1307. Two showed cut ends and the remainder were rounded. The remaining pieces from this phase were all undiagnostic stem fragments.

Period 4.2 (early 20th century furniture factory)

- B.11.19 This phase of the site is the most mixed and contains the earliest and the latest clay pipes from the whole assemblage. There are also less in quantity from this phase with only 27 stem fragments, nine bowls, and two mouthpieces.
- B.11.20 The earliest bowls from this phase date to the 17th century, with a complete example from demolition layer 1401 of Oswald Type 5 (1640–1660) and an incomplete one from backfill layer 1451 of Oswald Type 6 (1660–1680). Both of these have bulbous bowls, though are larger than the very early examples. No decoration or makers' marks are visible on these two bowls.
- B.11.21 In addition to the above, there were also four bowls which are similar to the main body of the assemblage in Period 4.1, that is, dating to the 18th century. Two Oswald Type 10, and one each of Oswald's Type 11 and 12 were recovered. These pipes date to between 1700–1780. None are decorated or marked.
- B.11.22 Finally, a fragment of bowl which was stamped (incuse) with a mark which would have faced the smoker of: 'GOODWIN & SON IPSWICH' within a shield shaped border, was recovered from a levelling layer (1259). This maker is clearly a local one and is listed by Oak-Rhind (1976, 204) as working in Ipswich between the 1860s–1880s.
- B.11.23 The remainder of the assemblage consisted of undiagnostic stems or fragmentary bowls, though two mouthpieces were also recorded, one of flattened oval form and one rounded. Higgins (2017, Section 6.5) records both of these mouthpiece forms as being of mid-19th century date.

Conclusions

- B.11.24 This assemblage of clay tobacco pipe from Ipswich is fairly small, but is of great interest, both locally and nationally. The presence of three marked Dutch pipe bowls and at least three Dutch decorated stem fragments is significant. There is little published in the way of medium to large clay pipe assemblages from Ipswich, but notwithstanding this unknown element, the Lower Brook Street assemblage is still of some consequence. The numbers of Dutch pipes found in Ipswich is not known to the author but given that the town was an affluent port town throughout the period in which clay pipes were circulated, it must be assumed that there are others, however

small in number. Being able to attribute all of the Dutch pipes to makers in Gouda is excellent evidence for the trade in the good quality pipes produced there.

- B.11.25 Archaeological finds of Dutch pipes in England are scarce and this is due to import restrictions. Although Dutch pipe makers had little or no export to England it is not unlikely there was some sort of (small) private trade between Dutch and English port cities. However, usually when someone bought clay pipes for their own use, they would buy a few or a handful at the same time. Therefore, it is interesting to see that all three pipes from Lower Brook Street have different marks. Normally it would be expected that if pipes were purchased from a shop, importer or trader, these pipes would have the same brand. This may imply that the shop/trader had a substantial supply of these pipes, and so was perhaps a large-scale trader, rather than a small individually owned business.
- B.11.26 This clay pipe assemblage points to a presence on this site from the 17th century onwards, although the 17th-century pipe bowls are vastly outnumbered by those from the first half of the 18th century. Apart from the Dutch pipes, no other pipes are marked or decorated until the 19th century, where an example of a local maker was recorded on an incomplete bowl (Goodwin).
- B.11.27 Overall, this clay pipe assemblage is an important advancement both locally and nationally, as it provides evidence for trade and consumerism in 18th century Ipswich. It says something about the town that Dutch pipes were imported and used here; the acknowledgement that Dutch pipes were of greater quality and could have been used by the more affluent in society, and the other pipes from the site representing the more mundane and common locally-made pipes, is a distinct possibility.

Illustration catalogue (Fig. B.11.1)

1. Bowl. IS crowned. Dutch pipe; beautifully formed, forward leaning flared bowl with neat milling to rim; small circular heel with crowned IS in relief on base; highly glossy (burnished), with mottle beige and white patina. 1710-1740. Layer 1288. Period 4.1
2. Bowl. Trumpeter. Dutch pipe; beautifully formed, forward leaning flared bowl with neat milling to rim; small circular heel with trumpeter in relief on base; good burnishing. 1710-1740. Layer 1288. Period 4.1
3. Bowl. ?Tudor rose/rosette. Dutch pipe; incomplete bowl; beautifully formed, forward leaning flared bowl with neat milling to rim; small circular heel; good burnishing; possible rose with a pellet above within circular border to rear of bowl (facing smoker). 1710-1740. Layer 1288. Period 4.1
4. Stem. Rows of pellets and zig-zags around circumference. Dutch; not joining, but similar decoration; one stem fragment has only an incomplete row of pellets around diameter at broken end; other piece is slightly curving and has pellets with zig zags between. Layer 1288. Period 4.1
5. As above
6. Stem. Repeated fleur-de-lis in lozenges around part of stem; in relief. Dutch; stamped in relief pattern of fleur-de-lis in lozenges. Layer 1389. Period 4.1

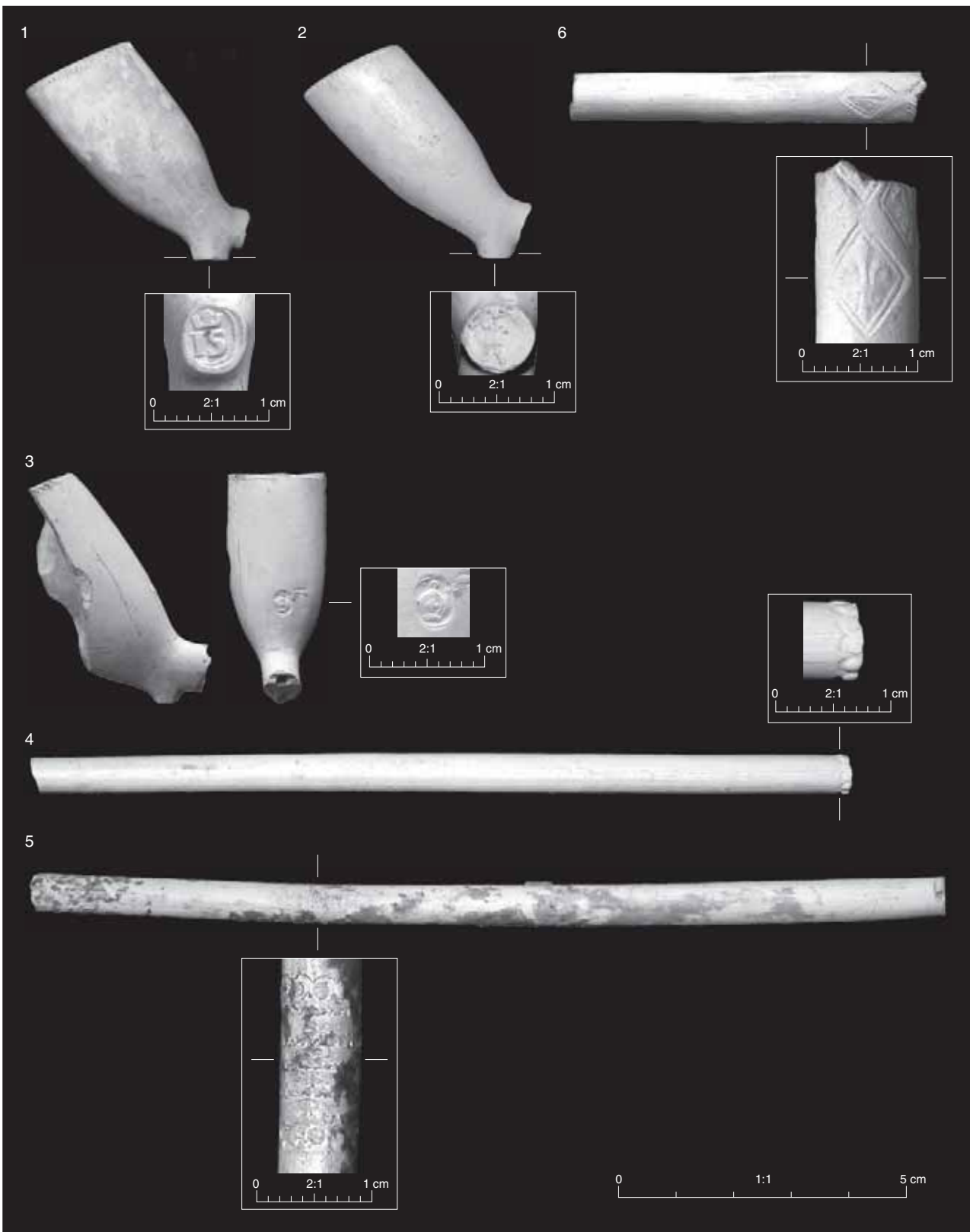


Figure B.11.1: Clay tobacco pipe

B.12 Worked bone

By Ian Riddler

Combs

- B.12.1 Two combs of different forms came from Period 1 contexts in Area 9. A fragmentary bone connecting plate from a horn composite comb (SF 108 ; Fig. B.12.1) has fractured across rivet holes at either end and would originally have been equipped with two iron rivets, set through a single sheet of horn. It survives to a length of 84mm and would have been a little longer originally. Horn composite comb connecting plates with two rivets vary in length from 60mm to 110mm (Riddler *et al.* 2012, 401). The connecting plate is rectangular in shape, the dominant form with this comb type. Almost 100 connecting plates from horn composite combs are known from Ipswich, one of the largest collections in Europe. The earliest examples can be seen within the emporia in contexts of early ninth-century date and they continued in use until the twelfth- to thirteenth century (*ibid.*, 406-7). Those equipped with two rivets occur across the entire period that this comb type was in use. The main difference over time at Ipswich is that the comb teeth became coarser in value. Saw marks indicate that there were three teeth per centimetre on one side of this comb and eight per centimetre on the other side. At Ipswich, horn composite combs with eight teeth per centimetre on one side are common in ELS and MLS contexts, but rare after that date (*ibid.*, 409).
- B.12.2 The second comb (SF 160; Fig. B.12.1) can be identified as a single-sided composite made of antler and secured with iron rivets. It includes the same decoration on both sides, which does not extend across the entire connecting plate. It was originally a large comb, at least 200mm in length, with tooth segments secured on both edges. Within Ipswich this comb type can be seen in MLS contexts and it may have been current from *c.* 950–1025; combs of 200mm or more in length do not occur before *c.* 950 (Riddler *et al.* forthcoming). The Ipswich combs of this type tend to have quadruple diagonal crossing lines, a characteristic feature indicating an Ipswich origin. There are triple crossing lines here, which is rare both at Ipswich and elsewhere. At Hedeby, for example, contemporary combs utilise double crossing diagonal lines (Tempel 1969, taf 23). There is one other feature that is a little unusual. The surviving tooth segments taper from the teeth to the comb back and this is essentially a Scandinavian way of manufacturing tooth segments that does not occur on Middle Saxon or later combs known to be of Anglo-Saxon origin. It can be seen on two comb fragments from Foundation Street and two tooth segments from the Buttermarket, all contemporary with this comb. It is possible therefore that this comb was made by a Scandinavian comb maker who was active in Ipswich at this time, or by an Ipswich comb maker well aware of how Scandinavians made their combs. One other technical point of interest is the presence of a failed rivet hole near the centre of the comb that has been made with a metal implement with a point of conical section, and not with a drill.

SF 108 (Fig. B.12.1)

Fragmentary bone connecting plate from a horn composite comb, fractured across rivet holes at either end. Cut from cattle-sized rib bone, slightly curved in section and highly polished on the outer surface. Saw marks indicate three teeth per centimetre on one side and eight per centimetre on the other side.

Context 1102, fill of gully 1101, Period 1

SF 160 (Fig. B.12.1)

Fragment of an antler single-sided composite comb, consisting of four tooth segments fastened to parts of two connecting plates by six iron rivets. Baseline is slightly sinuous and comb back is lightly curved. Connecting plates decorated by a continuous band of well-spaced saltires formed from triple crossing diagonal lines, bounded by vertical bands. Unused attempt at a rivet hole lies towards centre of the comb. Three tooth segments fastened on both edges, one on a single edge. No teeth survive, saw marks indicate 4.5 to 5 teeth per centimetre.

Context 1146, occupation Layer, Period 1

Skates

- B.12.3 Two bone skates were recovered from the same area and group of features on the site. They differ in their raw materials and belong to different groups within the Ipswich corpus, although they are likely to be contemporary.
- B.12.4 A complete bone skate (SF 107; Fig. B.12.2) has been trimmed from a cattle metacarpus. The posterior face has been smoothed and both ends have been tapered to blunt points. The distal end probably formed the front of the skate and it has been angled upwards rather more than the proximal end, which is lightly upswept. At both ends the inner tissue of the bone has been exposed. The upper surface of the bone is polished but it has not been modified at all.
- B.12.5 Over 30 skates are known from Ipswich and there are further, unpublished examples in museum collections. The assemblage consists of roughly even numbers of cattle and horse bones. Within the former species there are five cut from metacarpals (including this example), six cut from metatarsals and two from radii. Metapodia also dominate the assemblage of skates fashioned from horse bones, as noted below.
- B.12.6 The cattle metapodial skates can be separated into two groups, when their various attributes are examined. The first group consists of five skates, mostly metacarpals and all unfused, for which there is virtually no modification of the bone at all. The anterior face was set on to the ice and light trimming of each end has occurred with some examples but, with just one exception, the ends are neither narrowed nor upswept. They are formed from unfused bones and as a result they are the shortest skates of the Ipswich and the East Anglian assemblages. It seems likely that they represent skates intended for use by children. That may explain why they have not been narrowed at all and they are not upswept: in relative terms they provide the largest surface area for the skate on the ice. They have only been found at the Buttermarket within Ipswich (where they may have been made) but there is also one example from Mill Lane at Thetford (Riddler 2004, 61).
- B.12.7 The skate from Lower Brook Street belongs with a second cattle metapodial group, distinguished by the tapering of the front of the skate, which is usually formed from the distal part of the bone. The back of the skate has also been tapered with this example but that is not a common practice amidst cattle metapodial skates from East Anglia. The front is usually upswept as well and sometimes the back is treated in the same way. Of the eight examples from Ipswich, Norwich and Thetford, three are metacarpals and five are metatarsals. All but one of them include fused distal

articulations and, as a result, they tend to be longer than the first group; and they are generally narrower as well. They could be regarded as skates that require a little more skill to use and were therefore probably not intended for beginners. Both groups of skates occur in Middle to Late Saxon contexts, as well as those of early medieval date.

B.12.8 The second skate from Lower Brook Street (context 1128; Fig. B.12.2) has been fashioned from a horse metatarsus, with the anterior face of the bone smoothed and the distal end lightly upswept, removing part of the condyles. It has not been perforated, which confirms its late Saxon date: bone skates with perforations are not seen in East Anglia before the middle of the 12th century. Within the Ipswich corpus of horse bone skates, those made from the metacarpus outnumber metatarsal skates in a ratio of 2:1. There are just two further examples of this bone type, one from the Buttermarket and the other from Foundation Street, and all three come from Late Saxon contexts. In contrast, there are no less than eight skates made from horse metacarpals. Horse metatarsal skates are more common elsewhere in East Anglia, with one from Norwich, two from West Fen Road at Ely and seven from Thetford, and the ratio for the region as a whole is 1:1 (Riddler *et al.* forthcoming). This skate extends to over 250mm in length, making it the longest example of this specific bone type from East Anglia, and one of the longest of all, although there are three bone skates over 300mm in length, all of them cut from horse radii.

SF 107 (Fig. B.12.2)

Complete bone skate, made from a fused cattle metacarpus with the proximal and distal articulations both roughly trimmed by knife to pointed ends. Posterior face is smoothed throughout with traces of longitudinal and diagonal wear. Upper surface is lightly polished, particularly at the distal end.

Context 1098, fill of pit **1097**, Period 1

Context 1128 (Fig. B.12.2)

Complete bone skate, cut from a fused horse metatarsus with the anterior face smoothed and the distal end of the bone upswept.

Context 1128, fill of posthole **1127**, Period 1

Needle

B.12.9 A bone needle (SF 121; Fig. B.12.1) has been cut from a pig fibula and includes a prominent, knife-cut oval perforation that shows slight traces of wear. The sides of the head have been narrowed and the apex is formed from the natural unfused articular surface of the bone. The needle belongs to group 1 from Ipswich, for which the apex is either entirely flat or largely unmodified, as here (Riddler *et al.* forthcoming). This is one of the most common forms of needle to be found in Ipswich, recovered from Late Saxon and medieval contexts but not, as yet, from contexts of Middle Saxon date. It is a typical member of this group. The head is 9.5mm in width, which places it within the broad category for the group, with head widths of 8mm to 13mm (Fig. B.12.3). Its length of 106mm also lies within the range of 75mm to 135mm for the group as a whole, with the longer bone needles mainly coming from medieval contexts. In effect, therefore, it is a typical bone needle of Late Saxon form.

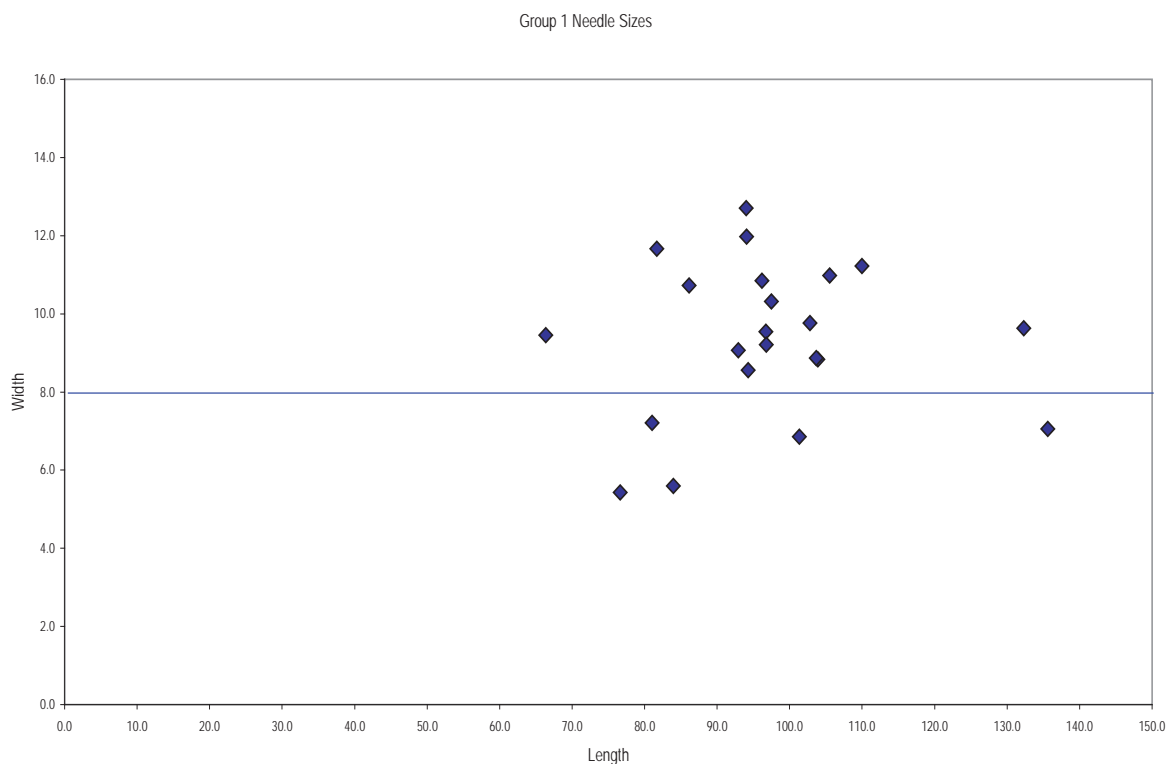


Fig. B.12.3: The widths of the heads of bone needles of type 1 from Ipswich

B.12.10 Bone needles almost certainly formed a part of the weaving equipment used with a loom, where they would have fulfilled a variety of functions and were not used merely as sewing implements – they are better described as weaving implements (Walton Rogers 1997, 1757 and 1779; Riddler *et al.* forthcoming). Eva Andersson noted from experimental work that needles with flat heads were preferred for sewing thick, coarse fabrics because it was easier to pass the needle through with the hand. Heads wider than 10mm (or 8mm from the Ipswich sample) could only be used for fabrics with a low thread count, which would largely be woollen (Andersson 2003, 85).

SF 121 (Fig. B.12.1)

Complete bone needle, cut from a pig fibula with the head shaped from the distal end of the bone. Head is trimmed on both sides and includes a prominent oval knife-cut perforation. Apex formed from natural articular surface. Lightly curved shaft tapering to a sharp point.

Context 1211, fill of pit or ditch terminus 1208, Period 1

Gaming piece?

B.12.11 A red deer antler tine end (SF 157; Fig. B.12.1) has been lightly smoothed and trimmed on the outer surface and perforated axially to a depth of 20mm, over half of its length. It is polished throughout. Perforated antler tines commonly occur in waste assemblages, including those from Ipswich, and it has been suggested that the perforations reflect the use of an iron spike, placed into the cortile tissue at the centre of the antler to make the tine easier to saw (Keily 2012, 165). In this case, however, the perforation is oval in shape, reflecting the section of the tine, and it is splayed and

appears to have been knife-cut. This is a more assiduous and deliberate act, suggesting that the tine end was regarded as an object and not as waste material.

- B.12.12 If viewed as an object, the tine end is immediately redolent of a gaming piece. It comes from a Period 2 medieval context, and it could either have functioned as a pawn in the game of chess, or as a king piece in the game of *taefl*. Simple pawns cut from tine ends occur in a number of chess assemblages, including Gammertingen (Kluge-Pinsker 1991, 118-9), although they are often faceted in section and their apices are rounded, rather than pointed. They are not usually perforated. This is more of a characteristic of *taefl* pieces, particularly those of Insular origin, where the perforation accommodated a peg, allowing the piece to be used on a board equipped with a series of holes. A fragment of a gaming board of this type came from Foundation Street at Ipswich (Riddler *et al.* forthcoming). The height of this tine end suggests that it would have been a king piece, rather than a gaming piece, the latter tending to be rounded in form, with later examples following a restricted number of taller shapes, as seen in Ireland, for example (Breen 2003, 45). Few king pieces are known and we know little about how they differed from ordinary gaming pieces, making this a tentative identification at best.

SF 157 (Fig. B.12.1)

Complete antler object, possibly a gaming piece, sawn laterally from the end of a tine and lightly trimmed and smoothed on the outer surface. Perforated axially to a depth of 20mm. Polished throughout.

Context 1453, buried soil layer, Period 2

Casket mount

- B.12.13 A small fragment of a casket mount, cut from rib bone, is decorated with bands of diagonal saw-incised lines (SF 167; Fig. B.12.1). The mount is rectangular and 11mm in width, making it one of the narrowest casket mounts to be found in Ipswich. At one end it is stepped up to 13mm and has fractured a little further along. Iron staining is present at both ends and it may have broken close to rivet holes. The pattern of bands of diagonal lines does not occur on the 20 other fragments of casket mounts recovered from Ipswich and is a comparatively rare decorative design for the period that does occur, however, on an antler mount from York (MacGregor, Mainman and Rogers 1999, fig 915.7714).

SF 167 (Fig. B.12.1)

Small fragment of a bone mount from a casket, cut from cattle-sized rib bone and decorated with bands of diagonal saw-incised lines. Fractured at both ends, one side lightly indented over most of its length.

Context 1159, fill of ditch 1158, Period 1

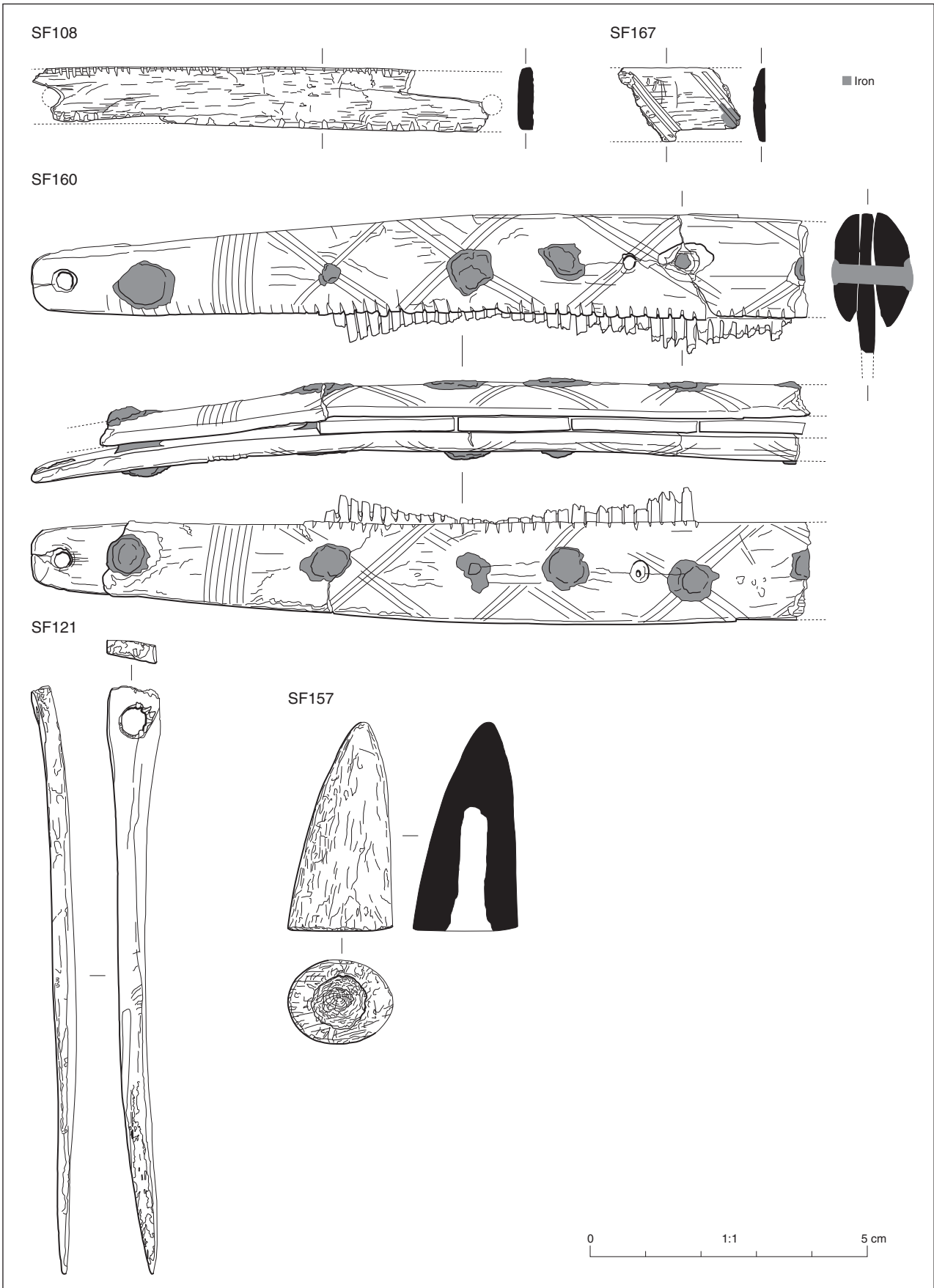


Figure B.12.1: Worked bone



Figure B.12.2: Worked bone

B.13 Worked wood

By Hannah Pighills

Introduction

- B.13.1 A total of 82 items from the 2016 evaluation were considered in this report. Most of the deposits these items were recovered from were waterlogged, which created the anaerobic conditions necessary for organic preservation. Some items were recovered from non-waterlogged environments. These items were not as well preserved as those from within waterlogged deposits.
- B.13.2 Eighty of the items were recovered from Late Anglo-Saxon features, with one being recovered from a medieval feature, and one from a feature associated with the c.18th–19th century malthouses.
- B.13.3 There was limited on-site recording, meaning exact locations were not known at the time of writing this report. In addition, the wood was kept in poor conditions post-excavation, which severely sped up the decomposition process for a lot of the assemblage.
- B.13.4 The aim of this report was to analyse the assemblage in terms of woodworking technology, woodland reconstruction, decay analysis, species identification, dendrochronology, and conservation and retention.

Methodology

- B.13.5 This report was produced in accordance with Historic England guidelines for the treatment of waterlogged wood (Bunning and Watson 2010) and recommendations made by the Society of Museum Archaeologists (1993) for the retention of waterlogged wood.
- B.13.6 Each item was recorded off site using a pro forma 'wood recording sheet', based on the sheet developed by Oxford Archaeology for the post-excavation recording of waterlogged wood. The metric data were measured with hand tools including hand tapes and rulers. The tool marks were recorded using a digital calliper.
- B.13.7 Where possible, species identification using morphological traits visible with a hand lens - oak (*Quercus* sp.) and ash (*Fraxinus excelsior*) - were noted. For other species, microscopic identification was used.
- B.13.8 Every effort was made to refit broken or fragmented items.
- B.13.9 The system of categorisation and interrogation developed by Taylor (2001) and the condition scale developed by the Humber Wetlands project (Van de Noort *et al.* 1995) have been adopted within this report. Joints and fixings have been recorded in accordance with the Museum of London Archaeological Site Manual (Spence 1994).

Condition of the material

- B.13.10 The condition scale developed by the Humber Wetlands Project (Van de Noort *et al.* 1995: table 15.1) was used throughout this report (Table 64). The condition scale is based primarily on the clarity of surface data. The item is given a score which is

dependent on the types of analyses which can be carried out, given the preservation state. The condition score reflects the possibility of a given type of analysis but does not consider if the item is suitable for the given process.

Condition Score	Museum Conservation	Technology Analysis	Woodland Management	Dendrochronology	Species Identification
5 Excellent	+	+	+	+	+
4 Good	-	+	+	+	+
3 Moderate	-	+ / -	+	+	+
2 Poor	-	+ / -	+ / -	+ / -	+
1 Very Poor	-	-	-	-	+ / -
0 Non-Viable	-	-	-	-	-

Table 64: Condition Scale for preserved wood (+/- indicates the factors in the title row may or may not be present)

- B.13.11 If the preservation varies within the item, the section with the highest level of preservation is considered with the item is given a condition score. Items that were set vertically in the ground often display relatively better preservation lower down and relatively poorer preservation higher up.
- B.13.12 Using the above condition scale (Table 64) the recovered material all scores a 1, 2, 3 and a 4 (Table 65).

Assemblage

- B.13.13 See Table 65 for assemblage descriptions.

Woodworking debris

- B.13.14 The presence of woodworking debris within an assemblage can bring insight into the methods of woodworking occurring on site, along with the planning/selection of the location of woodworking (Taylor 1998). However, having such disparity of woodworking debris across the site, there is limited evidence for this.

Unclassified debris

- B.13.15 The presence of unclassified debris can be used to suggest material being dumped into the features after their use either naturally eroded from larger pieces or naturally occurred within the deposits.

Bark debris

- B.13.16 Similar to unclassified debris, the presence of bark debris can be used to suggest material being dumped into features after their use either naturally eroded from larger pieces or naturally occurred within the deposits.

Unmodified roundwood

- B.13.17 Having items with similar dimensions and shape could indicate the prevalence of coppicing. The unmodified roundwood within the assemblage could also have potential to be segments of wattling. However, as there were no obvious items used as the hurdles nor the sails, it is likely that these items were dumped within the features.

Planked item

- B.13.18 Having only one planked item with heavy damage does not offer enough evidence to suggest its use. It had probably been dumped along with the rest of the material within the deposit. Whilst it is possible it is from a larger structure, there is not enough evidence for this.

Posts

- B.13.19 It is possible that both post items could be from larger structures. However, having only two items to consider, there is limited evidence for this.

Tool use

- B.13.20 All of the marks observed are indicative of metal tools, with the stop marks having been made by metal axes.

Woodland reconstruction

- B.13.21 The species identified within this assemblage were: oak (*Quercus* sp.), ash (*Fraxinus excelsior*), alder (*Alnus glutinosa*) and willow (*Salix* sp.). All of these species can survive in both wet and dry land and can provide insight into the contemporary environment.

Woodworm

- B.13.22 The presence of woodworm can be used to indicate exposure of dead wood over time (Jaques *et al.* 2002). If most of the assemblage shows evidence of an infestation it can suggest the items were broadly contemporary. However, if only a select few items show evidence, it can be indicative of those items being reused within the assemblage, their primary use being elsewhere. As woodworm was observed on only one item, no correlation between items can be suggested.

Period	Cut	Cxt.	Tr.	Wood no.	Species	Type	Condition (0-5)	Description	Working marks	Dimensions (mm)	Timber Conversion	B/ S/ H
1	606	603	6	N/A	Possible oak (Quercus sp.)	Bark debris	4	Unworked debris with taphonomic damage	N/O	44 x 26 x 8	N/A	B
1	606	605	6	N/A	Cannot be determined, condition too poor	Unclassified debris	1	Unworked debris with taphonomic damage	N/O	Condition too poor (not intact, could not be refit)	N/A	Condition too poor
1	606	605	6	N/A	Alder (Alnus glutinosa)	Unclassified debris	2	Unworked debris with taphonomic damage	N/O	64 x 23 x 6	N/A	S
1	606	605	6	A	Alder (Alnus glutinosa)	Woodworking debris	3	Possible offcut, with one chop mark, heavily damaged (taphonomic and excavation).	One chop mark where thinner branch was removed.	350 x 82 x 51	Quartered	S
1	606	605	6	B	Alder (Alnus glutinosa)	Woodworking debris.	3	Possible offcut, heavily damaged (excavation).	Two tool marks indicative of hewing, 23x21mm and 30x21mm	85 x 71 x 32	Tangentially split	B, S
1	606	606	6	N/A	Cannot be determined, condition too poor	Woodworking debris.	1	Woodchip, charred. Condition very poor.	Poor condition may mask any marks	31 x 22 x 4	Radially split	H
2		758	7	N/A	Oak (Quercus sp.)	Unclassified debris	2	Unworked debris with taphonomic damage	N/O	130 x 19 x 14	N/A	H
1	1040	1041	9	N/A	Oak (Quercus sp.)	Woodworking debris.	3	Possible offcut, heavy taphonomic and excavation damage on one end	3 tool marks indicative of chopping were observed on undamaged end, all 10x3mm	119 x 31 x 25	Radially split	S
1	1188	1189	9	A	Oak (Quercus sp.)	Woodworking debris.	2	Heavily decayed (taphonomic and excavation) worked item, possible offcut.	N/O	219 x 66 x 34	Tangentially split	S, H

Period	Cut	Cxt.	Tr.	Wood no.	Species	Type	Condition (0-5)	Description	Working marks	Dimensions (mm)	Timber Conversion	B/ S/ H
1	1188	1189	9	B	Oak (Quercus sp.)	Woodworking debris.	2	Heavily decayed (taphonomic and excavation) worked item, possible offcut.	5 tool marks in total observed, one indicative of hewing (35x24), and 4 axe stop marks	269 x 55 x 32	Tangentially split	S, H
1	1188	1189	9	N/A	Oak (Quercus sp.)	Post - post pipe	3	Heavy taphonomic damage. Primarily recorded as a post, heart wood and bark has rotten away.	N/O	344 x 188 x 64	N/A	S
		1211	9	125	Oak (Quercus sp.)	Planked item	3	Incomplete, planked item with one end shaped into half original width (one intentional cut, one accidental break), heavily damaged (taphonomic and excavation); and on the other end one bore hole midway (12x14mm). Item split unintentionally at this bore hole.	12 tool marks indicative of planing, on 3 faces (two wide, one narrow), ranging from 10x2 to 25x2 mm. 4 axe stop marks observed on one narrow face, all 25x8mm. 1 tool mark indicative of hewing (25x8mm). Damage may mask other tool marks	300 x 51 x 21	Radially split	S, H
1	1121	1211	9	A	Willow (Salix sp.)	Unmodified roundwood	4	Unworked, straight Unmodified roundwood.	N/O	39 x 11 x 8	N/A	S, H
1	1121	1211	9	B	Willow (Salix sp.)	Unmodified roundwood	4	Unworked, straight Unmodified roundwood.	N/O	39 x 9 x 3	N/A	S, H

Period	Cut	Cxt.	Tr.	Wood no.	Species	Type	Condition (0-5)	Description	Working marks	Dimensions (mm)	Timber Conversion	B/ S/ H
1	1121	1211	9	C	Willow (Salix sp.)	Unmodified roundwood	4	Unworked, straight Unmodified roundwood. Superficial charring	N/O	39 x 10 x 8	N/A	S, H
1	1121	1211	9	D	Willow (Salix sp.)	Unclassified debris	3	Unworked debris with taphonomic damage. Woodworm present on one face	N/O	36 x 12 x 8	N/A	S, H
1	1121	1211	9	E	Willow (Salix sp.)	Woodworking debris.	2	Possible damaged woodchip. Working observed on one face	One chopped face, natural damage may be masking tool marks	32 x 22 x 6	Tangentially split	H
1	1121	1211	9	F	Oak (Quercus sp.)	Woodworking debris.	2	Woodchip, with heavy taphonomic damage, with 4 facets observed on three faces	2 facets on one wide face (19x6mm, 19x36mm), 1 facet on other wide face (30x24mm), one facet on narrow face (10x36mm)	61 x 24 x 11	Tangentially split	H
1	1121	1211	9	G	Possible willow (Salix sp.)	Woodworking debris.	2	Woodchip, with heavy taphonomic damage, with 1 facets observed on one face	1 facet on one narrow face observed (12x6mm). natural damage may be masking others	34 x 31 x 6	Radially split	H
1	1208	1218	9	128a	Birch (Betula pendula)	Unmodified roundwood	4	Unworked, straight Unmodified roundwood, within woodmass 128	N/O	73 x 18 x 17	N/A	B, S, H
1	1208	1218	9	128b	Birch (Betula pendula)	Unmodified roundwood	4	Unworked, straight Unmodified roundwood, within woodmass 128	N/O	354 x 24 x 16	N/A	B, S, H

Period	Cut	Cxt.	Tr.	Wood no.	Species	Type	Condition (0-5)	Description	Working marks	Dimensions (mm)	Timber Conversion	B/ S/ H
1	1208	1218	9	128c	Birch (Betula pendula)	Unmodified roundwood	4	Unworked, straight Unmodified roundwood, within woodmass 128	N/O	88 x 20 x 16	N/A	B, S, H
1	1208	1218	9	128d	Birch (Betula pendula)	Unmodified roundwood	3	Unworked, straight Unmodified roundwood, within woodmass 128	N/O	250 x 22 x 16	N/A	B, S, H
1	1208	1218	9	128e	Alder (Alnus glutinosa)	Unmodified roundwood	3	Unworked, straight Unmodified roundwood, within woodmass 128	N/O	320 x 21 x 16		B, S, H
1	1208	1218	9	128f	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight Unmodified roundwood, within woodmass 128	N/O	305 x 19 x 17		B, S, H
1	1208	1218	9	128g	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight Unmodified roundwood, within woodmass 128	N/O	290 x 22 x 17		B, S, H
1	1208	1218	9	128h	Cannot be determined, condition too poor	Bark debris	1	Unworked bark debris, within woodmass 128	N/O	111 x 51 x 9	N/A	B
1	1208	1218	9	128i	Cannot be determined, condition too poor	Bark debris	1	Unworked bark debris, within woodmass 128	N/O	174 x 72 x 6	N/A	B
1	1208	1218	9	128j	Ash (Fraxinus excelsior)	Unclassified debris	3	Unworked, straight Unmodified roundwood. Full charring	N/O	78 x 38 x 21	N/A	S, H

Period	Cut	Cxt.	Tr.	Wood no.	Species	Type	Condition (0-5)	Description	Working marks	Dimensions (mm)	Timber Conversion	B/ S/ H
1	1208	1218	9	128k	Oak (Quercus sp.)	Woodworking debris.	2	Worked item with taphonomic damage, possible offcut.	1 chop mark at undamaged end (31x19mm) and 5 tool marks indicative of planing on one face (15x3-15x4mm)	111 x 26 x 8	Tangentially split	H
1	1208	1218	9	128l	Oak (Quercus sp.)	Woodworking debris.	3	Worked item, possible offcut	2 chop marks at one end (35x28, 40x38mm), 6 tools marks over one face indicative of hewing (22x3-25x4mm) and 1 axe stop mark on same face (34x12mm).	208 x 52 x 19	Tangentially split	S, H
1	1208	1218	9	128m	Ash (Fraxinus excelsior)	Woodworking debris.	4	Woodchip, with 4 faces, 2 facets	2 facets on one face (35x11, 69x11mm)	44 X 35 X 11	Tangentially split	H
4.1	1224	1224	10	N/A	Oak (Quercus sp.)	Post	3	Oak post, with crude chop marks, tapering to a crude pencil-point with 4 main facets, heavy damage (taphonomic and excavation) on unworked end.	Tool marks observed on 2 of the main facet: 7 facets on one (20x14 to 76x42mm); 4 stop marks one one (19x10 to 32x10mm). Damage may mask other tool marks.	342 x 145 x 112	N/A	S, H
1	1208	1225	9	127a	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	151 x 19 x 14	N/A	S, H

Period	Cut	Cxt.	Tr.	Wood no.	Species	Type	Condition (0-5)	Description	Working marks	Dimensions (mm)	Timber Conversion	B/ S/ H
1	1208	1225	9	127b	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	132 x 31 x 26	N/A	S, H
1	1208	1225	9	127c	Oak (Quercus sp.)	Bark debris	3	Unworked bark debris	N/O	75 x 44 x 18	N/A	S, H
1	1208	1225	9	127d	Willow (Salix sp.)	Unmodified roundwood	3	Knotted Unmodified roundwood	N/O	55 x 42 x 28	N/A	S, H
1	1208	1225	9	127e	Ash (Fraxinus excelsior)	Woodworking debris.	2	Worked item, possible offcut, with one worked facet. Taphonomic damage masks any tool marks	1 worked facet on one face (98x35mm)	187 x 36 x 16	Tangentially split	S
1	1208	1225	9	127f	Ash (Fraxinus excelsior)	Woodworking debris.	3	Worked item, possible offcut.	1 chop mark at undamaged end (25x26) and 1 tool mark indicative of hewing (33 x 12)	167 x 29 x 25	Tangentially split	S
1	1208	1225	9	127g	Ash (Fraxinus excelsior)	Woodworking debris.	3	Woodchip, with taphonomic damage masking any tool marks	N/O	49 x 45 x 9	Radially split	S, H
1	1208	1225	9	a	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	46 x 19 x 11	N/A	S, H
1	1208	1225	9	b	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	45 x 19 x 11	N/A	S, H
1	1208	1225	9	c	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	150 x 19 x 11	N/A	S, H
1	1208	1225	9	d	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	100 x 19 x 11	N/A	S, H
1	1208	1225	9	e	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	90 x 19 x 11	N/A	S, H
1	1208	1225	9	f	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	80 x 19 x 11	N/A	S, H
1	1208	1225	9	g	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	75 x 19 x 11	N/A	S, H
1	1208	1225	9	h	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	110 x 19 x 11	N/A	S, H

Period	Cut	Cxt.	Tr.	Wood no.	Species	Type	Condition (0-5)	Description	Working marks	Dimensions (mm)	Timber Conversion	B/ S/ H
1	1208	1225	9	i	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	120 x 19 x 11	N/A	S, H
1	1208	1225	9	j	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	145 x 19 x 11	N/A	S, H
1	1208	1225	9	k	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	139 x 19 x 11	N/A	S, H
1	1208	1225	9	l	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	145 x 19 x 11	N/A	S, H
1	1208	1225	9	m	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	142 x 19 x 11	N/A	S, H
1	1208	1225	9	n	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	150 x 19 x 11	N/A	S, H
1	1208	1225	9	o	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	138 x 19 x 11	N/A	S, H
1	1208	1225	9	p	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	55 x 19 x 11	N/A	S, H
1	1208	1225	9	q	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	70 x 19 x 11	N/A	S, H
1	1208	1225	9	r	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	90 x 19 x 11	N/A	S, H
1	1208	1225	9	s	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	85 x 19 x 11	N/A	S, H
1	1208	1225	9	t	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood, superficially burnt	N/O	70 x 19 x 11	N/A	S, H
1	1208	1225	9	u	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood, fully burnt	N/O	50 x 19 x 11	N/A	S, H
1	1208	1225	9	v	Alder (Alnus glutinosa)	Bark debris	3	Unworked debris with taphonomic damage	N/O	66 x 438 x 5	N/A	B
1	1208	1225	9	w	Alder (Alnus glutinosa)	Bark debris	3	Unworked debris with taphonomic damage	N/O	50 x 30 x 5	N/A	B
1	1208	1225	9	x	Alder (Alnus glutinosa)	Bark debris	3	Unworked debris with taphonomic damage	N/O	32 x 29 x 6	N/A	B
1	1208	1225	9	y	Alder (Alnus glutinosa)	Bark debris	3	Unworked debris with taphonomic damage	N/O	40 x 250 x 5	N/A	B

Period	Cut	Cxt.	Tr.	Wood no.	Species	Type	Condition (0-5)	Description	Working marks	Dimensions (mm)	Timber Conversion	B/ S/ H
1	1208	1225	9	z	Oak (Quercus sp.)	Bark debris	3	Unworked debris with taphonomic damage	N/O	60 X 380 X 6	N/A	B
1	1208	1225	9	a1	Oak (Quercus sp.)	Bark debris	3	Unworked debris with taphonomic damage	N/O	54 x 55 x 5	N/A	B
1	1208	1225	9	a2	Willow (Salix sp.)	Unclassified debris	3	Unworked debris with taphonomic damage. Fully burnt	N/O	126 x 67 x 21		H
1	1208	1225	9	a3	Willow (Salix sp.)	Unclassified debris	2	Unworked debris with taphonomic damage	N/O	118 x 55 x 18		H
1	1208	1225	9	a4	Willow (Salix sp.)	Unclassified debris	2	Unworked debris with taphonomic damage	N/O	107 x 48 x 10		H
1	1208	1225	9	a5	Willow (Salix sp.)	Unclassified debris	2	Unworked debris with taphonomic damage	N/O	98 x 33 x 17		H
1	1208	1225	9	a6	Willow (Salix sp.)	Unclassified debris	2	Unworked debris with taphonomic damage	N/O	87 x 53 x 20		H
1	1208	1225	9	a7	Willow (Salix sp.)	Unclassified debris	2	Unworked debris with taphonomic damage	N/O	123 x 22 x 9		H
1	1208	1225	9	a8	Willow (Salix sp.)	Unclassified debris	2	Unworked debris with taphonomic damage	N/O	75 x 15 x 20		H
1	1208	1225	9	a9	Willow (Salix sp.)	Unclassified debris	2	Unworked debris with taphonomic damage	N/O	85 x 20 x 10		H
1	1208	1225	9	b1	Willow (Salix sp.)	Unclassified debris	2	Unworked debris with taphonomic damage	N/O	55 x 15 x 10		H
1	1208	1225	9	b2	Willow (Salix sp.)	Unclassified debris	2	Unworked debris with taphonomic damage	N/O	45 x 19 x 11		H
1	1208	1225	9	b3	Willow (Salix sp.)	Unclassified debris	2	Unworked debris with taphonomic damage	N/O	38 x 33 x 9		H
1	1208	1225	9	b4	Alder (Alnus glutinosa)	Unclassified debris	3	Unworked debris with taphonomic damage	N/O	26 x 35 x 10		H
1	1208	1225	9	b5	Ash (Fraxinus excelsior)	Unclassified debris	3	Unworked debris with taphonomic damage	N/O	23 x 29 x 7		H
1	1226	1228	9		Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight roundwood	N/O	55 x 9 x 8	N/A	H

Period	Cut	Cxt.	Tr.	Wood no.	Species	Type	Condition (0-5)	Description	Working marks	Dimensions (mm)	Timber Conversion	B/ S/ H
1	1226	1228	9	N/A	Willow (Salix sp.)	Unmodified roundwood	3	Unworked, straight Unmodified roundwood, fully charred.	N/O	78 x 19 x 16	N/A	H
1	1226	1228	9	N/A	Oak (Quercus sp.)	Unclassified debris	3	Unworked debris with taphonomic damage	N/O	49 x 23 x 11	N/A	B, S, H

Table 65: Description of wood

Datable items

B.13.23 No items were suitable for dendrochronology or for radiocarbon dating.

Retention and disposal

B.13.24 All items can be discarded as there is no further work needed.

B.14 Textile

By Penelope Walton Rogers (at The Anglo-Saxon Laboratory)

Description

B.14.1 Fragments of a poorly preserved textile (SF 122) were recovered from the waterlogged basal fill (1218) of Period 1 (Late Anglo-Saxon) ditch **1208** in Area 9. They represent the selvedge (side border) of a particularly coarse textile, which has seen extensive wear, to judge from the slight matting of both faces. The yarn it has been woven from is S-spun, 2 mm diameter, in the warp and Z-spun, 2.5-3.0 mm diameter, in the weft, with the addition of a plied strengthening cord at the selvedge, made of two Z-spun yarns loosely twisted together in the Z-direction (Z2Z). The thread-count is five per cm in the warp and two per cm in the weft, although this is likely to represent a count of 2-3 x 2 per cm in the main body of the cloth, since selvedges are often more closely woven than the rest. Transmitted-light microscopy of the fibres indicated that the raw material was an animal coat fibre, probably low-grade wool. The fibres were in an advanced state of decay and the diagnostic cuticular scale pattern had almost disappeared, but where present it was the irregular mosaic with smooth margins commonly found in wool (Appleyard 1978, 26–7, 113–6). The fibres were medium and coarse, 20-90 microns in diameter. There was no evidence for pigmentation, which suggests that the fibre was originally white.

B.14.2 The coarse quality of the textile and the fibre it is made from are typical of products derived from quayside, warehouse and industrial sites, where they almost certainly represent a form of sacking. Late medieval examples are usually made of plied yarn, and goat hair can substitute for wool (Walton Rogers 2012), but tabby-weave textiles made of singles yarn and coarse wool, as here, have been found on the site of workshops at Anglo-Scandinavian Coppergate, York (Walton 1989, 318–9). Although, in later periods, sacking came to be made of plant fibres, sackcloth made of animal fibre (and sometimes used for the hair shirts of penitents) appears in written sources as early as the 5th century (Walton Rogers 2012, 125).

B.15 Textile conservation

By Charlotte Wilkinson (at York Archaeological Trust (YAT))

Introduction

B.15.1 This report describes the conservation of a textile fragment excavated by Oxford Archaeology East on the site of Lower Brook Street, Ipswich (YAT Conservation Report No.: 2018/63). The work carried out has been the stabilisation of the object through

the removal of excess soil and bringing it to the appropriate dry storage. Once treated, the object will be packed appropriately for return to the client and for archive storage.

Description

Textile (IPS 865; SF 122; Ditch 1208 in Area 9; Period 1 context 1218)

B.15.2 The textile arrived at the YAT Conservation Laboratory on a damp and fragmented soil block. The textile has already been examined by a textile specialist who had removed some sections of textile and bagged them separately. Two bags were found in the packaging, one labelled 'Textile Loose On Top' and one labelled 'Z & S Yarns Next to Textile'. On initial examination of the soil block the extent of the material present was not initially clear. Numerous woody inclusions were visible along with loose fibres however no significant sections of textile.

Methodology

B.15.3 Before any conservation work was undertaken a test sample of the already separated fibre was air-dried to confirm this would be a suitable treatment. The test was successful as no shrinkage was observed. Excess soil was removed through brushing the fibres once dry with a soft bristle brush.

B.15.4 The soil block was investigated to ascertain the extent of textile present. Sections of sand and silt were carefully removed using wooden tools and soft brushes under magnification. This revealed the presence of a small rectangular section of degraded and fragile textile.



Plate B.15.1: Textile section found on soil block

B.15.5 As much excess soil was removed from around the textile and a thermoplastic support was produced so the soil block could be reversed and excess soil removed from the underneath section. Excess soil was removed mechanically with wooden tools until the edges of the textile became visible. Three spits of soil were removed and bagged separately. At this stage due to the fragile nature of the textile it was deemed necessary to leave it on a small soil block for support as removing it completely would cause too much damage and disruption to the fibres.



Plate B.15.2: Thermoplastic mount and micro-excavation of textile

- B.15.6 The supporting soil block was consolidated using a solution of 15% Primal WS24 v/v in 50:50 Industrial Methylated Spirits (IMS) and Reverse Osmosis (RO) water and it was left to thoroughly air dry. The remaining sections of soil block were examined and no substantial areas of textile were found to be present. Any substantial fibres found were carefully removed using tweezers and wooden tools and then air-dried. The remaining soil blocks were left to thoroughly air dry and repackaged.
- B.15.7 Photographs before and after treatment, can be found in Plate B.15.3, below.

Recommendations

- B.15.8 The object has been packaged in perforated plastic boxes with bespoke Plastazote™ support. Smaller fragments have been packaged separately in envelopes of acid free tissue inside finds bags Jiffy® foam inserts for support. The textiles are extremely fragile and should be stored flat. If possible, the objects are to be viewed in their packaging.
- B.15.9 The objects are now stable but should be stored in an environment of 50-55% Relative Humidity and a stable temperature. Light levels should not exceed 50 lux. Handle the objects with care due to the fragile nature of exposed surfaces.

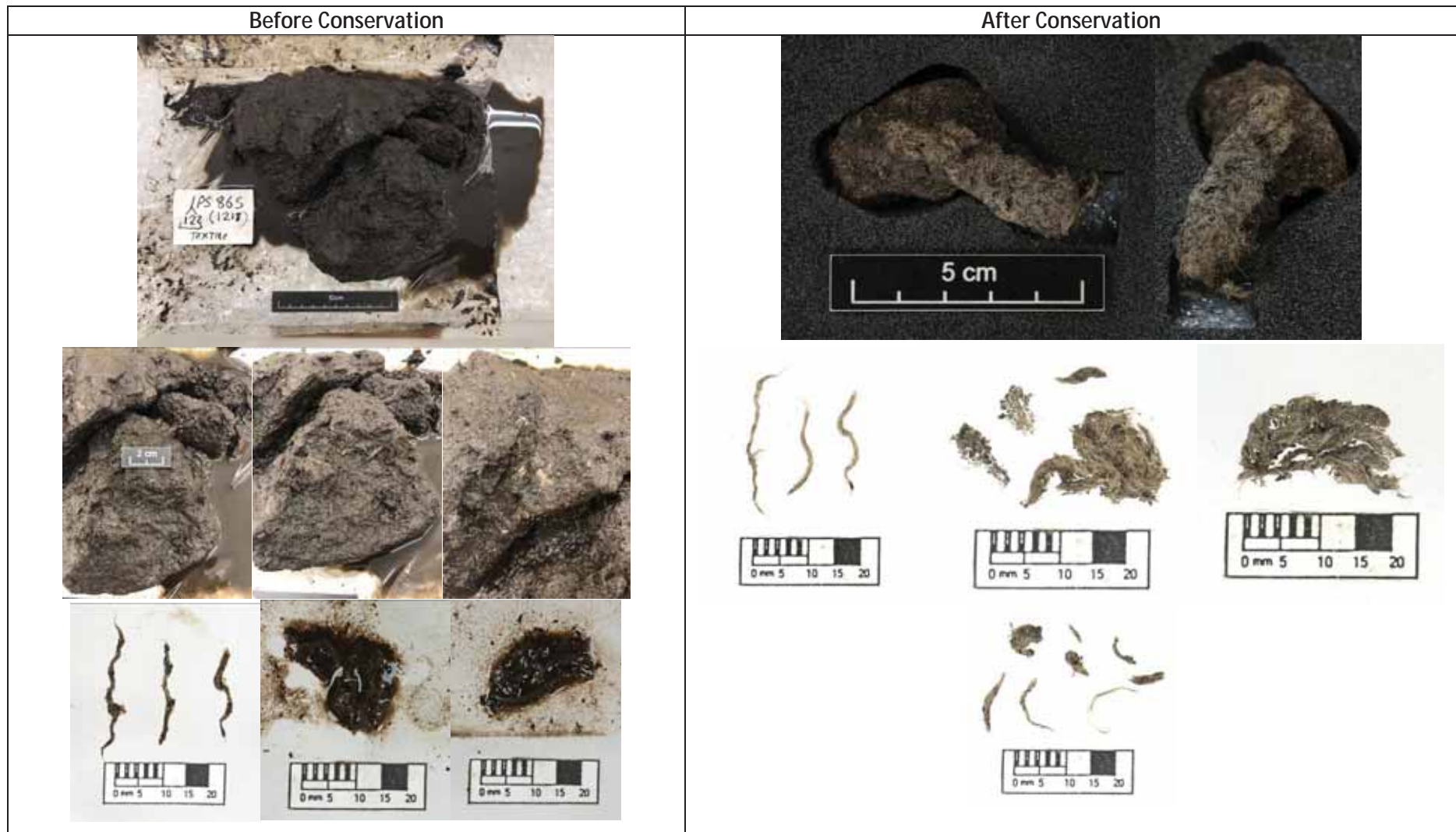


Plate B.15.3: Photographs of textile

APPENDIX C ENVIRONMENTAL REPORTS

C.1 Human bone

By Natasha Dodwell

Introduction and provenance of material

- C.1.1 Thirteen fragments of disarticulated human bone were recovered from eight contexts during the archaeological investigations at the site. Bone from Periods 3 and 4 contexts 206 and 207 in Test Pit 2, both described as layers of ‘cultivation garden soil’ were identified in the 2016 evaluation and, a further eleven elements were recovered in the excavation phase (in Period 1 pit **1103** and ditch **1208**, in two Period 4 demolition layers 1206 and 1320, and Period 4 wall 1440).
- C.1.2 A fragment of skull, from a male cranium (1206), recovered from Period 4 (Phase 4.1) demolition layer 1260 was submitted for radiocarbon dating and returned a date of 776–1046 cal AD (SUERC – 103221, 95.4% probability). The date suggests that the bones probably derive from a disturbed Late Anglo-Saxon burial ground in the vicinity.

Methodology

- C.1.3 The disarticulated skeletal elements were recorded using Knüsel and Outram’s zonation method (2004) so that the minimum number of individuals could be calculated.
- C.1.4 Because of the disarticulated and fragmentary nature of the assemblage many of the standard methods used to determine the age and sex of individuals could not be utilised. Age and sex were determined where possible using the standard methods presented in Buikstra and Ubelaker (1994). An approximate age was determined, where possible using the stage of epiphyseal fusion (Schaefer *et al* 2009) and, depending on the skeletal element, the pattern of molar attrition (Brothwell 1981) and the appearance of cranial sutures Meindl and Lovejoy 1985). When this was not possible a broad age category, such as ‘adult’ was based on the size and general robusticity of the skeletal element.
- C.1.5 The following age categories were used, although broad categories.

Age Category	Age Range
Juvenile	5-12yrs
subadult	13-18yrs
Young Adult	19-25years
Middle adult	26-44years
Mature adult	45years+

Table 66: Human bone age categories

- C.1.6 Sexually dimorphic traits on the adult skull and pelvis fragments were used to determine a tentative sex.
- C.1.7 The surface condition of the cortical bone was scored using the McKinley grading system where 0 equals clearly visible surface morphology and 5 equals heavy erosion where all surface morphology is masked (Brickley and McKinley 2004, 16 fig.6).

Condition of the bone

- C.1.8 None of the disarticulated skeletal elements are complete; the breaks have all occurred post-mortem, some during the archaeological investigations but the majority in antiquity. The femoral head from context 1440 has been sliced through, possibly by a spade and, the smoothness of cut surface, through the trabecular and cortical bone suggests that this occurred whilst there was still some collagen in the bone.

Results and discussion

- C.1.9 Osteological information pertaining to the disarticulated elements is summarised in Table 67. Based on the duplication of elements and the ages and sexes attributed to the skeletal fragments a *minimum* of three individuals – an immature person, probably a juvenile/subadult, a young adult female and a mature adult male – are represented. The only pathological changes that were observed were dental (calculus and caries).
- C.1.10 It is likely that these disarticulated human bones derive from a disturbed Late Saxon cemetery in the locale.

	Period	Cut no.	Context. no.	Sample no.	element	Zone *	Age/sex	Condition **	pathology
Eval.	4.2	N/A	206		r. rib	1,2	adult	2-4	
	4.2				lumbar vert.	1, 2, 3	Juvenile/ young subadult	1	
	3		207	1	Spinous process (thoracic vert)	2,3,4	Older sub adult/adult	1	
	3		207		R. ilium	1, 4, 5, 7	Young adult female	1	
	3		207		u/s frag.of parietal skull	3 or 4	Immature (thin with sharp sutures)	2	
Ex.	1	1103	1104		3rd maxillary molar		?Young/middle adult (no attrition)		Large caries
	4.1	1260	1206		cranium (no mandible)	1,2,5,6,7,8,9, 10, 11,12,13,14,15	Middle/mature adult male	2-5	Calculus on surviving maxillary dentition
	1	1208	1210		r. mandible with heavily worn 1st molar	1	Mature adult	1	Large caries
	4.2	N/A	1320		Distal l. distal fibula	2, 3	adult	4	
	3	N/A	1409		Proximal phalange (hand/foot)	3	Older subadult/adult	1	
	3		1409		2 or 4 metacarpal	1,2,3	adult	2	
	3		1409		r. rib	1, 2	Adult/subadult	2	
4.1	N/A	1440		Proximal femur (inc. head)	4, 5	Older subadult/young adult	1		

Table 67: Human bone catalogue (* Knüsel and Outrum 2004, ** Brickley and McKinley 2004)

C.2 Animal bone

By Joshua White

Introduction

C.2.1 A total of 2,610 fragments of animal bone weighing 62.278kg was recovered from the site (see catalogue: Table 73). Of this assemblage, 2,223 fragments (55.538kg) were recovered from features and deposits dating to the Late Anglo-Saxon and medieval periods (Table 68), which form the subject of this report. An additional assemblage of material was recovered from post-medieval and modern deposits at the site, which has been omitted from this analysis due to its probable residual and reworked nature. These remains have been catalogued and can be found separately in the digital archive. Worked bone and fish remains are reported on separately in Appendices B.11 and C.3 respectively.

Period	Fragments (total)	Weight (kg)	Total NISP	Identifiable NISP
Period 1: Late Anglo-Saxon	2,114	53.584	1,935	839
Period 2: medieval	119	1.954	114	41
Period 3 and 4: post-medieval–modern	377	6.74	309	128
<i>Total</i>	2,610	62.278	2,358	1008

Table 68: Quantification of animal bone assemblage by period

C.2.2 The Late Anglo-Saxon assemblage was predominantly recovered from pits, ditches, postholes and layers in Area 9, with a small amount of animal bone retrieved from Area 8 and evaluation Trench 6. The vast majority of the assemblage was hand-collected, with only 46 fragments (0.616kg) recovered from the residues of bulk samples. The small medieval assemblage was mostly recovered during the evaluation phases of the project, from Trenches 2, 3, 5 and 11, with 13 additional fragments recovered from a buried soil identified during the excavation (Areas 10 and 11).

C.2.3 The assemblage is dominated by cattle, with pigs and sheep/goat also present in large numbers. Equid bones are rare, with dog remains conversely well represented. Wild mammals are poorly represented, although small counts of red deer, brown hare and house mouse are present. Domestic birds are present in moderate numbers (dominated by chickens), with counts of wild bird species being relatively low. The data retrieved from the assemblage is broadly consistent with direct urban provisioning through markets (Crabtree 2021). The recovery of neonatal pig remains suggests that some animals were also being kept and reared within the vicinity of the site.

Methodology

C.2.4 The bones were recorded using a modified version of the guidelines described in Davis (1992) and Baker and Worley (2014), with the remains quantified using the number of identified specimens method (NISP). The refitting of fragments clearly deriving from

the same specimen was undertaken, with refitted specimens only counted once. Data was recorded into a *Microsoft Excel* worksheet, which forms part of the digital archive.

- C.2.5 Bone was recorded to groups, such as medium mammal, large mammal or medium – large mammal where identifications to taxa could not be made due to a lack of diagnostic features. Age-at-death was estimated either through analysis of tooth wear and eruption, or the state of epiphysial fusion. Teeth were assessed using data presented by Payne (1973), Habermehl (1975) and Halstead (1985), with fusion rates recorded using Smith (1968), Silver (1969), Ruddle (1997) and Popkin *et al.* (2012).
- C.2.6 Evidence for butchery was recorded, noting the type, such as cut, chopped or sawn along with its location on a specimen. A note was also made of animal gnawing and bone that had been burnt. Where possible, ovicaprid remains were sexed and distinguished between sheep and goat using Prummel and Frisch (1986), with cattle remains sexed with reference to Grigson (1982). Biometric calculations followed guidelines set out by Von den Driesch (1976) using digital calipers, with withers heights assessed through data published by Foch (1966), Harcourt (1974) and Teichert (1975). Full biometric data can be found in the digital archive. Analysis of intra-site spatial distributions has not been conducted due to the small size of the excavation area from which the remains were recovered.

Results of analysis

- C.2.7 The bone assemblage is in a moderate condition, but with a high degree of surface erosion and fragmentation. Fragmentation has occurred partially through perthotaxic factors in antiquity, such as extensive carcass processing and breakdown by canids, but also through the effects of chemical and physical taphic processes in the burial environment. As a result of these factors, 57% (NISP) of the Late Anglo-Saxon and medieval assemblage comprises small, abraded diaphyses fragments which cannot be identified to species; these specimens can only be grouped into approximate size categories, as presented in Table 69. A further drawback of the animal bone assemblage is that a significant proportion of the specimens have a cementitious iron-rich sand adhered to their surfaces, which somewhat obscured the full investigation of possible butchery marks and other surface modifications during the analysis.
- C.2.8 Despite this, suitable data was retrieved on relative species proportions, age-at-death and biometrics, with insights on butchery practices, animal pathologies and discard practices also ascertained. The results of the analysis are described below by taxa.
- C.2.9 Canid gnawing is relatively rare across the assemblage, only being identified on 14 specimens, possibly suggesting butchery waste was rapidly buried. Few bones are burnt, with only two specimens exhibiting light charring and only seven are heavily calcined, probably resulting from accidental or deliberate discard into fires.

Species	Late Anglo-Saxon (Period 1)		Medieval (Period 2)		Total	
	NISP	NISP %	NISP	NISP %	NISP	NISP %
Cattle	412	49.12	15	36.58	427	48.52
Pig	198*	23.59	10	24.39	208*	23.65

	Late Anglo-Saxon (Period 1)		Medieval (Period 2)		Total	
Sheep/goat	146	17.40	11	26.83	157	17.84
Dog	18**	2.16			18**	2.05
Horse	7	0.83	2	4.88	9	1.02
Cat	2	0.23			2	0.23
Red deer	2	0.23			2	0.23
Brown hare			1	2.44	1	0.11
House mouse	3	0.36			3	0.34
Domestic fowl	34	4.05	1	2.44	35	3.98
Domestic goose	4	0.48			4	0.45
Raven	1	0.12			1	0.11
Brent goose	1	0.12			1	0.11
Wader sp.	3	0.36			3	0.34
Wood pigeon	1	0.12			1	0.11
Common frog	7	0.83	1	2.44	8	0.91
<i>Large mammal</i>	<i>379</i>		<i>12</i>		<i>391</i>	
<i>Medium-large mammal</i>	<i>567</i>		<i>50</i>		<i>617</i>	
<i>Medium mammal</i>	<i>119</i>		<i>6</i>		<i>125</i>	
<i>Small-medium mammal</i>	<i>1</i>				<i>1</i>	
<i>Small mammal</i>	<i>11</i>				<i>11</i>	
<i>Mammal</i>	<i>7</i>				<i>7</i>	
<i>Amphibian</i>	<i>1</i>				<i>1</i>	
<i>Bird</i>	<i>14</i>		<i>1</i>		<i>15</i>	
Total	839	100	41	100	880	100

Table 69: Number of identifiable specimens (NISP) by period. Totals and percentages have been calculated using only the proportion of the assemblage identifiable to taxa

*123 fragments from a single neonatal pig were found – included here with a NISP value of one

** 34 fragments from a single dog were found – included here with a NISP value of one

Cattle

C.2.10 Cattle (*Bos taurus*) are the most numerous species present in the Late Anglo-Saxon (Period 1) assemblage, accounting for 49% (NISP) of the total identifiable remains (Table 69). They are represented by a wide range of anatomical elements (App. Fig. C.2.1), suggesting the assemblage is comprised of both primary and secondary butchery waste – although there is a marked abundance of both lower limb and cranial elements, perhaps indicating a greater degree of carcass processing (as opposed to consumption), in the near vicinity of the site. Chop marks are present on 10% of the Period 1 cattle remains, with cut marks identified across 4%.

C.2.11 No neonatal cattle remains were recovered from the site, suggesting breeding was not taking place in the vicinity, consistent with urban provisioning through markets.

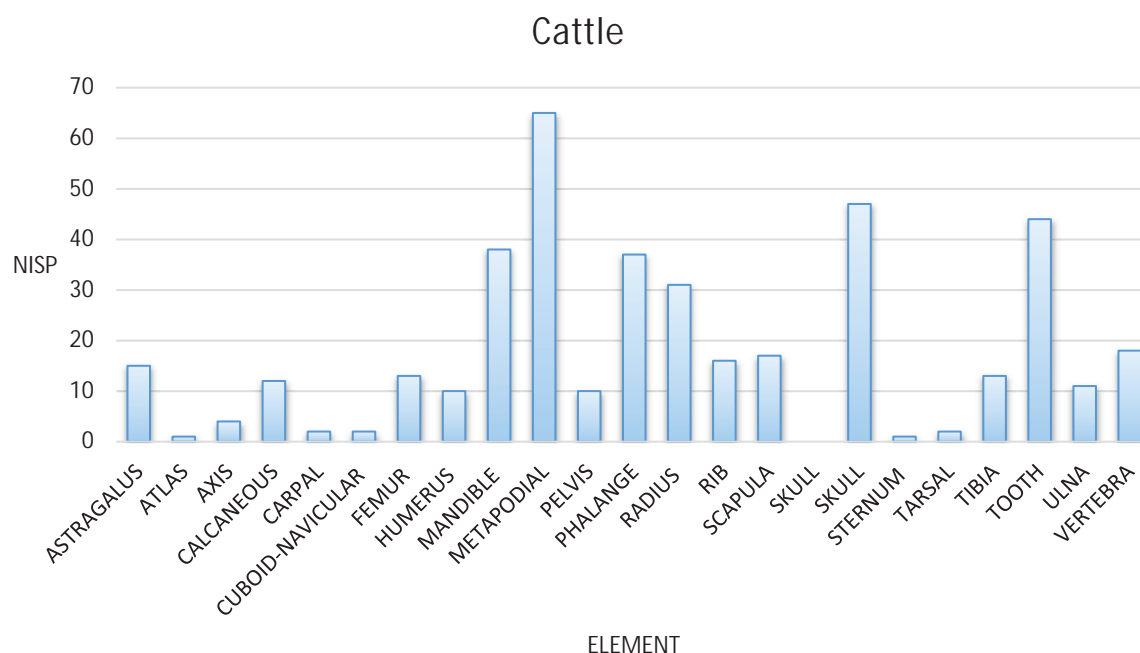


Fig. C.2.1: Period 1: Late Anglo-Saxon cattle remains – quantification of anatomical elements by NISP

C.2.12 Epiphyseal fusion data however does point towards the presence of juvenile cattle in low numbers, with two specimens suggesting the occasional slaughter of stirks (yearlings) (Table 70). Overall, a range of ages is represented in the assemblage, with a moderate number of animals slaughtered prior to reaching 3.5 to 4 years old, but with a significant number also appearing to live beyond 4.5 years, possibly indicating use in traction, breeding and/or milking prior to the utilisation of their primary products. This is supported by data from the cattle mandibles in the assemblage, which exhibit moderate to heavy wear of the third molars (MWS 39–45), suggesting animals aged between four and eight years of age (from a non-statistically valid sample size of three (Shennan 1988)).

Fusion centres	Age-at-death (months)	Number	% Unfused
Scapula (tuberosity)	<7-10	0	0%
	>7-10	12	
Humerus (distal); Radius (proximal)	<12 - 18	2	8.6%
	>12-18	21	
Phalanges (distal)	<18	0	0%
	>18	26	
Metacarpal (distal)	<24-30	6	27.2%
	>24-30	16	
Metatarsal (distal)	<27-36	3	23%
	>27-36	10	
Calcaneous (tuber calcis)	<36-42	4	40%
	>36-42	6	
Femur (proximal)	<42	4	100%
	>42	0	
	<42-48	8	

Fusion centres	Age-at-death (months)	Number	% Unfused
Femur (distal); Tibia (proximal); Humerus (proximal); Radius (distal); Ulna (olecranon and distal)	>42-48	11	42.1%
Pelvis	<54	0	0%
	>54	1	
Vertebrae	<60	8	88.8%
	>60	1	

Table 70: Period 1: Late Anglo-Saxon cattle epiphyseal fusion (sample 139 NISP)

C.2.13 Relatively few complete bones are available through which to estimate withers heights, although seven metapodials measured suggest animals ranging from 107–128cm in height. Pathologies related to degenerative joint disease, possibly caused through joint related stress, were identified on seven specimens including a cattle proximal phalange from pit 1037 with minor osteophyte formations around its distal end and a probable lytic lesion on the proximal articular surface of a cattle metacarpal from pit 1147. A necrotic distal phalange from pit 1208 exhibits excessive osteophyte formation, porosity and a heavily disturbed articular surface with radically altered subchondral bone texture (App. Plate C.2.1), most likely indicative of septic arthritis and osteomyelitis, probably caused through an infected injury or an advanced foot abscess (Bartosiewicz 2013, 95).



Plate C.2.1: Necrotic distal phalange from Period 1 pit 1208 (proximal aspect, medial and lateral views)

C.2.14 Cattle remains are also most numerous in the assemblage dating from the medieval period, however the size of this sample was too small from which to draw useful data, with fusion data only provided by a single specimen and no bones measurable through which to estimate withers heights.

Pigs

C.2.15 The porcine remains recovered from the Late Anglo-Saxon deposits are consistent with those of domestic pigs (*Sus scrofa domesticus*); no evidence for the presence of wild boar is present, with all lower third molar lengths falling below the upper limit for the domestic pig (Evin *et al.* 2014). They comprise the second most numerous fauna, accounting for 24% of the total identifiable assemblage. There is a more even distribution of elements across the porcine remains compared to cattle, but on the whole cranial elements are most abundant, possibly reflecting deposits comprised mostly of primary butchery waste (App. Fig. C.2.2).

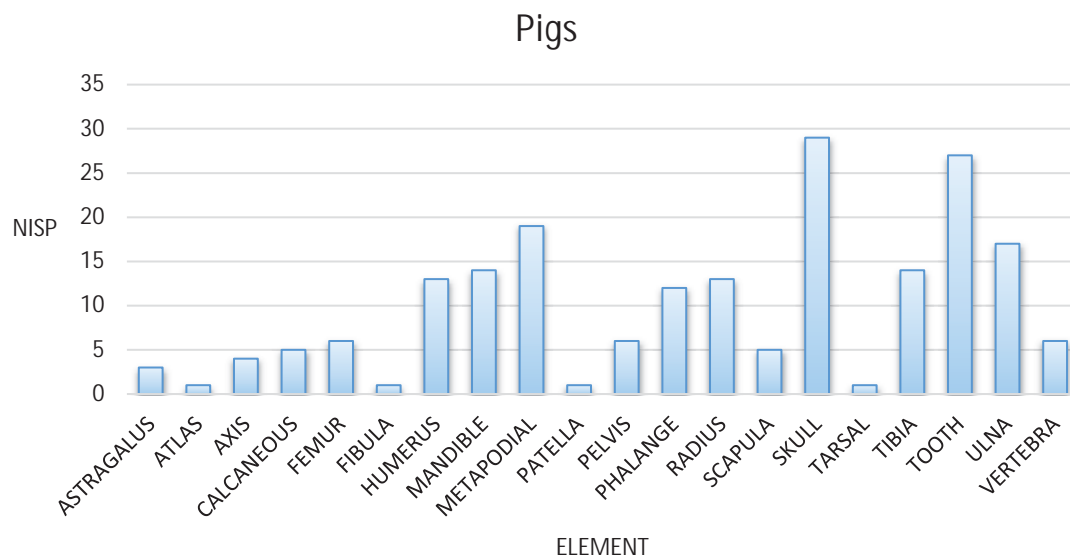


Fig. C.2.2: Period 1: Late Anglo-Saxon pig remains – quantification of anatomical elements by NISP

Fusion centres	Age-at-death (months)	Number	% Unfused
Scapula (tuberosity); Humerus (distal); Radius (proximal); Intermediate Phalange (proximal); Pelvis	<12	4	17.4%
	>12	19	
Metacarpal (distal); Proximal Phalange (proximal); Tibia (distal)	<24	13	61.9%
	>24	8	
Metatarsal (distal)	<27	4	80%
	>27	1	
Calcaneous (tuber calcis)	<24-30	4	100%
	>24-30	0	
	<36-42	8	

Fusion centres	Age-at-death (months)	Number	% Unfused
Ulna (olecranon and distal)	>36-42	1	88.8%
Humerus (proximal); Radius (distal); Femur (proximal and distal); Tibia (proximal); Fibula (proximal)	<42	3	60%
	>42	2	

Table 71: Period 1: Late Anglo-Saxon pig epiphyseal fusion (sample 67 NISP)

- C.2.16 A range of ages are represented in the Late Anglo-Saxon assemblage, with both juvenile and adult individuals present. Few suitable mandibles are available through which to estimate age-at-death, but the fusion data demonstrates the presence of animals slaughtered under a year of age, with some surviving beyond 3.5 years. Most animals however appear to have been slaughtered between one to two years old, consistent with market-ready animals reared for meat production (Table 71). Significantly, the remains of a complete neonatal pig were recovered from Late Anglo-Saxon layer 1146 (123 fragments), suggesting that pigs were being kept and bred in the near vicinity.
- C.2.17 Due to the high fragmentation of the remains and the abundance of mostly unfused juvenile specimens, no measurements could be taken to accurately estimate porcine withers heights. No pathological markers are present on the pig remains, consistent with a predominantly young population. Chop and cut marks are only present on 4.5% and 2.5% of the Period 1 porcine remains respectively (NISP).
- C.2.18 As with cattle, the small Period 2 sample size precludes detailed investigation of the medieval porcine remains.

Sheep/goat

- C.2.19 The ovicaprid remains, where identifiable to species, predominantly appear to comprise of sheep (*Ovis aries*) with small numbers of goats (*Capra hircus*), consistent with the broader picture from Late Anglo-Saxon and medieval Ipswich (Crabtree 2021). Ovicaprids comprise 17% of the total identifiable Period 1 assemblage from the site, and as with both the cattle and porcine remains, although a range of elements is represented, the predominance of the lower limb metapodials and cranial elements may point towards an assemblage mostly comprised of primary butchery waste (App. Fig. C.2.3).
- C.2.20 Again, the sample of suitable mandibles through which to understand the age-at-death of ovicaprids is too small to be considered statistically valid, however the four which are present indicate the slaughter of animals at various ages, with ranges of 'one to two years', 'two to four years', 'four to six years' and 'over six years' each represented by one mandible. Fusion data also points towards the slaughter of animals at a range of ages, although animals appear to have rarely been slaughtered under two years of age (Table 72).

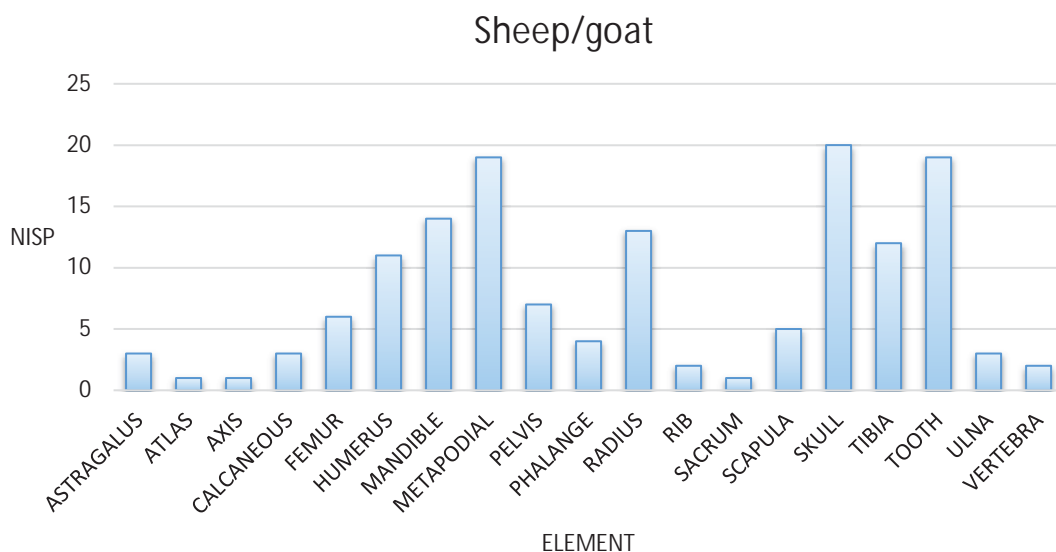


Fig. C.2.3: Period 1: Late Anglo-Saxon ovicaprid remains – quantification of anatomical elements by NISP

Fusion centres	Age-at-death (months)	Number	% Unfused
Scapula (tuberosity)	<6-8	0	0%
	>6-8	4	
Humerus (distal); Radius (proximal);	<10	1	8.3%
	>10	11	
Metacarpal (distal)	<18-24	1	10%
	>18-24	9	
Metatarsal (distal)	<20-28	0	0%
	>20-28	4	
Ulna (olecranon and distal)	<30	1	50%
	>30	1	
Femur (proximal); Calcaneous (tuber calcis)	<30-36	3	60%
	>30-36	2	
Radius (distal)	<36	0	0%
	>36	3	
Humerus (proximal); Femur (distal); Tibia (proximal)	<36-42	2	66.6%
	>36-42	1	

Table 72: Period 1: Late Anglo-Saxon ovicaprid epiphyseal fusion (sample 43 NISP)

C.2.21 No skeletal pathologies are apparent on the ovicaprid remains, and cut and chop marks are present on 8% and 9% of the Late Anglo-Saxon assemblage respectively (NISP). Seventy percent of the chopped ovicaprid remains comprise horncores which had been removed from skulls, suggesting a degree of horn processing and possibly working in the vicinity of the site. However, these were not found clustered together or in any particular concentrations, suggesting this was not a specialised activity undertaken at the site and most likely only carried out infrequently. Two

corresponding pairs of horns cores were found together in Period 1 pit/ditch terminus **1208**, and possibly indicate that dehorning and possible horn processing was undertaken as part of standard carcass butchery, on an *ad hoc* basis, when animals died or were slaughtered.

C.2.22 The measurements taken upon seven Late Anglo-Saxon ovicaprid radii and metapodials indicate shoulder heights ranging from 50–65cm.

Domestic birds

C.2.23 Domestic birds are represented by chickens (*Gallus domesticus*) and geese (*Anser answer domesticus*), with the former outnumbering the latter by a ratio of 17:2. A range of elements is represented, indicating both primary and secondary butchery waste. A tarso-metatarsus with a spur was recovered from Period 1 ditch **1184**.

Other domestic animals

C.2.24 The other domestic animals recovered from the Late Anglo-Saxon deposits excavated at the site comprise only a small part of the overall assemblage. Equid remains are particularly rare, mostly represented by vertebrae fragments, with part of a scapula recovered from Period 1 ditch **1040**. No measurable bones were recovered through which to estimate withers heights, but the presence of fully fused vertebrae indicates animals aged over five years.

C.2.25 Cat (*Felis catus*) remains are represented by an adult mandible from Period 1 ditch **1107** and a femur of an animal aged under seven to nine months from Period 1 layer 1146. Dog (*Canis lupus familiaris*) remains are represented by a diverse range of specimens, including the radius of a very large dog (also from layer 1146) with a shoulder height of 69cm. A fine cut mark is present on the distal end of this specimen suggesting the animal was probably skinned. The remains of a small terrier-type dog (34 fragments) with a shoulder height of 29cm were recovered from Period 1 pit/ditch terminus **1208**; these were not found in articulation and possibly represent the remains of a disturbed and redeposited burial. No pathological markers are present on the specimen which was aged over 15 months at the time of its death, and it does not appear to have been butchered or skinned. The presence of fairly young dogs in the vicinity of the site is indicated by an unfused humerus from pit **1147**, belonging to an animal under eight to nine months old.

Wild fauna

C.2.26 Wild mammals comprise a very small part of the Late Anglo-Saxon animal remains from the site. Red deer is represented by a calcaneus from Period 1 pit **1147** and a skull fragment from Period 1 ditch **1194**, from which the antler has been sawn. A single brown hare (*Lepus europaeus*) humerus was recovered from Period 2 buried soil 210 in Trench 2. Small counts of house mouse (*Mus musculus*) and common frog (*Rana temporaria*) were recovered from Period 1 features, and wild bird remains comprise raven (*Corvus corax*), wood pigeon (*Columba palumbus*), brent goose (*Branta bernicla*) and wader species.

Discussion

- C.2.27 The animal bone recovered from Lower Brook Street indicates that the communities who lived and worked in the vicinity of the site consumed primarily domestic mammals and birds. Cattle appear to have been the most economically significant animals, with pig and sheep also playing an important role in people's diets during the Late Anglo-Saxon and medieval periods. Domestic fowl also form a notable component of the recovered assemblage and were most likely kept by the inhabitants of the town.
- C.2.28 Although age-at-death data was limited due to the small counts of mandibles through which to construct mortality profiles, fusion data suggests that the cattle comprise a mix of market-aged animals explicitly reared for meat production, along with smaller counts of younger animals, possibly related to veal/dairy production, and older animals that may have originally been used in traction or dairying. Pig remains appear to represent predominantly market-aged animals brought to the town and slaughtered during their second year; though the presence of animals aged over 42 months and the recovery of a neonatal specimen suggests that some hogs were also reared in the vicinity of the site. The age-at-death data for ovicaprids is less clear with animals slaughtered at a range of ages, most likely reflecting their versatility of use in meat, dairy, lanolin and wool production. Despite the recovery of chopped horncores, specialist horn and antler working was not taking place at the site (e.g., see Adams 2018), but has been identified at St Nicholas Street, c.200m to the north-west (Crabtree 2021).
- C.2.29 Overall, the faunal remains from Lower Brook Street fit the patterns identified by Crabtree's (2021) metanalysis of animal bone assemblages from 16 Anglo-Saxon and medieval sites across the town. This large study established that cattle were of particular economic importance, with Ipswich appearing to be supplied with significant quantities of beef; consistent with the picture from urban centres throughout North-West Europe during this period (Lauwerier 1997; Holmes 2017; Crabtree 2021). The mortality profiles for the main domesticates modelled by Crabtree's study are consistent with the findings from Lower Brook Street, with this assemblage adding further support to Crabtree's (2021, 52) suggestion that the populations of Late Anglo-Saxon and medieval Ipswich obtained animal products through direct market provisioning, as opposed to indirect provisioning. The estimated cattle and ovicaprid withers heights from the Period 1 deposits at Lower Brook Street are also consistent with those recovered from other parts of the Late Anglo-Saxon town (Crabtree 2021).
- C.2.30 The variety of anatomical elements present at Lower Brook Street suggests that the Late Anglo-Saxon assemblage comprises both primary and secondary butchery waste; however, the greater quantities of cranial and lower limb elements may indicate that primary butchery waste from initial carcass processing forms the bulk of the assemblage. The abundance of such elements suggests that animals were exchanged whole and possibly 'on the hoof', as opposed to being slaughtered and processed outside the town.
- C.2.31 Horses are not common in the assemblage from Lower Brook Street, and this is consistent with the wider picture from Anglo-Saxon and medieval Ipswich, where

horse remains are rare and do not appear to form part of the diet (Crabtree 2021). As reflected at Lower Brook Street, dog remains from Ipswich are common and show a variety of sizes in their heights. Crabtree’s analysis identified dogs ranging in shoulder height from 28–56cm (Crabtree 2021), emphasising the size of the large dog from layer 1146, with an estimated shoulder height of 69cm – in the range of modern Rottweilers and Dobermann.

C.2.32 Wild animals comprise only a minor component of the assemblage, but with the exception of the red deer, hare and possibly the brent goose and wader remains, these most likely represent commensal species which inhabited the immediate environment of the site. House mice would have taken advantage of the environments and shelter afforded by human structures, and the raven remains are consistent with the quantities of corvids previously recovered from the Anglo-Saxon and medieval town (Crabtree 2021), which would have scavenged for carrion around the settlement. The incorporation of the common frog remains into the assemblage likely results from animals hibernating amongst midden material and organic debris that would have accumulated in the base of features.

C.2.33 The animal bone from the Late Anglo-Saxon and medieval deposits at the site contributes to the growing corpus of faunal remains recovered from Ipswich, which as a whole, are able to inform upon the urban provisioning and animal husbandry of the town and its hinterlands, as well as grant insights into the social practices carried out by the communities present at the settlement across the 9th to 15th centuries.

Retention and dispersal

C.2.34 It is recommended that the Period 1 and 2 animal bone assemblage be retained as it adds to the picture of diet, animal husbandry and the social zooarchaeology of Late Anglo-Saxon and medieval Ipswich. The Period 3 and 4 remains however are of a residual nature and are of minimal archaeological significance. This assemblage could be dispersed, or may have value through use as a teaching, outreach or reference resource.

Quantification

Context	Sample No.	Area	Feature/description	Period	No. Fragments	Context weight (kg)
210		trench 2	buried soil	2	20	0.18
210	3	trench 2	buried soil	2	58	0.088
211		trench 2	layer	2	3	0.064
211	4	trench 2	layer	2	3	0.008
302		trench 3	truncation 312	2	4	0.255
302	2	trench 3	truncation 312	2	4	
314		trench 3	truncation 312	2	2	0.41
314	14	trench 3	truncation 312	2	2	
506		trench 5	brook 507	2	1	0.122
506	1	trench 5	brook 507	2	1	
519		trench 5	brook 507	2	2	0.083
603		trench 6	layer	1	15	1.739
603	20	trench 6	layer	1	2	
604		trench 6	layer	1	1	0.188
605		trench 6	pit 606	1	24	1.097
605	16; 17; 18; 19	trench 6	pit 606	1	14	
612		trench 6	pit 610	1	2	0.186

Context	Sample No.	Area	Feature/description	Period	No. Fragments	Context weight (kg)
750		trench 7	pit 751	2	1	0.038
750	24	trench 7	pit 751	2	2	
757	27	trench 7	layer	2	2	
758		trench 7	layer	2	1	0.166
1038		8	pit 1037	1	6	0.35
1041		9	ditch 1040	1	35	2.14
1055		9	ditch 1040	1	7	0.04
1057		9	ditch 1056	1	37	2.35
1057	508	9	ditch 1056	1	8	0.125
1058		9	ditch 1055	1	7	0.09
1060		9	pit 1059	1	4	0.08
1062		9	ditch 1061	1	12	0.16
1063		9	ditch 1061	1	24	0.8
1063		9	ditch 1061	1	2	0
1070		9	layer	1	8	0.1
1075			layer			
1077		9	pit 1076	1	19	0.3
1077		9	pit 1076	1	1	0.001
1081		9	pit 1080	1	41	1.75
1081	515	9	pit 1080	1	3	0.428
1083	516	9	pit 1080	1	3	0.178
1085		9	pit 1084	1	9	0.59
1087		9	pit 1084	1	48	1.44
1087	519	9	pit 1084	1	2	0
1089		9	gully 1088	1	5	0.19
1093		9	ditch 1091	1	5	0.08
1096		9	pit 1095	1	20	0.61
1100		9	pit 1099	1	33	0.65
1102		9	gully 1101	1	17	0.93
1104		9	pit 1103	1	5	0.28
1104		9	pit 1103	1	2	0.002
1106		9	ditch 1105	1	5	0.1
1106	526	9	ditch 1105	1	2	0
1108		9	ditch 1107	1	6	0.44
1108	527	9	ditch 1107	1	8	0.006
1110		9	pit 1190	1	6	0.25
1118	532	9	pit 1117	1	1	0
1120		9	ditch 1119	1	2	0.06
1122		9	pit 1121	1	4	0.26
1133		9	pit 1133	1	3	0.04
1135		9	pit 1136	1	1	0.01
1138		9	posthole 1139	1	4	0.1
1146		9	layer	1	296	6.22
1148		9	pit 1147	1	84	2.67
1153		9	ditch 1151	1	14	0.58
1159		9	ditch 1158	1	57	0.37
1159	537	9	ditch 1158	1	1	0
1161		9	ditch 1160	1	32	1.59
1163		9	posthole 1162	1	2	0.06
1165		9	gully 1164	1	5	0.03
1169		9	pit 1168	1	1	0.01
1171		9	pit 1170	1	9	0.02
1177		9	pit 1176	1	20	0.42
1177		9	pit 1176	1	1	0
1179		9	pit 1178	1	2	0.02
1181		9	gully 1180	1	13	0.81
1183		9	ditch 1182	1	46	1.09
1183	539	9	ditch 1182	1	1	0.002

Context	Sample No.	Area	Feature/description	Period	No. Fragments	Context weight (kg)
1185		9	ditch 1184	1	133	3.01
1187		9	ditch 1186	1	21	0.41
1189		9	posthole 1188	1	42	0.42
1189	542	9	posthole 1188	1	4	0.001
1191		9	ditch 1190	1	82	1.43
1193		9	pit 1192	1	4	0.01
1195		9	ditch 1194	1	252	2.88
1197		9	ditch 1196	1	31	0.72
1203		9	posthole 1202	1	3	0
1204		9	ditch 1190	1	9	0.12
1205		9	ditch 1194	1	7	0.4
1209		9	pit/ditch terminus 1208	1	171	3.19
1210		9	pit/ditch terminus 1208	1	134	1.55
1211		9	pit/ditch terminus 1208	1	43	1.74
1211	546	9	pit/ditch terminus 1208	1	1	0
1217		9	pit/ditch terminus 1208	1	6	0.15
1218		9	pit/ditch terminus 1208	1	19	0.49
1225		9	pit/ditch terminus 1208	1	2	0.04
1227		9	pit 1226	1	78	2.76
1227	551	9	pit 1226	1	3	0.001
1228		9	pit 1226	1	18	2.15
1228	552	9	pit 1226	1	1	0
1450		11	buried soil	2	9	0.42
1457		10	buried soil	2	4	0.12

Table 73: Period 1 and Period 2 animal bone – basic quantification by context

C.3 Fish bone

By Rebecca Nicholson

Introduction

C.3.1 An assemblage of 894 potentially identifiable fragments of fish bone were recovered predominantly from the dried residues of soil samples that has been sieved and sorted down to 2mm. Only 27 of these fragments was recovered by hand during the excavations. The great majority of fish remains derived from deposits dating to the Late Anglo-Saxon period (Period 1). Otherwise, 17 fragments came from deposits associated with the brook area (Period 0), eight came from medieval (Period 2) and 24 fragments came from buried soil horizon 207 (Period 3, post-medieval). Bone from the post-medieval deposit could be residual from earlier phases in this cultivated soil and so are of limited significance. Due to the very small numbers of medieval and post-medieval fish bones, the discussion below focusses only on those from the Late Anglo-Saxon period.

C.3.2 Taxa commonly identified in the samples include herring (*Clupea harengus*), eel (*Anguilla anguilla*), small flatfishes (mostly right-eyed: Pleuronectidae), garfish (*Belone*

belone), mackerel (*Scomber scombrus*), small gadid including whiting (*Merlangius merlangus*), and cod (*Gadus morhua*).

Methodology

- C.3.3 Soil sample residues were sorted using the following methodology: following flotation each residue (heavy fraction) was wet sieved through a sieve stack and all of the >4mm fractions were fully sorted while only 25% of the <4mm fractions were sorted. This means that small bones, typically those from small fish or small-boned fish, will be under-represented. No attempt has been made to scale up the results from the finer fractions and the tabulated results are presented separately. Soil sample volumes are presented elsewhere.
- C.3.4 The bones and dermal structures were identified to species and anatomical element largely using the author's personal reference collection in conjunction with published guides (Watt *et al.* 1997). Where identifications were uncertain, the bones have been identified either to family level or have been classified as unidentified. Scientific nomenclature follows the taxonomy of fishbase (<https://www.fishbase.se> ver. (06/2022)). Bones were identified to species where possible, otherwise to genus or family. Spines, ribs, rays, cranial fragments and branchial bones were only identified when particularly diagnostic to species or genus. Most of the clupeid bones (herring/sprat/sardine/shad) were classified as herring or shad based on their size and morphology. However, the similarity between some sprat and small herring vertebrae and most cranial bones means sprat (*Sprattus sprattus*) may be a minor component of the small clupeids and therefore some small bones are classified only as clupeid, while almost certainly being from herring.
- C.3.5 Fish scales were only very occasionally present and can be difficult to identify as they vary in appearance not only between taxa but also with position along the body. Other dermal structures include the distinctive skin bucklers, thorns and prickles from rays, but these are not abundant and have been individually counted with attempts were made to speciate ray (Rajidae) dermal denticles using guidelines in Gravendeel *et al.* (2002).
- C.3.6 Few bones were suitable for measurement and so fish sizes were usually estimated by a direct visual comparison with bones from comparative modern fishes. Where possible, measurements were taken, using digital callipers to 0.01mm, on the premaxilla and dentary (following Wheeler and Jones 1976) of gadiform fish as follows: premaxilla - width of the ascending process; dentary - depth from the tooth row to the base of the ridge, taken at the posterior margin of the nutrient foramen (M1) and depth at the symphysis (M2). Occasional other measurements were taken, including the chord length of the eel cleithrum, with size estimations based on Thieren *et al.* (2012). These are defined in the recording spreadsheet which will be available in the site archive. Where sizes are indicated for gadiform fish (mostly fish of the cod family, Gadidae) the following sizes apply: tiny (under 0.2m length), small (0.2-0.4m), medium (0.4-0.7m), large (0.7-1m), extra-large (over 1m). For flatfishes, small (under 0.3m) medium (0.3-0.5m), large (over 0.5m).

The assemblage

- C.3.7 The bone is in variable condition but typically fair or poor. Several samples comprised fish bones that appeared dark brown and oily, with some corroded and/or crushed and probably masticated specimens, suggestive of cooked fish that had been chewed and in some cases bones that had been partially digested. These remains are discussed further below.
- C.3.8 Freshwater fish include possible perch (*Perca fluviatilis*) in Late Anglo-Saxon gully and ditch fills 1102 and 1217 and a small salmonid, probable brown trout (*Salmo trutta*) in 1102. Eels were also probably a freshwater catch although as a catadromous fish they migrate upstream from the sea as elvers and can be found in coastal waters. Otherwise, the entire collection of bones come from seafish although some of these, including shad (*Alosa* sp.), flounder (*Platychthys flesus*) and grey mullet (Mugilidae) can be found in estuaries and even penetrating far upstream, thin-lipped grey mullets (*Chelon ramada*) being catadromous and shad being anadromous fish.
- C.3.9 As is often the case in later Anglo-Saxon and medieval assemblages, herring and eel are present in most samples and were clearly staple foodstuffs. Ipswich was an important port and trading *wic* and it is likely that fresh fish would have been readily available. Nevertheless, herring is an oily fish that degrades fairly quickly and most of the herrings that were traded at the time would have been preserved by salting and packed in barrels. Although the East Anglian herring fishery became a major industry in the medieval period (Barrett *et al.* 2004) it was clearly significant in the middle and late Anglo-Saxon periods and herring bones occur regularly at a wide range of sites, some far inland such as Oxford (Nicholson 2019). Eels too may have been salted, although a ready supply of fresh eels would have been available from the fens, where Domesday records demonstrate that they were fished in great abundance. Salthouses are recorded in the Domesday Book, particularly in settlements located near the coast but also including some inland sites such as Bury St Edmunds (<http://opendomesday.org/place/TL8564/bury-st-edmunds/>) An under-representation of eel head bones led to the suggestion that salted eels may have been present in Anglo-Saxon deposits at Stoke Quay (Nicholson 2020). Garfish, identified both from vertebrae and their distinctive jaw bones, are a migratory pelagic species which move inshore during late spring and summer and are likely to have been caught in floating nets operating from boats, possibly along with mackerel or herring.
- C.3.10 Gadoid bones include cod, some of which were clearly large specimens including a fish of over 1.3m total length from late Anglo-Saxon ditch fill 1195, based on the premaxilla measurement of 20.9mm and the data of Wheeler and Jones (1976). The presence of cranial bones from these fish is likely to indicate a local catch, purchased fresh. Smaller cod, haddock and whiting are also likely to be local catches, and while these fish could be salted to enhance preservation, it is likely that fresh fish were available from the fishermen and markets of Ipswich.
- C.3.11 Small and medium-sized flatfish, mostly plaice, flounder or dab (Pleuronectidae) could be caught using a variety of methods including seine and set nets positioned along the shore to catch fish on the falling tide, although they will also take a baited line. Although mostly identified from vertebrae and, occasionally, the anal pterygiophore

(modified haemal spine) some cranial elements were present and these included an unusual left premaxilla from buried soil or cultivation layer 207 (Period 3), most similar in overall shape to plaice (*Pleuronectes platessa*) but with a double tooth row, a feature more commonly associated with flounder (*Platythys flesus*). Double tooth rows are known in young plaice, <12cm long (Wouters *et al.* 2007, 42) but this individual is larger, of similar size to a reference fish of 25cm.

C.3.12 Sea bream, in this case probably black sea bream (*Spondylisoma cantharus*), conger eel (*Conger conger*), grey mullet (*Chelon* sp.), gurnards (Triglidae) and rays (Rajidae) are likely to have been occasional catches. The only ray to be formally identified is thornback, identifiable from its distinctive dermal denticles or bucklers. As cartilaginous fish, sharks and rays are likely to be under-represented archaeologically as only dermal structures and occasional mineralised vertebral centra survive archaeologically.

Discussion

C.3.13 The fish remains from these excavations have much in common with assemblages from previous excavations nearby. Jones (2004) reported a very similar suite of bones from Saxo-Norman and medieval deposits at Turret Lane while middle Saxon samples from Lower Brook Street included many of the same taxa but had a larger freshwater component, especially eel but also including pike (*Esox lucius*) and cyprinid (Cyprinidae) in what was a collection of only 198 fish bones. Eel was also abundant in Middle Saxon pit fills at Stoke Quay, Ipswich (Nicholson 2020) and a focus on seafish and eel and a paucity of other freshwater fish is typical of most Anglo-Saxon and medieval sites in the town (Locker and Jones 1995), despite the proximity of the River Orwell which, as the River Gipping, is freshwater above Ipswich (White 1844, 62).

Species		Number of Period 1 collected fragments
Elasmobranchii	Shark/ray	1
Clupeidae	Herrings	1
<i>Conger conger</i>	Conger eel	1
Gadidae	Cod family	2
<i>Gadus morhua</i>	Cod	15
<i>Gadus/Pollachius</i>	Cod/Saithe/Pollack	3
<i>Melanogrammus aeglefinus</i>	Haddock	2
Pleuronectidae	Right-eyed flatfish	3
Unidentified		1
Grand Total		29

Table 74: Number of identifiable fish remains (NISP), hand collected

Species		Number of collected fragments			
		Period 0	Period 1	Period 2	Total
Elasmobranchii	Shark/ray		5		5
Rajidae	Rays		2		2
<i>Raja clavata</i>	Thornback		5		5
Salmonidae	Salmon/Trout		1		1
<i>Anguilla anguilla</i>	European eel		13		13
Clupeidae	Herrings	1	1		2
<i>Clupea harengus</i>	Herring		58		58
<i>Alosa</i> sp.	Shad		4		4
<i>Belone belone</i>	Garfish		25	2	27

Species		Number of collected fragments			
		Period 0	Period 1	Period 2	Total
Gadidae	Cod family	1	25		26
<i>Gadus morhua</i>	Cod		38		38
<i>Gadus/Pollachius</i>	Cod/Saithe/Pollack		10		10
<i>Melanogrammus aeglefinus</i>	Haddock		1		1
<i>Merlangius merlangus</i>	Whiting		7		7
<i>Chelon ramada/aurata</i>	Thin lipped/golden grey mullet		2		2
Triglidae	Gurnards		1		1
Sparidae (cf <i>Spondyllosoma cantharus</i>)	Black sea bream?		1		1
<i>Scomber scombrus</i>	Mackerel	1	20		21
cf <i>Scomber scombrus</i>	Mackerel?		1		1
Bothidae/Scophthalmidae/Pleuronectidae	Flatfish		2		2
Pleuronectidae	Right-eyed flatfish		21		21
<i>Platichthys flesus</i>	Flounder		1		1
cf <i>Platichthys flesus</i>	Flounder?		2		2
<i>Pleuronectes platessa</i>	Plaice		4		4
cf <i>Pleuronectes platessa</i>	Plaice?		3		3
<i>Solea solea</i>	Sole		3		3
Unidentified			18		18
Grand Total		3	274	2	279

Table 75: Number of identifiable fish remains (NISP) from the 10-4mm sieve fraction (100% of each sorted)

Species		Number of collected fragments				
		Period 0	Period 1	Period 2	Period 3	Total
Elasmobranchii	Shark/ray	1	1			2
Rajidae	Rays		2			2
<i>Raja clavata</i>	Thornback		4			4
<i>Anguilla anguilla</i>	European eel	1	87	1	2	91
Clupeidae	Herrings		7		1	8
<i>Clupea harengus</i>	Herring	9	371	4	13	397
<i>Alosa</i> sp.	Shad		7			7
<i>Belone belone</i>	Garfish		4		1	5
Gadidae	Cod family	2	5	1		8
<i>Gadus morhua</i>	Cod		1			1
<i>Melanogrammus aeglefinus</i>	Haddock		1		2	3
<i>Merlangius merlangus</i>	Whiting		2			2
Cottidae	Cottids		1			1
Gasterostidae	Stickleback		1			1
cf <i>Perca fluviatilis</i>	Perch?		2			2
Sparidae	Sea breams		1			1
cf Sparidae	Sea Bream?		1			1
<i>Scomber scombrus</i>	Mackerel		6			6
cf <i>Scomber scombrus</i>	Mackerel?		1			1
Bothidae/Scophthalmidae/Pleuronectidae	flatfish		3			3
Pleuronectidae	Right-eyed flatfish		10		3	13
<i>Platichthys flesus</i>	Flounder				1	1
<i>Pleuronectes platessa</i>	Plaice		2			2
cf <i>Pleuronectes platessa</i>	Plaice?				1	1
Unidentified		1	22			23
Grand Total		14	542	6	24	586

Table 76: Number of identifiable fish remains (NISP) from the 4-2mm sieve fraction (25% of each sorted)

C.4 Marine mollusca

By Joshua White

Introduction

C.4.1 A total of 407 shells or shell fragments weighing 5,257g were recovered during the trial trenching and excavation. The assemblage comprises exclusively marine species and is dominated by the European flat oyster, with lower counts of blue mussel and common whelk. Seventy-one percent (NISP) of the assemblage was recovered from Late Anglo-Saxon features and deposits (Period 1) and points towards the occasional consumption of shellfish at or in the vicinity of the site during this period. The remainder of the assemblage was recovered from post-medieval (Period 3), modern (Period 4) and undated deposits, which most likely comprises mixed residual material. Consequently, the later and undated assemblages are presented in Table 77, but not discussed further.

Methodology

C.4.2 Each specimen was scanned to identify species, with the valve side noted along with any modifications/butchery marks or evidence of parasitic infestation. The assemblage was recorded using a modified version of the methodology set out by Winder (2011). The mollusca were quantified by context through both the NISP (number of identified specimens present) and MNI (minimum number of individuals) methods. Data was recorded into a *Microsoft Access* spreadsheet which forms part of the digital archive, where a biometric sample of the assemblage can be found. A summary catalogue is presented at the end of this report (Table 78).

Results

C.4.3 Quantification of the mollusca from the site is presented in Table 77 by period:

Species	Period 1: Late Anglo-Saxon		Period 3: Post-medieval		Period 4: Modern		Undated		Total	
	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI
European flat oyster	276	112	23	13	80	28	7	2	386	155
Blue mussel	13	4	-	-	-	-	4	2	17	6
Common whelk	-	-	-	-	3	3	1	1	4	4
<i>Total</i>	<i>289</i>	<i>116</i>	<i>23</i>	<i>13</i>	<i>83</i>	<i>31</i>	<i>12</i>	<i>5</i>	<i>407</i>	<i>165</i>

Table 77: Quantification of the mollusca assemblage by period

C.4.4 The Late Anglo-Saxon assemblage is dominated by European flat oyster (*Ostrea edulis*) specimens, with a minimum of 112 individuals present. Oysters accounts for 95% of the Period 1 mollusca remains, with a total weight of 3,820g. The assemblage was evenly distributed across the Late Anglo-Saxon features recorded in Area 9, recovered in consistently low numbers from the fills of ditches, pits and postholes, with no concentrations of shells identified.

- C.4.5 Twelve shells demonstrate evidence of having been shucked, with 14 specimens having notches, created to help prise open the shells and access the flesh.
- C.4.6 Incidences of parasitic infestation and damage caused to shells by other organisms is relatively rare across the assemblage. Evidence of bristle worm (*Polydora ciliata*) damage can be seen on 12 specimens, with marks of the boring sponge (*Cliona celata*) evident on four shells. Seven specimens have small circular perforations which most likely derive from having been predated by snails such as the oyster drill (*Ocenebra erinacea*), with a mark on one specimen most likely caused by the parasite *Polydora hoplura*.
- C.4.7 Five percent of the total assemblage comprises blue mussel (*Mytilus edulis*) specimens, representing a minimum of only four individuals (8g). Most of the assemblage was recovered from ditch intervention **1208** and is in a poor condition.

Discussion

- C.4.8 This small assemblage points towards the occasional consumption of shellfish at or in the vicinity of the site during the Late Anglo-Saxon period. Such remains are relatively ubiquitous from the pre-Conquest town and have previously been recovered in greater numbers during other excavations in the area, including for example c.600m to the south-east at Stoke Quay (Fernandez and Snape 2020).
- C.4.9 Due to the dispersed nature of the assemblage, it appears to reflect the general day-to-day background consumption and discard of oysters at the site, as opposed to reflecting dumps of accumulated midden material. Consequently, it is difficult to accurately comment on the relative economic/dietary significance of shellfish to the inhabitants of the site.
- C.4.10 Due to the situation of Ipswich near to the coast, it is unsurprising that the Late Anglo-Saxon communities had access to brackish/marine shellfish, which were most probably accessed through local markets. The shellfish recovered from Lower Brook Street most likely originated from environments around the estuary of the River Orwell and the mouth of the River Stour, c.12km to the south-east. However, beds located in deeper waters were beginning to be exploited during the Middle and Late Anglo-Saxon periods – consequently, it is possible that part of the assemblage originated from further off the coast (Winder 1992, 277).

Retention and dispersal

- C.4.11 The molluca assemblage recovered from the site can be dispersed as it has been fully recorded and is of limited archaeological significance.

Summary catalogue

Context	Cut	Feature	Trench	Period	Species	No of shells or frags	Total Weight (kg)
1				0	<i>Buccinum undatum</i>	1	0.02
3				0	<i>Ostrea edulis</i>	1	0.05
3				0	<i>Ostrea edulis</i>	1	0.02
3				0	<i>Ostrea edulis</i>	2	0

Context	Cut	Feature	Trench	Period	Species	No of shells or frags	Total Weight (kg)
3				0	<i>Ostrea edulis</i>	1	0
3					<i>Ostrea edulis</i>	1	0.02
603			6	1	<i>Ostrea edulis</i>	1	0.03
605	606	pit	6	1	<i>Ostrea edulis</i>	1	0.02
1002					<i>Ostrea edulis</i>	1	0
1041	1040	ditch	9	1	<i>Ostrea edulis</i>	1	0.03
1041	1040	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1041	1040	ditch	9	1	<i>Ostrea edulis</i>	1	0.02
1057	1056	ditch	9	1	<i>Ostrea edulis</i>	2	0.02
1057	1056	ditch	9	1	<i>Ostrea edulis</i>	2	0.01
1057	1056	ditch	9	1	<i>Ostrea edulis</i>	1	0.04
1057	1056	ditch	9	1	<i>Ostrea edulis</i>	1	0.04
1057	1056	ditch	9	1	<i>Ostrea edulis</i>	1	0.02
1057	1056	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1057	1056	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1057	1056	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1057	1056	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1057	1056	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1057	1056	ditch	9	1	<i>Ostrea edulis</i>	2	0.06
1057	1056	ditch	9	1	<i>Ostrea edulis</i>	2	0.03
1057	1056	ditch	9	1	<i>Ostrea edulis</i>	1	0.03
1057	1056	ditch	9	1	<i>Ostrea edulis</i>	1	0.02
1057	1056	ditch	9	1	<i>Ostrea edulis</i>	1	0.02
1057	1056	ditch	9	1	<i>Ostrea edulis</i>	1	0
1057	1056	ditch	9	1	<i>Ostrea edulis</i>	4	0.01
1062	1061	ditch	9	1	<i>Ostrea edulis</i>	1	0
1063	1061	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1063	1061	ditch	9	1	<i>Ostrea edulis</i>	1	0
1063	1061	ditch	9	1	<i>Ostrea edulis</i>	1	0.02
1063	1061	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1063	1061	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1081	1080	pit	9	1	<i>Ostrea edulis</i>	1	0.08
1081	1080	pit	9	1	<i>Ostrea edulis</i>	1	0.05
1081	1080	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1081	1080	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1081	1080	pit	9	1	<i>Ostrea edulis</i>	1	0.01
1081	1080	pit	9	1	<i>Ostrea edulis</i>	1	0.01
1084	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.05
1086	1084	pit	9	1	<i>Mytilus edulis</i>	4	0
1086	1084	pit	9	1	<i>Ostrea edulis</i>	3	0.05
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02

Context	Cut	Feature	Trench	Period	Species	No of shells or frags	Total Weight (kg)
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.01
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.01
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.01
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.01
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.01
1086	1084	pit	9	1	<i>Ostrea edulis</i>	2	0.04
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.06
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.05
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.04
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.04
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.04
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.04
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.04
1086	1084	pit	9	1	<i>Ostrea edulis</i>	2	0.03
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.03
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.03
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.03
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.03
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.03
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.03
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.03
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.03
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.03
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.03
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.03
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.03
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	3	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02

Context	Cut	Feature	Trench	Period	Species	No of shells or frags	Total Weight (kg)
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.01
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.01
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.01
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0
1086	1084	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1086	1084	pit	9	1	<i>Ostrea edulis</i>	3	0.01
1086	1084	pit	9	1	<i>Ostrea edulis</i>	7	0.01
1093	1091	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1093	1091	ditch	9	1	<i>Ostrea edulis</i>	1	0
1094	1091	ditch	9	1	<i>Ostrea edulis</i>	2	0.01
1094	1091	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1094	1091	ditch	9	1	<i>Ostrea edulis</i>	2	0.03
1094	1091	ditch	9	1	<i>Ostrea edulis</i>	1	0.02
1094	1091	ditch	9	1	<i>Ostrea edulis</i>	1	0.02
1094	1091	ditch	9	1	<i>Ostrea edulis</i>	1	0.02
1096	1095	pit	9	1	<i>Ostrea edulis</i>	2	0.01
1102	1101	gully	9	1	<i>Ostrea edulis</i>	1	0.01
1104	1103	pit	9	1	<i>Ostrea edulis</i>	2	0.03
1106	1105	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1120	1119	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1122	1121	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1122	1121	pit	9	1	<i>Ostrea edulis</i>	1	0.04
1148	1147	pit	9	1	<i>Ostrea edulis</i>	1	0.01
1148	1147	pit	9	1	<i>Ostrea edulis</i>	1	0.03
1148	1147	pit	9	1	<i>Ostrea edulis</i>	1	0.01
1159	1158	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1159	1158	ditch	9	1	<i>Ostrea edulis</i>	2	0.01
1159	1158	ditch	9	1	<i>Ostrea edulis</i>	2	0
1161	1160	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1161	1160	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1173	1172	gully	9	1	<i>Ostrea edulis</i>	3	0.05
1177	1176	pit	9	1	<i>Ostrea edulis</i>	1	0
1179	1178	pit	9	1	<i>Ostrea edulis</i>	1	0
1181	1180	gully terminus	9	1	<i>Ostrea edulis</i>	1	0.01
1181	1180	gully terminus	9	1	<i>Ostrea edulis</i>	1	0
1183	1182	ditch	9	1	<i>Ostrea edulis</i>	1	0.01

Context	Cut	Feature	Trench	Period	Species	No of shells or frags	Total Weight (kg)
1183	1182	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1183	1182	ditch	9	1	<i>Ostrea edulis</i>	1	0.05
1183	1182	ditch	9	1	<i>Ostrea edulis</i>	1	0.04
1183	1182	ditch	9	1	<i>Ostrea edulis</i>	1	0
1185	1184	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1185	1184	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1185	1184	ditch	9	1	<i>Ostrea edulis</i>	1	0
1185	1184	ditch	9	1	<i>Ostrea edulis</i>	3	0.02
1185	1184	ditch	9	1	<i>Ostrea edulis</i>	1	0.02
1185	1184	ditch	9	1	<i>Ostrea edulis</i>	1	0
1185	1184	ditch	9	1	<i>Ostrea edulis</i>	2	0.01
1189	1188	posthole	9	1	<i>Ostrea edulis</i>	2	0.01
1189	1188	posthole	9	1	<i>Ostrea edulis</i>	1	0
1191		ditch	9	1	<i>Ostrea edulis</i>	1	0.02
1191		ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1191		ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1191		ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1195		ditch	9	1	<i>Ostrea edulis</i>	2	0.02
1195		ditch	9	1	<i>Ostrea edulis</i>	2	0.01
1195		ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1195		ditch	9	1	<i>Ostrea edulis</i>	3	0.02
1195		ditch	9	1	<i>Ostrea edulis</i>	2	0.01
1195		ditch	9	1	<i>Ostrea edulis</i>	2	0
1195		ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1195		ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1195		ditch	9	1	<i>Ostrea edulis</i>	5	0.01
1195		ditch	9	1	<i>Ostrea edulis</i>	2	0.01
1195		ditch	9	1	<i>Ostrea edulis</i>	2	0
1195		ditch	9	1	<i>Ostrea edulis</i>	2	0
1195		ditch	9	1	<i>Ostrea edulis</i>	1	0
1197	1196	ditch	9	1	<i>Ostrea edulis</i>	1	0.02
1197	1196	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1197	1196	ditch	9	1	<i>Ostrea edulis</i>	1	0.03
1204	1190	ditch	9	1	<i>Ostrea edulis</i>	1	0.02
1205	1194	ditch	9	1	<i>Ostrea edulis</i>	1	0.02
1205	1194	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1205	1194	ditch	9	1	<i>Ostrea edulis</i>	1	0
1209	1208	pit/ditch terminus	9	1	<i>Mytilus edulis</i>	3	0
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	2	0.01
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	1	0.03

Context	Cut	Feature	Trench	Period	Species	No of shells or frags	Total Weight (kg)
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	1	0.03
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	1	0.02
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	1	0.02
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	1	0.01
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	2	0.03
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	1	0.08
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	1	0.03
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	1	0.01
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	1	0.01
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	3	0.02
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	7	0.02
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	1	0.01
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	3	0.01
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	3	0.01
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	1	0.01
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	1	0
1209	1208	pit/ditch terminus	9	1	<i>Ostrea edulis</i>	1	0
1210	1208	ditch	9	1	<i>Mytilus edulis</i>	2	0
1210	1208	ditch	9	1	<i>Mytilus edulis</i>	4	0
1210	1208	ditch	9	1	<i>Ostrea edulis</i>	3	0.02
1210	1208	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1210	1208	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1210	1208	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1210	1208	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1210	1208	ditch	9	1	<i>Ostrea edulis</i>	1	0
1210	1208	ditch	9	1	<i>Ostrea edulis</i>	2	0.01
1210	1208	ditch	9	1	<i>Ostrea edulis</i>	1	0.03
1210	1208	ditch	9	1	<i>Ostrea edulis</i>	1	0.03
1210	1208	ditch	9	1	<i>Ostrea edulis</i>	1	0.02
1210	1208	ditch	9	1	<i>Ostrea edulis</i>	1	0.02
1210	1208	ditch	9	1	<i>Ostrea edulis</i>	2	0.01
1210	1208	ditch	9	1	<i>Ostrea edulis</i>	1	0
1210	1208	ditch	9	1	<i>Ostrea edulis</i>	2	0
1211	1208	ditch	9	1	<i>Ostrea edulis</i>	1	0.02
1218	1208	ditch	9	1	<i>Ostrea edulis</i>	1	0.04

Context	Cut	Feature	Trench	Period	Species	No of shells or frags	Total Weight (kg)
1225	1208	ditch	9	1	<i>Ostrea edulis</i>	1	0.01
1225	1208	ditch	9	1	<i>Ostrea edulis</i>	1	0.04
1227	1226	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1227	1226	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1227	1226	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1227	1226	pit	9	1	<i>Ostrea edulis</i>	1	0.01
1227	1226	pit	9	1	<i>Ostrea edulis</i>	1	0
1227	1226	pit	9	1	<i>Ostrea edulis</i>	1	0.03
1227	1226	pit	9	1	<i>Ostrea edulis</i>	1	0.01
1227	1226	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1227	1226	pit	9	1	<i>Ostrea edulis</i>	1	0.01
1227	1226	pit	9	1	<i>Ostrea edulis</i>	1	0
1228	1226	pit	9	1	<i>Ostrea edulis</i>	2	0.03
1228	1226	pit	9	1	<i>Ostrea edulis</i>	1	0.01
1228	1226	pit	9	1	<i>Ostrea edulis</i>	1	0.07
1228	1226	pit	9	1	<i>Ostrea edulis</i>	1	0.02
1228	1226	pit	9	1	<i>Ostrea edulis</i>	1	0.01
1259		Levelling	10	4.2	<i>Ostrea edulis</i>	3	0.02
1259		Levelling	10	4.2	<i>Ostrea edulis</i>	1	0.01
1259		Levelling	10	4.2	<i>Ostrea edulis</i>	1	0.01
1260		Backfill	10	4.1	<i>Ostrea edulis</i>	1	0.01
1276		surface (external)	10	4.1	<i>Ostrea edulis</i>	1	0.01
1280	1286	levelling	10	4.2	<i>Ostrea edulis</i>	1	0.01
1288		Backfill	10	4.1	<i>Ostrea edulis</i>	1	0.02
1288		Backfill	10	4.1	<i>Buccinum undatum</i>	2	0.01
1288		Backfill	10	4.1	<i>Buccinum undatum</i>	1	0
1296		buried soil	10	4.1	<i>Ostrea edulis</i>	1	0.01
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	2	0.05
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	2	0.02
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.04
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	3	0.04
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	3	0.04
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	3	0.03
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.03
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.02
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.02
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.01
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	2	0.02
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.05
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.04
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.04
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.03

Context	Cut	Feature	Trench	Period	Species	No of shells or frags	Total Weight (kg)
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.03
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.03
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.03
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.02
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.02
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.03
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.03
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.02
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	8	0.01
1304	1303	pit	10	4.2	<i>Ostrea edulis</i>	1	0.01
1319	1318	pit	10	4.2	<i>Ostrea edulis</i>	1	0.02
1360		Levelling	10	4.1	<i>Ostrea edulis</i>	1	0.01
1409		buried soil	11	3	<i>Ostrea edulis</i>	1	0.03
1409		buried soil	11	3	<i>Ostrea edulis</i>	1	0.03
1409		buried soil	11	3	<i>Ostrea edulis</i>	1	0.01
1409		buried soil	11	3	<i>Ostrea edulis</i>	1	0.01
1409		buried soil	11	3	<i>Ostrea edulis</i>	1	0.01
1409		buried soil	11	3	<i>Ostrea edulis</i>	1	0.01
1409		buried soil	11	3	<i>Ostrea edulis</i>	1	0.01
1409		buried soil	11	3	<i>Ostrea edulis</i>	1	0.01
1409		buried soil	11	3	<i>Ostrea edulis</i>	1	0.01
1409		buried soil	11	3	<i>Ostrea edulis</i>	1	0.03
1409		buried soil	11	3	<i>Ostrea edulis</i>	1	0.03
1409		buried soil	11	3	<i>Ostrea edulis</i>	1	0.02
1409		buried soil	11	3	<i>Ostrea edulis</i>	1	0.02
1409		buried soil	11	3	<i>Ostrea edulis</i>	1	0.01
1409		buried soil	11	3	<i>Ostrea edulis</i>	1	0.01
1409		buried soil	11	3	<i>Ostrea edulis</i>	1	0
1409		buried soil	11	3	<i>Ostrea edulis</i>	1	0
1436	1435	Drain	11	4.1	<i>Ostrea edulis</i>	2	0
1440		wall	11	4.1	<i>Ostrea edulis</i>	2	0.01
1440		wall	11	4.1	<i>Ostrea edulis</i>	1	0.01
1440		wall	11	4.1	<i>Ostrea edulis</i>	1	0.01
1440		wall	11	4.1	<i>Ostrea edulis</i>	1	0.01
1440		wall	11	4.1	<i>Ostrea edulis</i>	1	0
1440		wall	11	4.1	<i>Ostrea edulis</i>	1	0
1440		wall	11	4.1	<i>Ostrea edulis</i>	1	0.02
1440		wall	11	4.1	<i>Ostrea edulis</i>	1	0.01
1440		wall	11	4.1	<i>Ostrea edulis</i>	1	0.01
1440		wall	11	4.1	<i>Ostrea edulis</i>	1	0.01
1440		wall	11	4.1	<i>Ostrea edulis</i>	1	0.01
1440		wall	11	4.1	<i>Ostrea edulis</i>	1	0.01
1440		wall	11	4.1	<i>Ostrea edulis</i>	1	0.01
1440		wall	11	4.1	<i>Ostrea edulis</i>	1	0.01

Context	Cut	Feature	Trench	Period	Species	No of shells or frags	Total Weight (kg)
1440		wall	11	4.1	<i>Ostrea edulis</i>	1	0
1440		wall	11	4.1	<i>Ostrea edulis</i>	2	0
1440		wall	11	4.1	<i>Ostrea edulis</i>	1	0
1448		structure	11	4.2	<i>Ostrea edulis</i>	1	0.01
1448		structure	11	4.2	<i>Ostrea edulis</i>	1	0
1448		structure	11	4.2	<i>Ostrea edulis</i>	1	0.02
1449		buried soil	11	3	<i>Ostrea edulis</i>	1	0.01
1449		buried soil	11	3	<i>Ostrea edulis</i>	1	0.02
1449		buried soil	11	3	<i>Ostrea edulis</i>	1	0.01
1449		buried soil	11	3	<i>Ostrea edulis</i>	1	0.01
1449		buried soil	11	3	<i>Ostrea edulis</i>	1	0.01
1449		buried soil	11	3	<i>Ostrea edulis</i>	1	0
1451		Backfill	11	4.2	<i>Ostrea edulis</i>	1	0.01
1451		Backfill	11	4.2	<i>Ostrea edulis</i>	1	0.01
1451		Backfill	11	4.2	<i>Ostrea edulis</i>	1	0.01
2011				0	<i>Mytilus edulis</i>	2	0
2011				0	<i>Mytilus edulis</i>	1	0
2011				0	<i>Mytilus edulis</i>	1	0
2011				0	<i>Ostrea edulis</i>	1	0
99999		unstrat		0	<i>Ostrea edulis</i>	1	0.01

Table 78: Summary catalogue of marine mollusca

C.5 Environmental samples

By Martha Craven

Introduction

- C.5.1 A total of 64 bulk samples were taken from various phases of evaluation and excavation at the site.
- C.5.2 Two phases of evaluations were conducted between 2016 (Webster 2016) and 2017 (Fairbairn 2017). Four bulk samples were taken the Phase 1 evaluation and were found to contain frequent carbonised material. Culinary plant remains were particularly abundant and include oats (*Avena sp.*), wheat (*Triticum sp.*), rye (*Secale cereale*), barley (*Hordeum vulgare*), peas (cf. *Pisum sativum*) and broad beans (cf. *Vicia faba*). Seventeen bulk samples were taken from the Phase 2 evaluation and preservation of plant remains were predominantly by waterlogging in addition to a smaller assemblage of carbonised remains. Of note, was the recovery of hemp (*Cannabis sativa*) seeds within pond **312** (Trench 3) and pit **606** (Trench 6); a plant which may have been cultivated for fibre production. A possible orchard was identified in Trench 5 due to the recovery of plum (*Prunus domestica*) and cherry (*P. cerasus*) fruit stones. Cereal remains recovered were identical to that of the previous phase of evaluation. Samples from Trench 7 contain frequent vitrified charcoal; it is possible that this is related to fuel use within the maltings situated there.

- C.5.3 Forty-three samples were taken during most recent phase of excavation from a variety of Late Anglo-Saxon features situated within Area 9. The purpose of this report is to combine the results of each of the phases of excavation.

Methodology

- C.5.4 The samples were processed by tank flotation using modified Sīraf-type equipment for the recovery of preserved plant remains, dating evidence and any other artefactual evidence that might be present. The floating component (flot) of the samples was collected in a 0.3mm nylon mesh and the residue was washed through 10mm, 5mm, 2mm and a 0.5mm sieve. A magnet was dragged through each residue fraction for the recovery of magnetic residues prior to sorting for artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds.
- C.5.5 The waterlogged samples had a portion examined whilst still wet and were then allowed to dry for subsequent assessment and quantification. The dried flots were subsequently sorted using a binocular microscope at magnifications up to x 60 and an abbreviated list of the recorded remains are presented in Table 79-81.
- C.5.6 Identification of plant remains is with reference to the Digital Seed Atlas of the Netherlands (Cappers et al. 2006) and the authors' own reference collection. Nomenclature is according to Zohary and Hopf (2000) for cereals and Stace (2010) for other plants. Plant remains have been identified to species where possible. The identification of cereals has been based on the characteristic morphology of the grains and chaff as described by Jacomet (2006).

Quantification

- C.5.7 For the purpose of this assessment, items such as seeds and cereal grains have been scanned and recorded qualitatively according to the following categories:

= 1-5, ## = 6-25, ### = 26-100, #### = 100+ specimens

- C.5.8 Items that cannot be easily quantified such as snails have been scored for abundance

+ = rare, ++ = moderate, +++ = abundant

Key to tables:

U=untransformed, w/l= waterlogged

Results

- C.5.9 The material recovered from these excavations consist of both carbonised and waterlogged plant remains. Untransformed material is also present at the site and may or may not be contemporary to the feature from which it was sampled. Untransformed seeds are usually seeds with a tough outer coating resistant to decay. Most of the samples are either devoid of or contain only occasional relatively well-preserved snails.

Test Pit 2

- C.5.10 Preservation of plant remains is by carbonisation with no evidence of waterlogging although there are untransformed seeds of elderberry (*Sambucus nigra*) that are likely to be contemporary with the deposits.
- C.5.11 The lowest layer sampled (211) is comprised of fine silt and does not contain any preserved plant remains other than occasional charcoal flecks. There is no evidence of ostracods or charophytes that could have suggested that this is a flood deposit. The three upper layers contain carbonised plant remains with each layer differing slightly in composition. Layer 210 is charcoal-rich and contains frequent carbonised cereal grains that include oats, wheat, rye and barley. There are also frequent carbonised legumes that appear to be pea and beans. A single seed of cleaver (*Galium aparine*) was also noted.
- C.5.12 Layer 208 contains a similar carbonised assemblage although the charcoal content is low. Vetches (*Vicia/Lathyrus* sp.) are included, and beans are absent. This assemblage also contains untransformed elderberry seeds. Layer 207 is the latest layer within the test pit to be sampled. It lies above layer 208 and contains several untransformed elderberry seeds. The carbonised weed assemblage is more diverse in this layer and includes scentless mayweed (*Tripleurospermum inodorum*), self-heal (*Prunella vulgaris*), ribwort plantain (*Plantago lanceolata*) which are all weeds that could have been growing amongst the cereals, but these plants have a diverse habitat and could equally be found growing in pasture. There are also several carbonised seeds of sedges (*Carex* spp.) which is a plant that grows in wet soils. It is possible that this assemblage represents the burning of hay that had originated from a damp pasture. The carbonised cereal grains are less frequent in layer 207 and wheat grains predominate.

Sample No.	Context No.	Volume Processed (L)	Flot Volume (ml)	Cereals	Chaff	Legumes	Weed Seeds	Charcoal <2mm	Charcoal > 2mm
1	207	32	5	###	#	0	##/###U	+++	+
2	208	30	15	###	0	##	##/###U	+++	+++
3	210	33	40	###	0	##	#	+++	+++
4	211	13	60	0	0	0	0	+++	0

Table 79: Environmental samples from Test Pit 2

Evaluation Trenches 3 to 7

- C.5.13 Preservation of plant remains is predominantly by waterlogging in addition to a smaller assemblage of carbonised remains that is predominantly comprised of cereal grains. All four of the main cereal types are represented; rye, barley, wheat and oats are found in samples from Trenches 4 and 7. Carbonised weed seeds are rare with only a single seed of stinking mayweed (*Anthemis cotula*) and a corn marigold (*Chrysanthemum segetum*) was noted.
- C.5.14 Waterlogged seeds are frequent and include seeds of plants that are likely to have been growing in the surrounding area such as nettles (*Urtica dioica* and *U. urens*), buttercups (*Ranunculus* sp.), elderberry, bramble (*Rubus* sp.), goosefoots (*Chenopodium* sp.), cinquefoils (*Potentilla* sp.), docks (*Rumex* sp.), dead-nettles

(*Lamium* sp.) and thistles (*Carduus/Cirsium* sp.). Plants that indicate that the soils were damp/wet include henbane (*Hyoscyamus niger*), hemlock (*Conium maculatum*) and wetland plants such as sedges, rushes (*Juncus* sp.) and an obligate aquatic, water starwort (*Callitriche* sp.).

C.5.15 Possible economic plants include hemp recovered from Trenches 3 and 6 and probable food plants in Trenches 5 and 7 such as plums (*Prunus domestica*), cherries (*P. cerasus*), beets/spinach (*Beta vulgaris*), brassicas (*Brassica* sp.), which include turnips, swede and cabbages, and tentative identification of a seed of the onion family (*Allium* sp.), opium poppy (*Papaver somniferum*) and coriander (*Corriandrum sativum*) could indicate culinary flavourings.

C.5.16 Insects are well preserved in some of the waterlogged samples, particularly in Sample 15, fill 520 of brook 507 (trench 5) which contains several fragments of insects with visible hairs, fly pupae and a possible cocoon. There is a hint of preservation by mineralisation, possibly indicating cess deposits, in Trenches 4 and 6.

C.5.17 Molluscs are only preserved in Trench 5 but have good preservation and moderate density and diversity. Other environmental indicators include egg cases of water-fleas (*Daphnia* sp.), ostracods and algae (Charophytes).

Sample No.	Context No.	Feature No.	Feature Type	Area/trench No.	Volume processed (l)	Flot Volume (ml)	Cereals	Charred seed	Waterlogged seeds	insects	Snail Shells	Charcoal
2	302		Layer	3	9	1	0	0	#	0	0	++
14	314	312	Layer	3	8	5	0	0	##	+w	0	0
10	401		Brook	4	8+7	20	##	#	0	+m	0	+++
11	402		Brook	4	9	15	###	#	0	+m	0	++
1	506		Brook	5	9	30	0	0	##	++w	++	0
15	520	507	Brook	5	8+8	100	0	0	###	+++w	++	0
20	603		Pit	6	9	20	0	0	#	+w	0	+
19	605a	606	Pit	6	9	110	0	0	##	0	0	+
17	605b	606	Pit	6	8	15	0	0	#	+m,w	0	0
16	605c	606	Pit	6	10	60	#	0	###	0	0	0
18	608b	606	Pit	6	9	20	0	0	#	+w	0	+
3	723		Pit	7	9+10	25	#	0	0	0	0	+v
28	731		Pit	7	9	10	0	0	#	0	0	+++v
24	750		Pit	7	9	5	0	0	#	0	0	0
27	757		Ditch	7	9	10	#	0	###	0	0	+
25	758		Layer	7	2	2	##	#	#	0	0	+
26	758		Layer	7	8	15	#	0	##	0	0	++

Table 80: Environmental samples from Trenches 3 to 7

Area 9: Period 1 - Late Anglo-Saxon

C.5.18 Carbonised material recovered from the samples is largely composed of cereal grains. Cereal grains were present in small quantities across many of the features within Area 9. These grains consist primarily of barley (*Hordeum vulgare*), oat (*Avena* sp.), rye (*Secale cereale*) free-threshing wheat (*Triticum aestivum/ turgidum*) and grains that are too poorly preserved to identify. A possible spelt (*Triticum spelta*) grain was noted

in Sample 511, fill 1063 of ditch **1061**, although this identification is tentative. It should be noted that carbonisation and post-depositional processes can often significantly distort the morphology of plant remains leading to issues with identification. Chaff was largely absent from the samples except for a single cultivated oat (*Avena sativa*) floret within Sample 547, fill 1217 of ditch **1208**. Other carbonised remains include a single small (<2mm) legume (Fabaceae) in Sample 506, fill 1055 ditch **1040**. Carbonised weed seeds are rare and include stinking chamomile (*Anthemis cotula*) and large grasses (Poaceae). Most samples are either devoid of or contain small quantities of charcoal; with the exception of pit **1095** and ditch **1182**.

- C.5.19 Abundant waterlogged material was recovered from a number of deposits within pits and ditches at the site. These features are in relative proximity to one another and are similar in terms of their archaeobotanical assemblages. Frequent seeds of tree/shrub taxa are present including elder (*Sambucus nigra*), brambles (*Rubus sp.*), hazelnut (*Corylus avellana*) shell, sloes/ dwarf cherries (*Prunus spinosa/cerasus*) and occasional apple/pear (*Malus/Pyrus sp.*). Common arable weeds were also noted including cornflower (*Centaurea cyanus*), sheep's sorrel (*Rumex acetosella*) and corncockles (*Agrostemma githago*). Other taxa present include those of wetland/damp environments, such as sedges (*Carex sp.*), and cultivated/wasteland ground, such as small nettle (*Urtica urens*) and goosefoots (Chenopodiaceae). Waterlogged fly pupae were also noted in a number of the deposits.
- C.5.20 The samples produced a range of artefactual remains primarily consisting of frequent fish bones, oysters, mammal bones and pottery. Occasional fragments of metal-working debris, ceramic building material bird and amphibian bone were also noted. A possible human tooth was found within pit **1103**.

Sample No.	Context No.	Cut no.	Feature Type	Flot Volume (ml)	Cereals	Chaff	Legumes	Weed Seeds	Wetland/Aquatic Plants	Tree/shrub	Snails	Insect Remains	Charcoal Volume (ml)	Pottery	Small mammal bones	Large mammal bones	Human skeletal remains	Fish bones	Bird bones	Amphibian bones	Mussels	Oysters	CBM	Slag	
506	1055	1040	ditch	45	#	0	0	#	0	#U	0	0	16	#	0	#	0	##	0	0	0	#	0	0	
507	1041	1040	ditch	50	#	0	#	#w/l	0	##w/l	0	0	2	0	0	#	0	#	0	0	#	#	0	#	
508	1057	1056	ditch	10	0	0	0	0	0	0	0	0	5	#	0	##	0	###	0	0	0	#	0	0	
509	1058	1056	ditch	5	0	0	0	0	0	0	0	0	12	#	0	#	0	###	0	0	#	#	0	0	
510	1060	1059	pit	10	0	0	0	0	0	0	0	0	2	#	0	#	0	#	0	0	0	0	0	0	
511	1063	1061	ditch	10	#	0	0	##w/l	#w/l	##w/l	0	0	2	#	0	#	0	#	#	0	0	0	0	0	
512	1063	1061	ditch	20	0	0	0	###w/l	0	#w/l	0	0	0	#	0	0	0	#	0	0	0	#	0	0	
513	1062	1061	ditch	30	0	0	0	###w/l/#	#w/l	##w/l	0	#w/l	0	0	0	#	0	0	0	0	0	0	#	0	0
514	1077	1076	pit	20	#	0	0	0	0	0	0	0	2	#	0	##	0	###	#	0	0	0	0	0	
515	1081	1080	pit	2	0	0	0	0	0	0	0	0	21	#	0	##	0	##	0	0	0	#	0	0	
516	1083	1082	pit	20	0	0	0	0	0	0	0	0	<1	#	0	#	0	##	0	0	0	#	0	0	
517	1085	1084	pit	15	0	0	0	0	0	0	0	0	30	0	0	#	0	0	0	0	0	#	0	0	
518	1086	1084	pit	5	0	0	0	0	0	0	0	0	2	0	0	#	0	0	0	0	###	###	#	0	
519	1087	1084	pit	25	0	0	0	0	0	0	0	0	15	#	0	##	0	#	#	#	0	#	0	0	
520	1093	1091	ditch	20	0	0	0	###w/l	#w/l	+++w/l	0	0	0	0	0	#	0	0	0	0	0	0	#	0	0
521	1096	1095	pit	50	0	0	0	0	0	0	0	0	60	#	0	#	0	#	0	0	0	#	0	0	
522	1098	1097	pit	20	0	0	0	0	0	###w/l	0	0	<1	0	0	#	0	###	0	0	0	0	0	0	
523	1100	1099	pit	50	0	0	0	0	0	##w/l	0	0	20	0	#	#	0	#	0	0	0	#	0	0	

Sample No.	Context No.	Cut no.	Feature Type	Flot Volume (ml)	Cereals	Chaff	Legumes	Weed Seeds	Wetland/Aquatic Plants	Tree/shrub	Snails	Insect Remains	Charcoal Volume (ml)	Pottery	Small mammal bones	Large mammal bones	Human skeletal remains	Fish bones	Bird bones	Amphibian bones	Mussels	Oysters	CBM	Slag
524	1102	1101	gully	15	0	0	0	0	0	###w/l	0	0	22	#	0	##	0	##	0	0	0	#	0	0
525	1104	1103	pit	30	0	0	0	##w/l	0	###w/l	0	0	20	#	0	#	#?	##	#	0	0	#	0	0
526	1106	1105	ditch	60	#	0	0	0	0	0	0	0	12	#	#	##	0	##	0	0	#	#	#	0
527	1108	1107	ditch	15	#	0	0	0	0	###w/l	0	0	12	0	0	#	0	0	#	#	0	#		0
528	1110	1109	pit	10	0	0	0	0	0	0	0	0	3	#	0	#	0	0	0	0	#	0	0	0
529	1112	1111	posthole	2	0	0	0	0	0	0	0	0	0	0	0	#	0	#	0	0	0	0	0	0
530	1114	1113	posthole	1	0	0	0	0	0	0	0	0	<1	0	0	#	0	0	0	0	0	0	0	0
532	1118	1117	pit	30	0	0	0	#	0	0	0	0	3	#	0	#	0	##	0	#	0	#	0	0
535	1146	-	layer	5	0	0	0	0	0	0	0	0	6	#	0	#	0	##	0	0	0	0	0	0
537	1159	1158	ditch	50	#	0	0	0	0	0	0	0	12	#	0	#	0	#	0	#	0	#	0	#
538	1161	1160	ditch	2	0	0	0	0	0	#w	0	0	6	#	0	#	0	##	0	0	0	0	0	0
539	1183	1182	ditch	90	#	0	0	#w/l	0	0	0	0	85	0	0	#	0	0	#	0	0	#	0	0
540	1185	1184	ditch	2	0	0	0	0	0	#U	0	0	21	0	0	#	0	##	0	0	#	#	0	#
541	1177	1176	pit	30	0	0	0	##w/l	0	#w/l	0	0	6	#	0	#	0	0	0	#	0	#	0	0
542	1189	1188	posthole	50	0	0	0	0	0	0	0	0	7	#	0	#	0	#	0	0	0	#	0	0
543	1201	1200	pit	1	0	0	0	#w/l	0	#w/l	0	0	<1	#	0	#	0	0	0	0	0	#	0	0
544	1209	1208	pit?	30	#	0	0	#	0	#w/l	0	0	11	#	0	#	0	##	0	0	#	#	0	0
545	1210	1208	pit?	65	#	0	0	##w/l	#	###w/l	+	+	11	#	0	#	0	#	0	0	#	#	0	0
546	1211	1208	Pit?	100	0	0	0	##w/l	0	###w/l	+	0	0	#	0	#	0	#	#	0	#	0	0	0

Sample No.	Context No.	Cut no.	Feature Type	Flot Volume (ml)	Cereals	Chaff	Legumes	Weed Seeds	Wetland/Aquatic Plants	Tree/shrub	Snails	Insect Remains	Charcoal Volume (ml)	Pottery	Small mammal bones	Large mammal bones	Human skeletal remains	Fish bones	Bird bones	Amphibian bones	Mussels	Oysters	CBM	Slag
547	1217	1208	ditch	45	#	#	0	###w/l	0	###w/l	+	0	10	#	0	#	0	#	0	0	#	0	0	0
548	1218	1208	ditch	5	0	0	0	#w/l	0	###w/l	0	+	0	0	0		0	0	0	0	0	0	0	0
549	1181	1180	pit	35	#	0	0	0	0	##w/l	0	0	<1	0	0	0	0	0	0	0	0	0	0	0
550	1225	1208	ditch	100	0	0	0	###w/l	#w/l	###w/l	0	++	0	0	0	0	0	0	0	0	0	0	0	0
551	1227	1226	pit	20	#	0	0	0	0	#w/l	+	0	1	0	0	0	0	0	0	0	0	0	0	0
552	1228	1226	pit	20	0	0	0	#w/l	0	#w/l	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 81: Area 9 (Period 1 – Late Anglo-Saxon) Environmental samples

Discussion

- C.5.21 Within Area 9, the scarcity of cereal grains and other culinary-related plant remains suggests that this area was not a focus of domestic activity during the Late Anglo-Saxon period. It is likely that the occasional grains found within the features are a background scatter of refuse from the surrounding area. The cereal grains recovered are typical of the crops favoured within the Anglo-Saxon period: free-threshing wheat, barley, rye and oats (Banham and Faith 2014, 35). The presence of a possible spelt grain within ditch **1063** is unusual as hulled wheats (spelt and emmer) were not typically cultivated in this period. No evidence of other possible cultivated species were recovered from the excavation but hemp seeds were recovered from a contemporary Anglo-Saxon pit **606** during the evaluation phase. It is known from a number of excavations within Anglo-Saxon Ipswich that peas, beans and flax (*Linum usitatissimum*) were also being grown (Murphy 2001, 83). The recovery of a carbonised stinking chamomile seed within ditch **1061** is suggestive of the ploughing of heavy clay soils. Peter Murphy has argued that previous identifications of stinking chamomile in other contemporary Ipswich excavations is indicative of cereals having been imported from areas to the north; where boulder clay is prevalent (Murphy 2001, 18). He believes that the town of Ipswich would have imported grain from several neighbouring farmsteads.
- C.5.22 The abundant waterlogged material present in a number of features has helped to characterise the general environment of the site and its surroundings. It is likely that these waterlogged remains are reflective of taxa growing within the nearby vicinity that have unintentionally been incorporated into these features. The majority of the material is composed of shrub and tree species such as hazelnuts, blackberries and sloes. It is likely that the town's populous may have gathered such abundant wild resources in order to supplement their diet. The recovery of apple/pear seeds within Late Anglo-Saxon ditch **1208** may even suggest that this area was utilised as an orchard of sorts although this is very tentative. Charter records and place-name evidence attests to the presence of orchards during this period within England; usually associated with ecclesiastical organisations (Hooke 1990, 77). The geology of the Ipswich area is largely comprised of acidic sandy soils and this is reflected in the recovery of associated segetal weed seeds such as sheep's sorrel and wild radish. The presence of wetland plant material, such as sedges and rushes, within many of the samples is not surprising given the proximity of the town to the Orwell Estuary. It is possible that the inhabitants may have utilised the rushes and sedges growing in these areas for flooring and thatching material; a common practice in this period (Maslin 2017, p.241).

Retention, dispersal and display

- C.5.23 The samples have been fully analysed and no further work is required. The analysed samples will be retained within the site archive. Any remaining unprocessed soil can be discarded.

C.6 Radiocarbon dating certificates



RADIOCARBON DATING CERTIFICATE

07 April 2022

Laboratory Code	SUERC-103221 (GU59965)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambridgeshire CB23 8SQ
Site Reference	IPS865/XSFLBS17
Context Reference	1206
Material	Bone (skull) : Human
$\delta^{13}\text{C}$ relative to VPDB	-19.2 ‰
$\delta^{15}\text{N}$ relative to air	11.1 ‰
C/N ratio (Molar)	3.2
Radiocarbon Age BP	1155 \pm 28

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.

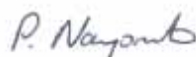
Detailed descriptions of the methods employed by the SUERC Radiocarbon Laboratory can be found in Dunbar et al. (2016) *Radiocarbon* 58(1) pp.9-23.

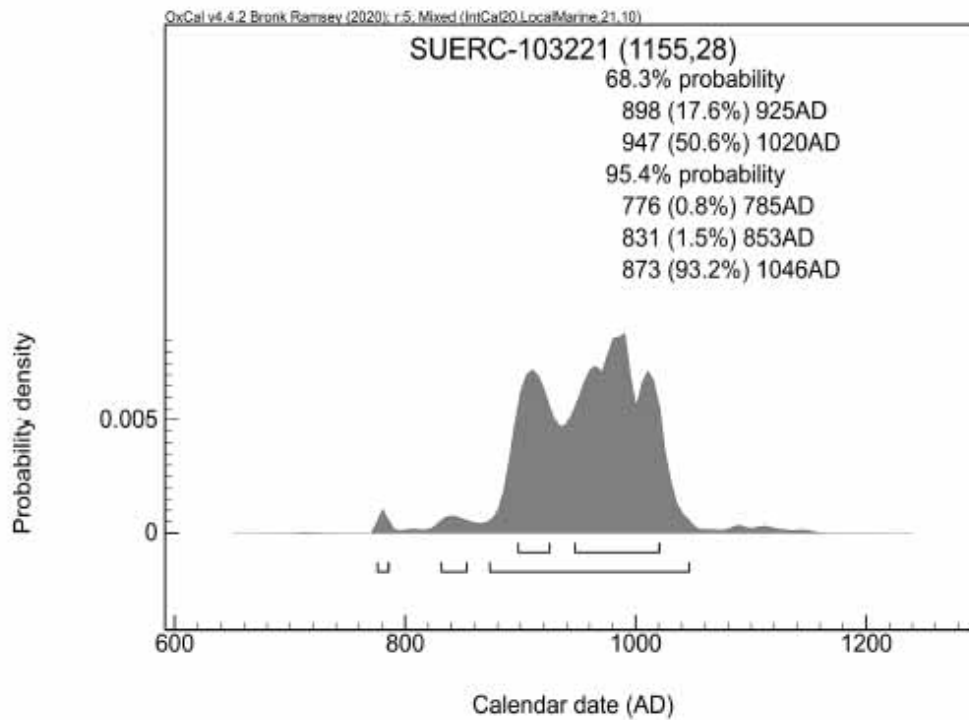
For any queries relating to this certificate, the laboratory can be contacted at suerc-c14lab@glasgow.ac.uk.

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 a mix of the IntCal20† and Marine20‡ calibration curves.

Human bone collagen with a $\delta^{13}\text{C}$ value above -20‰ , accompanied by a raised $\delta^{15}\text{N}$ value, is taken to indicate a marine component in the diet. The percentage contribution of this marine component is calculated using end-members of -21.0‰ (fully terrestrial) and -12.5‰ (fully marine) with an uncertainty of 10% applied.

The $\delta^{13}\text{C}$ value of -19.2‰ gives a 21% marine contribution ($\pm 10\%$).

A regional marine offset (ΔR) of -150 ± 52 years has been used in the calibration.

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

‡ Heaton et al. (2020) *Radiocarbon* 62(4) pp.779-820



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Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF, Scotland, UK
Director: Professor F M Stuart Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc



RADIOCARBON DATING CERTIFICATE
30 May 2022

Laboratory Code SUERC-104114 (GU60350)
Submitter Rachel Fosberry
Oxford Archaeology East
15 Trafalgar Way
Bar Hill
Cambridgeshire
CB23 8SQ
Site Reference IPS865
Context Reference 1218
Sample Reference 548
Material Waterlogged plant remains : *Corylus avellana*
 $\delta^{13}\text{C}$ relative to VPDB -24.8 ‰
Radiocarbon Age BP 1048 \pm 26

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-cl4lab@glasgow.ac.uk.

Conventional age and calibration age ranges calculated by : E Dunbar

Checked and signed off by : P. Nayantub

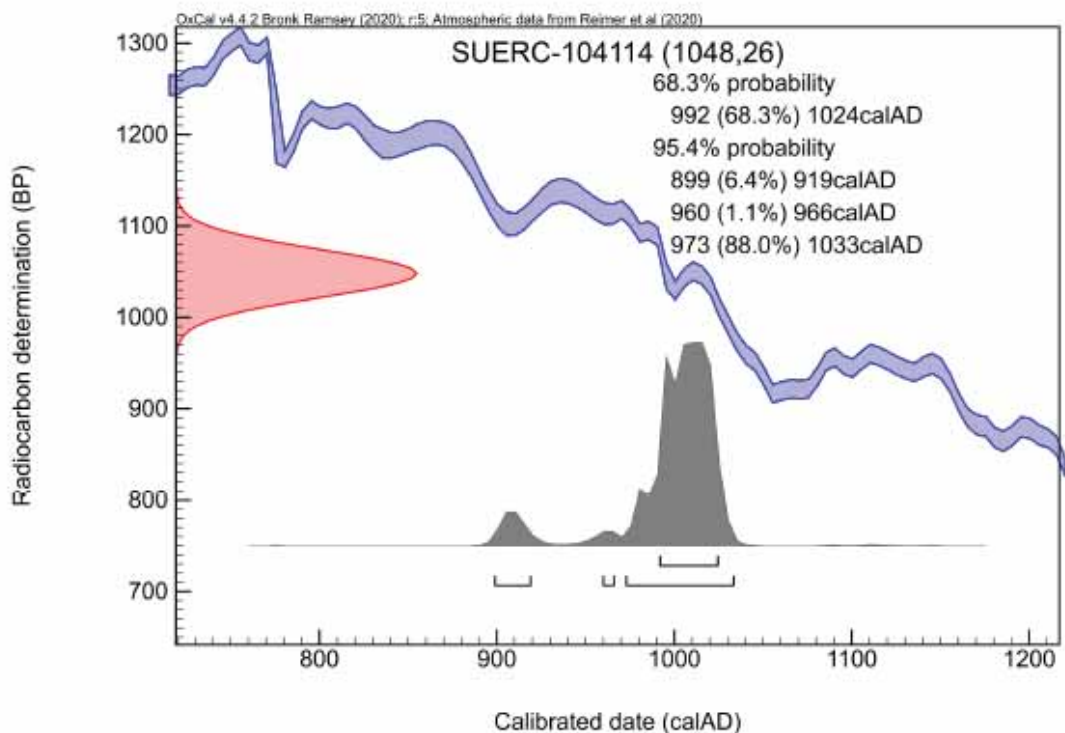


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registered in Scotland, with registration number SC005336



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

APPENDIX D BIBLIOGRAPHY

Adams, D., 2018, *Archaeological Excavation at Land Between Rose Lane and Mountergate, Norwich, Norfolk, NR1 1DH – Excavation Report*, NPS Archaeology, Rep. No. 2018-1117 (unpublished)

Adams, D. and Clarke, G., forthcoming, 'Chapter 4. Anglo-Scandinavian Settlement (10th to 11th century)' in *Aspects of 7th- to 11th-century Norwich*, E. Anglian Archaeol.

Allen, D., 2000, *Ipswich Borough Archives 1255–1835: A Catalogue*. Suffolk County Council and Suffolk Records Society Vol. 43. The Boydell Press, Woodbridge

Allen, D., 2001, The Public Water Supply of Ipswich before the Municipal Corporations Act of 1835. *Proceedings of the Suffolk Institute of Archaeology and History* XL (1), 31–54

Amor, N.R., 2011, *Late Medieval Ipswich. Trade and Industry*. The Boydell Press, Woodbridge

Andersson, E., 2003, *Tools for Textile Production from Birka and Hedeby*. Excavations in the Black Earth 1990 - 1995, Birka Studies 8, Stockholm

Anderson, S., 2004, 'The pottery', in Wallis, H., *Excavations at Mill Lane, Thetford*, E. Anglian Archaeol. 108, 67-86. Norfolk Archaeological Unit, NMS

Anderson, S., 2020, *Suffolk Medieval Pottery Fabric Series*, <https://www.suffolkmedpot.co.uk/>

Appleyard, H.M., 1978, *Guide to the Identification of Animal Fibres*. Leeds: WIRA

Baker, P. and Worley, F., 2014, *Animal Bones and Archaeology – Guidelines for Best Practice* (Swindon: English Heritage)

Bamford, H., 1985, *Briar Hill: Excavation 1974–1978*. Northampton Development Corporation. Northampton

Banham, D. and Faith, R., 2014, *Anglo-Saxon Farms and Farming Oxford*: Oxford University Press

Barrett, J., Locker, A.M. and Roberts, C. M., 2004, 'Dark Age Economics' revisited. The English fish bone evidence AD 600-1600, *Antiquity* 78, 618-36

Bartosiewicz, L., 2013, *Shuffling Nags, Lame Ducks – The Archaeology of Animal Disease* (Oxford: Oxbow)

Bayley, J, Dungworth, D, & Paynter, S., 2006, *Archaeometallurgy*. Centre for Archaeology Guidelines; English Heritage

Bayley, J, Dungworth, D, & Paynter, S., 2015, *Archaeometallurgy Guidelines for Best Practice*. Historic England

Blair, J., 2018, *Building Anglo-Saxon England* (Princeton and Oxford, Princeton University Press)

Boulter, S., 2001, Neptune Quay, Ipswich (IAS 6601), Record of an Archaeological Excavation. SCCASFPT Report No. 2000/44, Volume I, Text & Figures

Breen, A., 2020, 'Chapter 2. The Documentary Evidence', in Brown, R. *et al.*, *Excavations at Stoke Quay, Ipswich: Southern Gipeswic And The Parish Of St Augustine*, East Anglian Archaeology 172

Breen, G., 2003, Board Games from Medieval Cork in Context, *Journal of the Cork Historical and Archaeological Society* 108, 41-50

Brickley, M. and McKinley, J.I., 2004, *Guidelines to the standards for recording Human Remains*, IFA Paper 17 (Reading: IFA/BABAO)

Broadley, R., 2021, 'Glass vessels from the early medieval emporium at Ipswich', in Willemsen, A. and Kik, H. *Dorestad and its Networks: Communities, Contact and Conflict in Early Medieval Europe* Broadley, R. 2021. 'Glass vessels from the early medieval emporium at Ipswich', in Willemsen, A. and Kik, H. *Dorestad and its Networks: Communities, Contact and Conflict in Early Medieval Europe*

Brothwell, D.R., 1981, *Digging up Bones; the excavation, treatment and study of human skeletal remains*, British Museum (Natural History) Oxford University Press

Brown, J., 1983, *Steeped in Tradition, The Malting Industry in England since the Railway Age*. Reading

Brown, R., Teague, S., Loe, L., Sudds, B. and Pospescu, E., 2020, *Excavations at Stoke Quay, Ipswich: Southern Gipeswic And The Parish Of St Augustine*, East Anglian Archaeology 172

Brunning, R., 2010, *Waterlogged Wood: Guidelines on the recording, sampling, conservation and curation of waterlogged wood*. London, English Heritage

Brunskill, R.W., 1990, *Brick Building in Britain*. Victor Gollancz Ltd, London

Buikstra, J.E. and Ubelaker, D.H. (eds.), 1994, *Standards for data collection from human skeletal remains*, Arkansas Archaeological Survey Research Series 44 Arkansas

Butler, C., 2005, *Prehistoric Flintwork*. Tempus. Stroud

Cappers, R.T.J., Bekker R.M., and Jans, J.E.A., 2006, *Digital Seed Atlas of the Netherlands Groningen Archaeological Studies 4*, Barkhuis Publishing, Eelde, The Netherlands. www.seedatlas.nl

Clark, C., 1998, *The British Malting Industry since 1830*. The Hambledon Press. London and Rio Grande

Clark, J. 1995, *The Medieval Horse and its Equipment, c.1150-1450* (London, Museum of London)

Connor, A., 2017a, Lower Brook Street, Ipswich. [Framework] Written Scheme of Investigation, dated 15th November 2017

Connor, A., 2017b, Lower Brook Street, Ipswich. Written Scheme of Investigation. Supplementary Method Statement: West Building footprint, dated 6th December 2017

Connor, A., 2018, Lower Brook Street, Ipswich. Written Scheme of Investigation. Supplementary Method Statement, dated 13th April 2018

Cotter, J.P., 2000, *Post-Roman Pottery from Excavations in Colchester, 1971-8*, Colchester Archaeol. Rep. 7. Colchester Archaeol. Trust

Coutts, C., 1991, *Pottery and the Emporia: Imported pottery in Middle Saxon England with particular reference to Ipswich*. Unpubl. PhD thesis, Univ. Sheffield

Cowie, R., Blckmore, L., Davis, A. Keily, J. and Rielly, K., 2012, *Lundenwic. Excavations in Middle Saxon London, 1987-2000*, MoLAS Monograph 63 (London, Museum of London)

Crabtree, P.J., 2021, *Provisioning Ipswich: Animal remains from the Saxon and Medieval town*, East Anglian Archaeol. 174

Crew, P. 1995. *Bloomery iron smelting slags and other residues*. Historical Metallurgy Society, Archaeology Datasheet No. 5

Crew, P., 2004, 'Perforated tiles from corn driers and malt kilns', *British Brick Soc. Information* 95, 4–12

Crummy, N., 1983, *The Roman Small Finds from Excavations in Colchester 1971–9*. Colchester Archaeological Reports Volume 2 (Colchester, Colchester Archaeological Trust)

Dallas, C., 1984, 'The pottery', in Rogerson, A. and Dallas, C., *Excavations in Thetford 1948-59 and 1973-80*, E. Anglian Archaeol. 22, 117-66. Norfolk Archaeological Unit, NMS

Davis, M. and Starley, D., 2012, *The care and curation of metallurgical samples*, Archaeology Datasheet 108, The Historical Metallurgy Society

Davis, S., 1992, *A Rapid Method For Recording Information About Mammal Bones From Archaeological Sites*, AML Report 71/92 (Swindon: English Heritage)

Drury, P., 1993, 'Ceramic building materials', in Margeson, S., *Norwich Households*, E. Anglian Archaeol. 58, 163–8. Norwich Survey, Norwich

Dungworth, D., 2012, *Introduction to post-excavation techniques for metalworking sites*, Archaeology Datasheet 104, The Historical Metallurgy Society

Egan, G. and Pritchard, F., 2002, *Dress Accessories 1150-1450* (London, Boydell Press)

Ellis, B., M., A., 2002, *Prick Spurs 700-1700*, The Finds research Group AD 700-1700, Datasheet 30

Evin, A., Cicchi, T., Escarguel, G., Owen, J., Larsen, G., Vidarsdottir, V.S. and Dobney, K., 2014, 'Using traditional biometric data to distinguish between west Palaeoartic wild boar and domestic pigs in the archaeological record: new methods and standards', *Journal of Archaeological Science*, 43, 1–8

Evison, V.I., 2009, 'Glass vessels', in Scull, C. *Early medieval (late 5th-early 8th centuries AD) cemeteries at Boss Hall and Buttermarket, Ipswich, Suffolk*. The Society for Medieval Archaeology Monograph 27, pp. 250-251

Evison, V., 2014, 'Glass vessels', in Tester, A., Anderson, S., Riddler, I. and Carr, R. *Staunch Meadow, Brandon, Suffolk: a high status Middle Saxon settlement on the fen edge*. East Anglian Archaeology No. 151, pp. 170-177

Fairbairn, J., 2017, Lower Brook Street, Ipswich. Archaeological Evaluation. OA East Report No.: 2154

Fernandez, M.P. and Snape, L., 2020, 'Marine Shell', in Brown, R., Teague, S., Loe, L., Sudds, B and Popescu, E. (eds.), *Excavations at Stoke Quay, Ipswich: Southern Gipeswic and the parish of St Augustine*, East Anglian Archaeol. 172, 391-2

Findell, M. and Kopár, L., 2017, 'Runes and Commemoration in Anglo-Saxon England.' *Fragments* 6, 110-137

Flowers, S.E., 2006, 'How to Do Things with Runes: A Semiotic Approach to Operative Communication.' In *Runes and their Secrets: Studies in runology*, ed. Marie Stoklund, Michael Lerche Nielsen, Bente Holmberg and Gillian Fellows-Jensen. Copenhagen: Museum Tusulanum Press, 65-81

Foard, G., 2009, *Guidance on Recording Lead Bullets from Early Modern Battlefields* (London, University College London)

Foch, J., 1966, *Metrische Untersuchungen an Metapodien einiger europäischer Rinderrassen* (unpublished dissertation, University of Munich, Germany)

Gailey, S., 2015, Archaeological Desk-Based Assessment: Land at Lower Brook Street, Ipswich, Suffolk, dated September 2015. CgMs Ref: 20314

Gardner, R., 2004, St Nicholas's Church, Cromwell Square, Ipswich (IPS 442). A Report on the Archaeological Evaluation, 2004. SCCAS Report No. 2004/4

Gawronski, J. (ed.), 2012, *Amsterdam Ceramics*. Uitgeverij Bas Lubberhuizen/Bureau Monumentum en Archeologie

Gill, D., 2004, Cranfield's Mill, College Street, Ipswich (IPS 446 (IAS 6405)). A Report on the Archaeological Evaluation, 2004. SCCAS Report No. 2004/29

Gravendeel, R., Van Neer, W., and Brinkhuisen, D., 2002, An identification key for dermal denticles of Rajidae from the North Sea. *International Journal of Osteoarchaeology* 12 issue 6, 420-441

Grigson, C., 1982, 'Sex and age determination of some bones and teeth of domestic cattle: a review of the literature', in Wilson, B., Grigson, C. and Payne, S. (eds.), *Ageing and Sexing Animal Bones from Archaeological Sites* (BAR British Series 109)

Habermehl, K.H., 1975, *Habermehl, Die Altersbestimmung bei Haus- und Labor-tieren* (Berlin/Hamburg)

Hall, R.A., 1994, *Book of Viking Age York*. English Heritage

Halstead, P., 1985, 'A study of mandibular teeth from Romano-British contexts at Maxey', in Pryor, F. and French, C. (eds.), *The Fenland Project No. 1: Archaeology and Environment in the Lower Welland Valley*, East Anglian Archaeology. 27, 214-9

Harcourt, J., 1974, 'The dog in prehistoric and early historic Britain', *Journal of Archaeological Science*, 1 (2), 151-75

Haslam, J. 'Glass vessels' in Margeson, S., 1993, *Norwich Households: The Medieval and Post-Medieval Finds from Norwich Survey Excavations 1971-1978*. East Anglian Archaeology Report No. 58, pp. 97-117

Healy, F., 1988, *The Anglo-Saxon Cemetery at Spong Hill, North Elmham. Part VI: Occupation in the seventh to second millennia BC*. East Anglian Archaeology 39

Heard, K., 2012, Eastern Triangle (Land Between Key Street & Star Lane), Ipswich (IPS 605 (IAS 5903)). Archaeological Post-excavation Assessment & Updated Project Design. SCCAS Report No. 2012/63

Heard, K., 2014, Western Triangle (former Cranfield's Mill garage), Star Lane/College Street, Ipswich (IPS 584 (IAS 5804)). Archaeological Post-excavation Assessment & Updated Project Design. SCCAS Report No. 2013/141

Higgins, D.A., 2017, *Guidelines for the Recovery and Processing of Clay Tobacco Pipes from Archaeological Projects*. Version 1.2. National Pipe Archive, University of Liverpool; Historic England

Hind, J. and Crummy, N., 1988, 'Clay Tobacco Pipes', in Crummy, N. *Colchester Archaeological Report 5: The post-Roman small finds from excavations in Colchester 1971-85*. Colchester Archaeological Trust, pp. 47-66

Hines, J.H., 2019, 'Practical Runic Literacy in the Late Anglo-Saxon Period: Inscriptions on Lead Sheet.' In *Anglo-Saxon Micro-Texts*, ed. Lenker, U. and Kornexl, L. Berlin, de Gruyter, 29-60

Holmes, M., 2017, *Southern England: A Review of Animal Remains from Saxon, Medieval and Post-Medieval Archaeological Sites* (Swindon: Historic England)

Hooke, D., 1990, A note on the evidence for vineyards and orchards in Anglo-Saxon England, *Journal of Wine Research*, 1:1, 77-80

Hunter, J.R. and Heyworth, M.P., 1998, *The Hamwic Glass*. CBA Research Report 116; Council for British Archaeology

Inizan, M-L., Reduron-Ballinger, M., Roche, H. and Tixier, J., 1999, *Technology and Typology of Knapped Stone* (Translated by J. Feblot-Augustines). Cercle de Recherches et d'Etudes Préhistoriques Tome 5. Nanterre

Jacomet, S., 2006, Identification of cereal remains from archaeological sites. (2nd edition, 2006) IPNA, Universität Basel / Published by the IPAS, Basel University

Jaques, D., Hall, A., Kenward, H., Rowland, S. & Carrott, J., 2002, Technical Report: Biological remains from a site at Carberry Hall Farm, East Riding of Yorkshire (site code: TSEP908), *Reports from the Environmental Archaeology Unit, York Report 2002/5, 22pp*

Jennings, S., 1981, *Eighteen Centuries of Pottery from Norwich*. EAA 13, Norwich Survey/NMS

Jones, A.K.G., 2004, Fish bones, unpublished report on the fish assemblages from Vernon Street, Stoke, Lower Brook Street and Turret Lane, Ipswich

Keily, J., 2012, Antler-Working Waste, in R. Cowie, L. Blackmore, A. Davis, J. Keily and K. Rielly, *Lundenwic: Excavations in Middle Saxon London, 1987-2000*, Museum of London Archaeology Monograph 63, London (Museum of London Archaeology Service), 165-168

Kluge-Pinsker, A., 1991, *Schachspiel und Trictrac. Zeugnisse mittelalterlicher Spielfreude aus salischer Zeit*, Romisch-Germanisches Zentralmuseum Monographien 30, Sigmaringen

- Knüsel, C.J. and Outram, A.K., 2004, 'Fragmentation: the zonation method applied to fragmented human remains from archaeological and forensic contexts.' *Environmental Archaeology: The Journal of Human Palaeoecology* 9(1): 85-97
- Kruse, S. E., 1992, 'Anglo-Saxon Balances and Weights from Englands', *Medieval Archaeology*, 26, 67-95
- Lauwerier, R.C.G.M., 1997, 'Faunal Remains from Dutch Medieval Towns: A Survey', *Anthropozoologica*, 25 (26), 479-86
- Locker, A. and Jones, A.K.G., 1995, Ipswich: The fish remains (from sites 0802, 1804, 3410, 5202, 5801, 5901, 5902, 6202, 6904 & 7404). Ancient Monuments Report 4548
- MacGregor, A., Mainman, A. and Rogers, N. S. H., 1999, *Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York*, The Archaeology of York 17/12, York (York Archaeological Trust)
- Mainman, A. J. and Rogers, N. S. H., 2000, *Craft, Industry and Everyday Life: Finds from Anglo-Scandinavian York*, *The Archaeology of York Volume 17: The Small Finds*, Council for British Archaeology
- Malcolm, G., Bowsher, D. and Cowie, R., (eds), 2003, *Middle Saxon London. Excavation at the Royal Opera House 1989-99*, MoLAS Monograph 15, (London, Museum of London)
- Martin, E., Pendleton, C., Plouviez, J., Thomas, G. and Geake, H., 2001, Archaeology in Suffolk 2000. *Proceedings of the Suffolk Institute of Archaeology* XL.1, pp. 65-109
- Maslin, S. P., 2017, *The landscape and ecology of the Anglo-Saxon Conversion: a multiproxy environmental and geoarchaeological contextualisation of the high-status settlement at Lyminge, Kent*. PhD thesis, University of Reading
- Meindl, R.S. and Lovejoy, C.O., 1985, Ectocranial Suture Closure: A revised method for the Determination of Skeletal Age at Death Based on the Lateral-Anterior Sutures. *American Journal of Physical Anthropology* 68: 57-66
- Meulen, J. van der., 2003, *Goudse Pijpenmakers en hun Merken*. Pijpelogische Kring Nederland, Leiden en de Stedelijke Musea Gouda
- Mitchiner, M., 1988, *Jetons, Medalets and Tokens: The Medieval Period and Nuremberg*. London, Hawkins
- MPRG., 1998, *A Guide to the Classification of Medieval Ceramic Forms*. Medieval Pottery Research Group Occasional Paper 1

MPRG, 2001, *Minimum Standards for the Processing, Recording, Analysis and Publication of Post-Roman Ceramics*. Medieval Pottery Research Group Occasional Paper 2

Murphy, P., 2001, *Specialist Report: The Environment and Agrarian Economy of Saxon and Medieval Ipswich*, English Heritage

Naismith, R., 2011, *The Coinage of Southern England 796-865*, vol. 2. London

NERC, 1999, *Minerals in Britain. Past production...Future Potential. Gemstones*. British Geological Survey, Nottingham

Nicholson, R.A., 2020, Fish remains from Stoke Quay, pp 381-91 in *Excavations at Stoke Quay, Ipswich: Southern Gipeswic and the parish of St Augustine* (R Brown, S Teague, L Loe, B Suds and E Popescu), *East Anglian Archaeology* Report No. 172

Nicholson, R.A., 2019, Fish Remains from excavations at Oxford Castle, pp 391-394 in J Munby, A Norton, D Poore and A Dodd (eds) *Excavations at Oxford Castle 1999-2009*, Oxford Archaeology, Oxford

North, J., 1991, *The English Hammered Coinage, voll. 2 Edward I to Charles II 1272-1662*. London, Spink

Oak-Rhind, H., 1976, 'Clay Tobacco Pipe Makers of Suffolk', in *The Suffolk Review*, 4:4, pp.198-211

Oswald, A. 1975. *Clay Pipes for the Archaeologist*. British Archaeological Reports 14

Owles, E. J. and Smedley, N., 1964, Archaeology in Suffolk, 1964. *Proceedings of the Suffolk Institute of Archaeology* XXX.1, pp. 116-123

Page, W., 1975, 'Houses of Austin canons: Priory of St Peter and St Paul, Ipswich', in *A History of the County of Suffolk: Volume 2*, ed. London, pp. 102-103. British History Online <http://www.british-history.ac.uk/vch/suff/vol2/pp102-103> [accessed 24 September 2022]

Pajic, M., 2019, 'Ale for an Englishman is a natural drink': the Dutch and the origins of beer brewing in late medieval England. *Journal of Medieval History*, Vol. 45:3, 285-300, <https://doi.org/10.1080/03044181.2019.1612182>

Patrick, A., 1996, Establishing a Typology for the Buildings of the Floor Malting Industry. *Ind Archaeol Rev* 18 (2). Vol 18(2), pp. 180-200

Patrick, A., 2004, Strategy or the Historic Industrial Environment Report No.1. *Maltings in England*. English Heritage

Payne, S., 1973, 'Kill-off Patterns in Sheep and Goats: The Mandibles from Aşvan Kale', *Anatolia Studies*, 23, 281-303

Pearce, J., 1992, *Border Wares. Post-medieval pottery in London, 1500-1700, Volume 1*. London: HMSO

Popescu, A. and Gaimster, M., 2020, *Excavation at Stoke Quay, Ipswich. Southern Gipeswic and the parish of St Augustine*. *East Anglian Archaeology* 172, 209-12

Popkin, P.R.W., Baker, P., Worley, F., Payne, S. and Hammon, A., 2012, 'The Sheep Project (1): determining skeletal growth, timing of epiphyseal fusion and morphometric variation in unimproved Shetland sheep of known age, sex, castration status and nutrition', *Journal of Archaeological Science*, 39, 1775–92

Prummel, W. and Frisch, H.J., 1986, 'A Guide for the Distinction of Species, Sex and Body Side in Bones of Sheep and Goat', *Journal of Archaeological Science*, 13, 567–77

Mattingly, H. and Sydenham E. A., 1926, *Roman Imperial Coinage*, vol 2 Vespasian to Hadrian (69-138). London, Spink

Reed, W., 1907, *Brewers' Journal: Hop and Malt Trades' Review*, Vol. 43

Richmond, L. and Turton, A., 1990, *The Brewing Industry: A guide to Historical Records*

Rickett, R., 2021, 'Post-Roman and Medieval Drying Kilns', in Rickett, R. and McKerracher, M. (ed.), *Post-Roman and Medieval Drying Kilns: Foundations of Archaeological Research*. Archaeopress Publishing Ltd

Riddler, I. D., 2004, Bone and Antler, in H. Wallis, *Excavations at Mill Lane, Thetford*, East Anglian Archaeology 108, Gressenhall (Archaeology and Environment Norfolk Museums and Archaeology Service), 58-66

Riddler, I. D., Trzaska-Nartowski, N. I. A. and Soulat, J., 2012, 'Riveted Mounts Reconsidered': Horn Composite Combs in Early Medieval Ireland, Britain and France, *Archaeological Journal* 169, 395-421

Riddler, I. D., Trzaska-Nartowski, N. I. A. and Hatton, S., forthcoming, *An Early Medieval Craft. Antler and Bone Working from Ipswich Excavations 1974-1994*, East Anglian Archaeology, Bury St Edmunds (Suffolk County Planning Department)

Rimmer, M., Thickett, D., Watkinson, D. and Ganiaris, H., 2013, *Guidelines for the Storage and Display of Archaeological Metalwork* (Swindon, English Heritage)

Rose, E., 2000, 'Norfolk skintling survey: a progress report', *British Brick Soc. Information* 80, 12–13

Ruddle, J.S., 1997, *An Investigation of Bone Histology as a Potential Age Indicator in Roe Deer* (unpublished PhD thesis, University College London)

SCCAS, n.d., 'Ipswich Saxon', *Suffolk Heritage Explorer*, available: <https://heritage.suffolk.gov.uk/saxon-ipswich> accessed 25/7/22

Scull, C., 2013, 'The Buttermarket cemetery and the origins of Ipswich in the seventh century AD', *Proc. Suff. Inst. Archaeol.* 43(1), 43–51

Schaefer, M., Black S. and Scheuer, L., 2009, *Juvenile Osteology: A Laboratory and Field Manual*, Elsevier/Academic Press London

Shennan, S., 1988, *Quantifying Archaeology* (Edinburgh: Edinburgh University Press)

Silver, I. A., 1969, 'The Ageing of Domestic Animals', in Brothwell, D. and Higgs, E. (eds.), *Science in Archaeology: A Survey of Progress and Research* (London: Thames and Hudson), 283–302

Smith R.N., 1986, 'Appearance of ossification centres in the kitten', *Journal of Small Animal Practice*, 9, 497–511

Society of Museum Archaeologists, 1993, *Selection, Retention and Dispersal of Archaeological Collections: guidelines for use in England, Wales and Northern Ireland* (1st edition)

Spence, C. (ed.), 1994, *Archaeological Site Manual* (3rd edition). Museum of London, London. English Heritage Archaeology Report 18, London, pp 115-59

Stace, C., 2010, *New Flora of the British Isles*. Third edition. Cambridge University Press

Taylor, M, 1998, Wood and Bark from the enclosure ditch. In: F Pryor, 1998. *Etton: excavations at a Neolithic causewayed enclosure near Maxey, Cambridgeshire, 1982-87*

Taylor, M., 2001, The Wood. In: Pryor, F. M. M. (ed.) *The Flag Fen Basin: Archaeology and Environment of a Fenland Landscape*. English Heritage Archaeological Reports, London, 167-228

Teichert, M., 1975, *Osteometrische Untersuchungen zur Berechnung der Widerristhöhe bei Schafen*, in Clason, A.T. (ed.), *Archaeozoological studies* (Amsterdam), 51–69

Tempel, W- D., 1969, *Die Dreilagenkämme aus Haithabu. Studien zu den Kämmen der Wikingerzeit im Nordseeküstengebiet und Skandinavien*, unpublished dissertation, Göttingen

Thieren, E., Wouters, W., van Neer, W. and Eryynck, A., 2012, Body length estimation of the European eel *Anguilla anguilla* on the basis of isolated skeletal elements, *Cybium* 36(4), 551-562

Van den Bossche, W., 2001, *Antique Glass Bottles: their history and evolution (1500-1850). A Comprehensive, Illustrated Guide With a World-wide Bibliography of Glass Bottles*. Antique Collectors' Club

Van de Noort, R., Ellis, S., Taylor, M. and Weir, D., 1995, Preservation of Archaeological sites. In: R. Van de Noort & S. Ellis (eds.) *Wetland Heritage of Holderness - an archaeological survey*

Von den Driesch, A., 1976, *A Guide to the Measurement of Animal Bones from Archaeological Sites*. (New Haven (CT): Peabody Museum Bulletins 1)

Wade, K., 1993, 'The Urbanisation of East Anglia: The Ipswich Perspective' in *Flatlands and Wetlands: Current Themes in East Anglian Archaeology*. EAA 50, Scole Archaeological Committee

Walton, P., 1989, *Textiles, Cordage and Raw Fibre from 16-22 Coppergate* (The Archaeology of York 17/5), London: CBA for York Archaeological Trust

Walton Rogers, P., 1997, *Textile Production at 16-22 Coppergate*, The Archaeology of York. The Small Finds 17/11, London (Council for British Archaeology)

Walton Rogers, P., 2012, 'Cilicium: hair cloth', pp125-6 in G Owen-Crocker, E Coatsworth, M Hayward, *Encyclopedia of Dress and Textiles in the British Isles, c.450-1450*. Leiden & Boston: Brill

Watt, J., Pierce, G.J. and Boyle, P.R., 1997, *Guide to the Identification of North Sea Fish Using Prernaxillae and Vertebrae*, Ices Cooperative Research Report No. 220, Copenhagen

Webster, M., 2016, Lower Brook Street, Ipswich. Archaeological Evaluation. OA East Report No. 1938

Weetch, R., 2014, *Brooches in late Anglo-Saxon England within a north west European context: a study of social identities between the eighth and the eleventh centuries*. Unpubl. PhD thesis, Univ. Reading

West, S., 1963, 'The local pottery', in 'Excavations at Cox Lane (1958) and at the Town Defences, Shire Hall Lane, Ipswich (1959)', *Proc. Suff. Inst. Archaeol.* 29(3), 246-72

Wheeler, A. and Jones, A.K.G., 1976, Fish remains, pp 208-224 in Excavations on Fuller's Hill, Great Yarmouth (A Rogerson), *East Anglian Archaeology* Report No. 2, 131-234

White, W., 1844, *History, Gazetteer, and Directory of Suffolk, and the Towns near its Borders*, Sheffield

Willmott, H., 2002, *Early Post-Medieval Vessel Glass in England, c 1500-1670*. CBA Research Report 132; Council for British Archaeology

Winder, J.M., 1992, *A Study of the variation in Oyster Shells from Archaeological sites and a discussion of oyster exploitation, Volume 1* (unpublished PhD thesis, University of Southampton)

Winder, J.M., 2011, *Oyster Shells from Archaeological Sites* (JM Winder)

Wouters, W., Muylaert, L., and van Neer, W., 2007, The distinction of isolated bones from plaice (*Pleuronectes platessa*), flounder (*Platichthys flesus*) and dab (*Limanda limanda*): a description of the diagnostic characters, *Archaeofauna* 16, 33-72

Zohary, D., Hopf, M., 2000, *Domestication of Plants in the Old World – The origin and spread of cultivated plants in West Asia, Europe, and the Nile Valley*. 3rd edition. Oxford University Press

Electronic sources

Ipswich Urban Archaeology Database (UAD), <https://heritage.suffolk.gov.uk/ipswich-uad>

Ipswich 1974-1990 Excavation Archive,
http://archaeologydataservice.ac.uk/archives/view/ipswich_parent_2015/

APPENDIX E GAZETTEER OF HERITAGE ASSETS SHOWN ON FIG. 4A-F

SHER = Suffolk Historic Environment Record

SHER Record	IAS Record	Centred National Grid Reference	Name	Description
IPS 206	IAS 3502	TM 1664 4454	Cox Lane	Saxon pottery kilns.
IPS 210	IAS 4601	TM 1656 4434	Wingfield Street/Foundation Street	Extensive remains found, including Middle Saxon.
IPS 211	IAS 6901, IAS 6904	TM 1663 4423	Shire Hall Yard	An area of Saxon occupation and defences.
IPS 212	IAS 5701	TM 1655 4422	Smart Street/Foundation Street	An area of Saxon occupation.
IPS 213		TM 1653 4415	Star Lane	An area of Saxon occupation, "now a car park".
IPS 214	IAS 5402	TM 1653 4415	Corner of Star Lane and Turret Lane	An area of Saxon occupation.
IPS 215	IAS 5203	TM 1628 4415	St. Peter's Street	Saxon finds. Including sunken featured buildings.
IPS 228	IAS 3104	TM 1633 4448	Buttermarket Shopping Centre Development, Buttermarket and St. Stephens Lane	1988: 7th to 9th century Saxon cemetery, Ipswich Ware kiln, traces of numerous 8th to 11th century buildings were found.
IPS 305	IAS 2902	TM 1632 4415	Site of former Oxborrows Hotel, St. Peter's Street	1998: Small excavation at the junction of St. Peter's Street and Star Lane in advance of building works located several pits and articulated burials.
IPS 313	IAS 3301	TM 1639 4444	St. Stephen's Lane	Human skeletons and Thetford Ware.
IPS 323	IAS 3410	TM 1655 4443	15-17 Tacket Street, (Wingfield House)	Archaeological investigation located pits and post holes and coin of Alfred.
IPS 329	IAS 3601	TM 1677 4454	22-4 St Helen's Street	A mid Saxon rubbish pit and late Saxon pottery kilns. One of the kilns was a Musty type 1a.
IPS 344	IAS 4401	TM 164 444	Dog's Head Street	Pit found in basement.
IPS 345	IAS 4402	TM 164 443	16 Lower Brook Street	Contractors footings revealed Saxon features and pottery.
IPS 346	IAS 4403	TM 164 443	Turret Lane	Strip foundations revealed a skeleton.
IPS 347	IAS 4404	TM 164 444	Dog's Head Street	Strip foundations revealed a pit with Saxon pottery.
IPS 349	IAS 4502	TM 164 443	9 Lower Brook Street	Rescue excavation yielded Saxon pits with associated pottery.
IPS 350	IAS 4505	TM 165 444	16 Tacket Street	Holes for stanchions revealed some undated pits and Thetford pottery.
IPS 352	IAS 4702	TM 166 443	"Warners", Foundation Street	Stanchion holes revealed (presumably Late Saxon) human skeletal remains.
IPS 355	IAS 4801, IAS 4802	TM 1663 4431	Foundation Street and Former School Street	Excavations in the late 1970s and 1980s within the area of later Blackfriars monastery.
IPS 358	IAS 4903	TM 167 442	Fore Street	Area in Clare Good layer 2008/IAS map

SHER Record	IAS Record	Centred National Grid Reference	Name	Description
IPS 364	IAS 5401	TM 1640 4422	Suffolk Press, Turret Lane	A wood-lined well 3 feet square was found during construction. It was of a depth of 11 feet with sherds of Thetford ware, 2 boars' tusks and a horn core.
IPS 365	IAS 5502	TM 165 443	15-17 Lower Brook Street	Saxon features and finds.
IPS 369	IAS 5901	TM 1669 4413	Key Street	Excavation found evidence of Saxon occupation.
IPS 384	IAS 4302	TM 163 443	Turret Lane School	Excavation a probable Saxon well and a Late Saxon Thetford Ware kiln.
IPS 419	IAS 4406	TM 1644 4439	6 Lower Brook Street	Fragmentary remains of two undated human burials [Thetford pottery].
IPS 441	IAS 4708	TM 1665 4433	Unicorn House, Foundation Street	Monitoring revealed several features with Thetford-type pottery.
IPS 455	IAS 5305	TM 1643 4411	Former Cardinal Works Site, College Street	Evaluation identified Middle Saxon occupation and finds.
IPS 605	IAS 5903	TM 1663 4413	Eastern Triangle	Extra-mural activity during the Late Anglo-Saxon period
IPS 661		TM 1653 4408	St Mary at the Quay	Excavation identified burials dating from the Middle Saxon period and a Middle Saxon midden deposit.
IPS 720	IAS 5003	TM 1612 4424	Franciscan Way/Wolsey Street	Finds include Middle Saxon wells and ditches. Iron working remains and debris date from the Middle Saxon and Early Late Saxon periods.
IPS 744	IAS 4201	TM 1624 4438	St. Nicholas Street	Demolition and excavation revealed Middle Saxon features and finds.
IPS 745	IAS 5801	TM 1650 4411	Foundation Street (Cranfield's car park)	Possible Saxon buildings.
IPS 746	IAS 5902	TM 1671 4422	Fore Street (Star Lane)	1982: Excavation yielded Saxon pottery and features.
IPS 747	IAS 5204	TM 1624 4410	Greyfriars Road (Island Site)	1989: Features and finds from Early Middle Saxon to Modern.
IPS 752	IAS3201	TM 1640 4453	32-38 Buttermarket	8th - 10th Century structures and Saxon pits.
IPS 753	IAS 5201	TM 1627 4409	Greyfriars Road	Early Late Saxon features and finds.
IPS 754	IAS 5202	TM 1631 4410	Greyfriars Road/St. Peters Street	1982: Middle Saxon features and finds.
IPS 825	IAS 4407	TM 1645 4433	14 Lower Brook Street	Construction in cellar removed top of pit containing animal bone and Thetford Ware.
IPS 828	IAS 4503	TM 1647 4436	9 Lower Brook Street	Ipswich Ware and animal bones were recovered from a Middle Saxon pit.
IPS 832	IAS 4801, IAS 4802	TM 1665 4432	Middle Late Saxon Cemetery North, Blackfriars	The Northern Middle Late Saxon cemetery found under the Dominican Friary in the 1979-1985 excavations.
IPS 834	IAS 4801, IAS 4802	TM 1663 4429	Middle Late Saxon Cemetery South, Blackfriars	The Northern Middle Late Saxon Cemetery found under the Dominican Friary in the 1979-1985 excavations.
IPS 840	IAS 5301	TM 1635 4413	Star Lane Link Road	Middle Saxon finds from Star Lane North of St. Peter's Church, Ipswich.
IPS 865 (Site)		TM 1641 4419	Archant Site, Lower Brook Street	11th century urban remains along with residual Middle Anglo-Saxon pottery and metalwork

Table 82: Gazetteer of settlement related Anglo-Saxon SHER monuments shown on Fig. 4a

Anglo-Saxon findspots			
Pottery	Middle Saxon coin	Late Saxon coin	Folding balance
IPS 232	IPS 210	IPS 747	IPS 210
IPS 274	IPS 212	IPS 865 (Site)	IPS 228
IPS 338	IPS 215		IPS 865 (Site)
IPS 340	IPS 228		
IPS 341	IPS 323		
IPS 359	IPS 744		
IPS 361	IPS 745		
IPS 366	IPS 747		
IPS 368			
IPS 378			
IPS 379			
IPS 380			
IPS 383			
IPS 385			
IPS 442			
IPS 446			
IPS 448			
IPS 469			
IPS 657			
IPS 733			
IPS 806			
IPS 865 (Site)			

Table 83: List of SHER Anglo-Saxon findspots shown on Fig. 4a

SHER Record	IAS Record	Centred National Grid Reference	Name	Description
Priory of St Peter and St Paul				
IPS 363	IAS 5303	TM 163 441	College Street	Septaria wall, (possibly associated with the Augustinian Priory of St. Peter and St. Paul), as well as four skeletons.
IPS 448	IAS 5305	TM 164 441	Former Cardinal Works Site	Graves related to the Medieval Priory.
IPS 455	IAS 5305	TM 1643 4411	Former Cardinal Works Site, College Street	Evaluation identified Middle Saxon to Post Medieval occupation and finds.
IPS 733	IAS 5505	TM 164 441	Lower Brook Street/Foundation Street	Early Medieval structures and later features.
IPS 824	IAS 4309	TM 1637 4428	Junction of Rose Lane/Turret Lane	Human and animal bone found in gravel surface of electric substation. Initially suspected to be imported gravel but site is near to reports of human bone from St Peter and Pauls priory, to South.
IPS 839		TM 163 442	Priory of St Peter & St Paul, SPECULATIVE	Augustinian priory of St Peter & St Paul.
IPS 841		TM 1638 4411	Stone Coffin, Former Cardinal Works Site	Burials associated with the priory.
IPS 1392		TM 1635 4411	Church Building, St Peters	Church.
Other monastic remains				
IPS 228	IAS 3104	TM 1633 4448	Buttermarket Shopping Centre Development,	Medieval Carmelite Friary and associated buildings.

SHER Record	IAS Record	Centred National Grid Reference	Name	Description
			Buttermarket and St. Stephens Lane	
IPS 264	IAS 5001	TM 1607 4420	Cecelia Street	Excavations identified a portion of the precinct wall of the Greyfriars Friary.
IPS 355	IAS 4801, IAS 4802	TM 1663 4431	Foundation Street and Former School Street	Excavations in the late 1970s and 1980s within the area of later Blackfriars monastery.
IPS 367	IAS 5601	TM 165 442	Tooley's Almshouses, Foundation Street	Rebuilding of Gables on Tooley Street wing revealed massive flint and mortar wall of Blackfriars.
IPS 482	IAS 4705	TM 1669 4434	2-8 Fore Street	Monitoring of groundworks partially within the precinct of the Blackfriars Friary identified parts of the precinct wall and two pits.
IPS 720	IAS 5003	TM 1612 4424	Franciscan Way/Wolsey Street	Excavations from within former Franciscan Friary Precinct. Early Medieval Ovens were excavated. The most significant aspect of the medieval and later sequence was the use of the site for burial.
IPS 726		TM 1610 4423	Greyfriars (Franciscan) Friary, SPECULATIVE	Medieval Friary.
IPS 807	IAS 3104	TM 1632 4448	Carmelite Friary, Buttermarket, St. Stephens Lane. SPECULATIVE	Speculative extent of Carmelite Friary founded 1278.
IPS 830	IAS 4703, IAS 4704	TM 1661 4427	Dominican Friary, SPECULATIVE	Assumed area of Friary Precinct.
IPS 1801		TM 1659 4412	Blackfriars Bridge (Speculative monument)	Blackfriars Bridge.
IPS 1802		TM 1660 4420	Blackfriars, south gate of, (Speculative monument)	Blackfriars, south gate.
Churches				
IPS 205	IAS 5101	TM 1617 4427	St Nicholas Church	St. Nicholas Church and cemetery.
IPS 274	IAS 5304	TM 1635 4411	St Peter's Church	St. Peter's Church, Ipswich, various events yielding Saxon to Modern finds.
IPS 277	IAS 3203	TM 1640 4449	St Stephen's Church	St. Stephen's Church, Tourist Information Centre.
IPS 278	IAS 5802	TM 1651 4409	St Mary's Church	Church of St Mary at the Quay.
IPS 365	IAS 5502	TM 165 443	St Edmund Chapel (15-17 Lower Brook Street)	Medieval Cemetery for the demolished Chapel of St. Edmund de Pountney.
IPS 639	IAS 5908	TM 1673 4417	Ostirbolt Chapel (Student Village, Fore Street)	Evaluation identified a cemetery thought to be associated with the 'lost' church or chapel known as Ostirbolt and the remains of medieval buildings.
Cardinal's College of St Mary				
IPS 223	IAS 5302	TM 1638 4409	Wolsey's Gate, College Street	A fine brick gateway originally belonging to a proposed college which Wolsey was to set up at Ipswich.
IPS 275		TM 163 442	Wolsey's College, Ipswich SPECULATIVE	Site of shortlived College founded by Cardinal Wolsey in 1528 and dissolved in 1531.
Excavated medieval walls				
IPS 349	IAS 4502	TM 164 443	9 Lower Brook Street	Rescue excavation yielded a Medieval wall

SHER Record	IAS Record	Centred National Grid Reference	Name	Description
IPS 584	IAS 5804	TM 165 441	Western Triangle (former Cranfield's Mill garage), Star Lane/College Street	Substantial septaria-built walls were found, currently thought to be c.14th century in date.
Excavated stream				
IPS 1746		TM 1646 4433	Brook Street (Street Record)	Road and associated features [stream] mentioned in the Ipswich Documentary Card index.
IPS 1809		TM 1639 4431	Conduit, St Lawrence	Conduit.

Table 84: Gazetteer of medieval SHER monuments shown on Fig. 4b

SHER Record	Centred National Grid Reference	Name	Description
Buildings			
IPS 412	TM 1629 4427	1-3 St Peter's Street	Site of Lord Curzon's House.
IPS 723	TM 1658 4434	Felaws House, Ipswich School	Late Medieval type timber framed house/s with octagonal brick chimneys.
IPS 1746	TM 1646 4433	Brook Street	Site of Duke of Suffolk's House and Fishmarket (from 1616).
IPS 1875		Turret House, Turret Lane	Gatehouse of Cardinal Wolsey's College?
IPS 1950	TM 1671 4437	1-3 Fore Street (Spread Eagle PH)	16th-17th century timber framed and plastered building.
IPS 1951	TM 1671 4436	5-7, and 9 Fore Street	16th-17th century timber framed and plastered building.
IPS 1954	TM 1670 4433	15 Fore Street	Post-medieval timber framed building.
IPS 1956	TM 1670 4431	19, 21, and 23 Fore Street	A late 17th century timber-framed and plastered building.
IPS 1957	TM 1669 4426	24 Fore Street	17th century timber framed and plastered building.
IPS 1958	TM 1670 4429	27 and 29 Fore Street	17th century timber framed and plastered house.
IPS 1971	TM 1674 4421	42 Fore Street	17th century timber framed and plastered house.
IPS 1976	TM 1677 4417	60-62 Fore Street	small 17th century timber-framed and plastered building with a jettied upper storey.
IPS 1990	TM 1651 4421	Foundation Street	Timber-framed building, formerly an inn, now destroyed
IPS 1999	TM 1647 4431	15 Lower Brook Street	Late 16th/early 17th century timber-framed building.
IPS 2000	TM 1645 4431	16 Lower Brook Street	17th century timber-framed building.
IPS 2017	TM 1622 4439	10-16 St. Nicholas Street	16-17th century timber-framed buildings.
IPS 2019	TM 1621 4436	20-22 St. Nicholas Street	16th-17th century timber framed buildings.
IPS 2021	TM 1624 4436	19-21 St. Nicholas Street	17th century timber-framed building.
IPS 2022	TM 1624 4434	25 St. Nicholas Street	16-17th century timber-framed buildings.
IPS 2024	TM 1624 4432	33-39 St. Nicholas Street	17th century timber-framed building.

SHER Record	Centred National Grid Reference	Name	Description
IPS 2026	TM 1626 4429	47 St. Nicholas Street	15th century timber-framed building.
IPS 2029	TM 1629 4421	St. Peter's Street	Timber-framed buildings.
IPS 2030	TM 1628 4424	5-7 St. Peter's Street	Timber-framed buildings.
IPS 2031	TM 1629 4423	9-13 St. Peter's Street	Timber-framed buildings.
IPS 2034		15-17 St. Peters Street	Timber-framed buildings.
IPS 2035		19-21 St. Peters Street	Timber-framed buildings.
IPS 2036		25 St. Peters Street	Timber-framed buildings.
IPS 2037		27-29 St. Peters Street	Timber-framed buildings.
IPS 2038		31 St. Peters Street	Timber-framed buildings.
IPS 2039		33a St. Peters Street	Timber-framed buildings.
IPS 2040		Oxborrows Hotel, St. Peters Street	Timber-framed buildings.
IPS 2041		17 Silent Street	Timber-framed buildings.
IPS 2042		17 St. Stephens Lane	Timber-framed buildings.
IPS 2043	TM 1628 4432	15 Silent Street	Timber-framed buildings.
IPS 2126	TM 1641 4440	Plough Inn, Ipswich	Timber-framed buildings.
IPS 2132	TM 1634 4407	4 College Street	Timber-framed buildings.
Landmarks			
IPS 228	TM 1633 4448	Buttermarket Shopping Centre	Buttermarket (?AD1700-1912)
IPS 343	TM 163 443	Turret Lane, Ipswich	Demolition of 19th Century bread ovens found destroying the site of the "Turret". In actuality the gatehouse of Cardinal Wolsey's College (School)
IPS 360	TM 1622 4429	Hippodrome Theatre: St Nicholas Street	Old cattle market
IPS 412	TM 1629 4427	1-3 St Peter's Street	Site of Lord Curzon's House.
IPS 1746	TM 1646 4433	Brook Street	Fishmarket (from 1616)
IPS 1746	TM 1646 4433	Brook Street	Site of Duke of Suffolk's House.
IPS 1757	TM 1643 4443	Dogs Head Street	Timber market (from 1674)
IPS 1848	TM 1641 4416	Pond Visible on Penningtons Map of 1778	Pond

Table 85: Gazetteer of post-medieval SHER monuments shown on Fig. 4c

Post-medieval findspot		
Imported continental pottery	Clay tobacco pipe	Glass vessel
IPS 313	IPS 274	IPS 1938
IPS 442	IPS 340	IPS 274
IPS 469	IPS 342	IPS 442
IPS 584	IPS 442	IPS 446
IPS 605	IPS 446	IPS 455
IPS 657	IPS 455	IPS 584
IPS 661	IPS 584	IPS 605
IPS 865	IPS 605	IPS 661
IPS 1938	IPS 751	

Table 86: List of SHER post-medieval findspots shown on Fig. 4c

SHER Record	IAS Record	Centred National Grid Reference	Name	Description
Brewery				
IPS 228	IAS 3104	TM 1633 4448	Buttermarket Shopping Centre Development	1988: Excavation in advance of construction of Buttermarket Shopping Centre. Post-medieval brewery.
Maltings				
IPS 611	IAS 6606	TM 1680 4412	8 Wherry Lane / Isaac Lord complex	Monitoring revealed the brick foundations of earlier buildings and structures, including the base of a possible malting kiln of 17th or early 18th century date.
IPS 639	IAS 5908	TM 1673 4417	Student Village, Fore Street	The cellars of at least two Tudor buildings (one of which has been identified from early maps as a malt house) were found along the southern frontage of the site.
IPS 678		TM 163 439	Stoke Bridge Maltings	Former Maltings. Building extant.
IPS 767		TM 1680 4409	1-2 Wherry Lane	19th century walls associated with a public house and maltings identified during monitoring.
IPS 865 (Site)			Archant Site, Lower Brook Street	Excavation of maltings kiln and associated foundation walls.
Inn				
IPS 1741		TM 1678 4422	Angel Lane (Street Record)	Road and associated features [inn] mentioned in the Ipswich Documentary Card index.
IPS 1745		TM 1631 4400	Bridge Street (Street Record)	Road and associated features [inn] mentioned in the Ipswich Documentary Card index.
IPS 1757		TM 1643 4443	Dogs Head Street, (Street Record)	Road and associated features [inn] mentioned in the Ipswich Documentary Card index.
IPS 1761		TM 1630 4442	Falcon Street, (Street Record)	Road and associated features [inn] mentioned in the Ipswich Documentary Card index.
IPS 1762		TM 1655 4425	Foundation Street, (Street Record)	Road and associated features [inn] mentioned in the Ipswich Documentary Card index.
IPS 1769		TM 1675 4410	Key Street, (Street Record)	Road and associated features [inn] mentioned in the Ipswich Documentary Card index.
IPS 1772		TM 1665 4423	Lower Orwell Street, (Street Record)	Road and associated features [inn] mentioned in the Ipswich Documentary Card index.
IPS 1792		TM 1628 4421	St Peter's Street, (Street Record)	Road and associated features [inn] mentioned in the Ipswich Documentary Card index.
IPS 1795		TM 1654 4442	Tacket Street, (Street Record)	Road and associated features [inn] mentioned in the Ipswich Documentary Card index.
IPS 1990		TM 1651 4421	84-86 Foundation Street	Timber-framed building, formerly an inn, now destroyed.

SHER Record	IAS Record	Centred National Grid Reference	Name	Description
IPS 2044		TM 1647 4434	'Tankard Inn', 13 Tacket Street	Timber-framed building Survey of Ipswich - 'Tankard Inn'
IPS 2059		TM 1626 4430	3-5 Silent Street	Early timber-framed Tudor inn

Table 87: Gazetteer of brewing related SHER monuments shown on Fig. 4d

SHER Event Number	IAS Record	Centred National Grid Reference	Name	Description
ESF15099	IAS 5203	TM 1626 4415	St. Peter's Street	Excavation
ESF15171	IAS 3104	TM 1631 4449	Buttermarket Shopping Centre Development, Buttermarket and St Stephens Lane	Excavation
ESF18794		TM 1619 4428	St Nicholas Church, Cromwell Square	Evaluation
ESF18355	IAS 3410	TM 1656 4444	15-17 Tacket Street, (Wingfield House)	Excavation
ESF19608	IAS 6405	TM 1648 4403	Cranfields Mill	Evaluation
ESF21218	IAS 5404	TM 1645 4427	24 Lower Brook Street	Monitoring
ESF21903	IAS 5903	TM 1663 4413	Eastern Triangle	Excavation [PXA & UPD]
ESF23566	IAS 6801	TM 1635 4441	Old Cattle Market	Excavation?
ESF23568	IAS 4302	TM 1637 4433	Turret Lane School	Excavation
ESF23580	IAS 4310	TM 1629 4427	1-3 St Peter's Street	Monitoring
ESF23585	IAS 4403	TM 1642 4432	Turret Lane	Watching Brief?
ESF23588	IAS 4406	TM 1644 4439	6 Lower Brook Street	Watching Brief
ESF23590	IAS 4407	TM 1645 4433	14 Lower Brook Street	Watching Brief?
ESF23593	IAS 4502	TM 1649 4436	9 Lower Brook Street	Watching Brief
ESF23595	IAS 4503	TM 1647 4436	9 Lower Brook Street	Watching Brief?
ESF23602	IAS 4801, IAS 4802	TM 1663 4431	Foundation Street and Former School Street	Excavation
ESF23604	IAS 4703, IAS 4704	TM 1663 4433	Blackfriars Priory	Excavation
ESF23700	IAS 5305	TM 1642 4410	Former Cardinal Works Site	Evaluation
ESF23704	IAS 5301	TM 1635 4414	Star Lane Link Road	Excavation
ESF23708	IAS 5304	TM 1637 4409	Churchyard of St. Peter's Church	Monitoring?
ESF23749	IAS 5403	TM 1641 4429	Ex Condor Works, TM 1641 4429 Turret Lane	Evaluation
ESF23752	IAS 5502	TM 1650 4429	15-17 Lower Brook Street	Excavation
ESF23753	IAS 5505	TM 1648 4417	Lower Brook Street/Foundation Street	Excavation
ESF23770	IAS 5801	TM 1650 4411	Foundation Street (Cranfield's car park)	Excavation
ESF23805	IAS 5804	TM 1655 4410	Western Triangle (former	Evaluation and Excavation [PXA & UPD]

SHER Event Number	IAS Record	Centred National Grid Reference	Name	Description
			Cranfield's Mill garage), Star Lane/College Street	
ESF23834	IAS 6202	TM 1629 4405	2 Bridge Street	Excavation
ESF23857	IAS 6406	TM 1658 4405	Albion Wharf	Excavation
ESF23986 (the site)		TM 1641 4419	Archant Site, Lower Brook Street	Evaluation
ESF25484 (the site)		TM 1641 4419	Lower Brook Street	Evaluation

Table 88: Gazetteer of selected SHER events shown on Fig. 4e (green = report or article available, yellow = Ipswich Archive Site Summary, red = SHER online ref. and/or ADS biblio. ref. only)

SHER Scheduled Monument Number	Centred National Grid Reference	Name
DSF15985	TM 1663 4422	Area of Middle and Late Saxon and medieval defences, off Shire Hall Yard.
DSF15986	TM 1662 4419	Area of Middle and Late Saxon and medieval defences, off Shire Hall Yard.
DSF15991	TM 1662 4419	Area of Middle and Late Saxon town between Turret Lane and Star Lane.
DSF15992	TM 1642 4416	Area of Middle and Late Saxon town between Turret Lane and Star Lane.
DSF15993	TM 1647 4415	Area of Middle and Late Saxon town between Turret Lane and Star Lane.
DSF15994	TM 1623 4413	Area of Middle and Late Saxon town, off Greyfriars Road.
DSF16031	TM 1637 4409	Wolsey's Gate, College Street
DSF16032	TM 1663 4432	Remains of Dominican Friary

Table 89: Gazetteer of selected SHER scheduled monuments shown on Fig. 4f

APPENDIX F 1895 – PARTICULARS – “MERCANTILE PREMISES, TURRET LANE” IPSWICH FOR SALE BY GARROD TURNER & SON

Suffolk Archives ref.: HE402/1/1895/56, see Fig. 22

Described as in the parish of Saint Peter, Ipswich.

Three Maltings:

The first, abutting upon Turret Lane, is brick, stud, plaster and plain tiled and has working floor, 111ft by 22ft, brick paved, with cistern and pump at end, Barley Store and Malt Chamber over; and at the end a kiln with furnace.

The second, at the east side, is brick built, with tiled roof, and has two working floors, each 118ft by 22ft, brick-paved, and having cistern and pump, barley store and malt chamber over; kiln adjoin, 20ft squared, with furnace below.

The third, on the west side, is brick and plain tiled and has two working floors, brick paved, each 114ft by 22ft. 6 inch, barley and malt stores over; kiln adjoining 20ft 3 inches squared, with furnace below.

Warehouse:

Abutting upon turret lane, having corn stores, cart shed, stable on the ground floor, and over two are granaries.

A large yard:

With gated entrances from turret lane, in which is an outhouse and water supply.

A cottage:

Brick, flint, stud and plaster, with tiled roof, having sitting room with cupboard; kitchen with copper sink, water and brick oven, two bedrooms and large closet and small garden abutting upon turret lane.

A dwelling house:

No. 13, Turret Lane, brick, stud, plastered and tiled, having;
Basement – Extensive cellarage

On the ground floor – Entrance hall, two sitting rooms, each 15ft by 14ft.. One with carved wood mantelpiece, kitchen with range and cupboards; workroom pantry, storeroom, scullery, with copper sink and water, coal store.

On the first floor – five bedrooms and bathroom

On the west side – Yard, with outhouse and garden, abutting upon turret lane, with fruit trees

The house is let to Mr, George Jasper Taylor

APPENDIX G OASIS REPORT FORM

Project Details

OASIS Number	oxfordar3- 508208		
Project Name	Late Anglo-Saxon, Medieval, Post-Medieval and Modern Remains at Lower Brook Street, Ipswich. Excavation Report.		
Start of Fieldwork	16/01/18	End of Fieldwork	02/08/18
Previous Work	Yes	Future Work	No

Project Reference Codes

Site Code	XSFLBSPUB	Planning App. No.	
HER Number	IPS 865	Related Numbers	

Prompt	Direction from Local Planning Authority – NPPF
Development Type	Mixed residential and commercial
Place in Planning Process	After full determination (eg. As a condition)

Techniques used (tick all that apply)

- | | | |
|--|---|---|
| <input type="checkbox"/> Field Observation (periodic visits) | <input type="checkbox"/> Part Excavation | <input type="checkbox"/> Salvage Record |
| <input type="checkbox"/> Full excavation (100%) | <input type="checkbox"/> Part Survey | <input type="checkbox"/> Systematic Field Walking |
| <input type="checkbox"/> Full Survey | <input type="checkbox"/> Recorded Observation | <input type="checkbox"/> Systematic Metal Detector Survey |
| <input type="checkbox"/> Geophysical Survey | <input type="checkbox"/> Remote Operated Vehicle Survey | <input type="checkbox"/> Test Pit Survey |
| <input checked="" type="checkbox"/> Open-Area Excavation | <input type="checkbox"/> Salvage Excavation | <input type="checkbox"/> Watching Brief |

Monument	Period	Object	Period
Pit	Early Medieval (410 to 1066)	Coin	Roman (43 to 410)
Ditch	Early Medieval (410 to 1066)	Coin	Post Medieval (1540 to 1901)
		Coin	Anglo-Saxon
Posthole	Early Medieval (410 to 1066)	metalwork	Early Medieval (410 to 1066)
Pit	Medieval (1066 to 1540)	metalwork	Medieval (1066 to 1540)
Pit	Post Medieval (1540 to 1901)	Pottery	Early Medieval (410 to 1066)
Wall	Post Medieval (1540 to 1901)	Pottery	Medieval (1066 to 1540)
Malt kiln	Post Medieval (1540 to 1901)	Pottery	Post Medieval (1540 to 1901)
Wall	Modern (1901 to present)	Pottery	Modern (1901 to present)
		Stone	Early Medieval (410 to 1066)
		CBM	Early Medieval (410 to 1066)
		CBM	Post Medieval (1540 to 1901)

		CBM	Modern (1901 to present)
		Glass	Medieval (1066 to 1540)
		Glass	Post Medieval (1540 to 1901)
		Worked bone	Early Medieval (410 to 1066)
		Worked wood	Early Medieval (410 to 1066)
		Human bone	Post Medieval (1540 to 1901)
		Animal bone	Early Medieval (410 to 1066)
		Animal bone	Medieval (1066 to 1540)
		Shell	Early Medieval (410 to 1066)
		Ecofacts	Early Medieval (410 to 1066)

Project Location

County	Suffolk	Address (including Postcode) Lower Brook Street Ipswich IP4 1AQ
District	Ipswich	
Parish	Ipswich	
HER office	Suffolk	
Size of Study Area	c.0.7ha	
National Grid Ref	TM 1642 4420	

Project Originators

Organisation	OA East
Project Brief Originator	Abby Antrobus (SCCAS)
Project Design Originator	Aileen Connor (OA East)
Project Manager	Aileen Connor (OA East)
Project Supervisor	James Fairbairn (OA East)

Project Archives

	Location	ID
Physical Archive (Finds)	Ipswich Museum	IPS 865
Digital Archive	Ipswich Museum	IPS 865
Paper Archive	Ipswich Museum	IPS 865

Physical Contents	Present?	Digital files associated with Finds	Paperwork associated with Finds
Animal Bones	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Ceramics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Environmental	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Glass	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Human Remains	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Industrial	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Leather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Metal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Stratigraphic		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Survey		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Textiles	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Wood	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Worked Bone	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Worked Stone/Lithic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Digital Media

Database	<input checked="" type="checkbox"/>
GIS	<input checked="" type="checkbox"/>
Geophysics	<input type="checkbox"/>
Images (Digital photos)	<input checked="" type="checkbox"/>
Illustrations (Figures/Plates)	<input checked="" type="checkbox"/>
Moving Image	<input type="checkbox"/>
Spreadsheets	<input checked="" type="checkbox"/>
Survey	<input checked="" type="checkbox"/>
Text	<input checked="" type="checkbox"/>
Virtual Reality	<input type="checkbox"/>

Paper Media

Aerial Photos	<input type="checkbox"/>
Context Sheets	<input checked="" type="checkbox"/>
Correspondence	<input type="checkbox"/>
Diary	<input checked="" type="checkbox"/>
Drawing	<input type="checkbox"/>
Manuscript	<input type="checkbox"/>
Map	<input checked="" type="checkbox"/>
Matrices	<input type="checkbox"/>
Microfiche	<input type="checkbox"/>
Miscellaneous	<input type="checkbox"/>
Research/Notes	<input checked="" type="checkbox"/>
Photos (negatives/prints/slides)	<input type="checkbox"/>
Plans	<input checked="" type="checkbox"/>
Report	<input checked="" type="checkbox"/>
Sections	<input checked="" type="checkbox"/>
Survey	<input checked="" type="checkbox"/>

Further Comments

APPENDIX H WRITTEN SCHEMES OF INVESTIGATION



Lower Brook Street Ipswich

Written Scheme of Investigation

Client: CgMs Consulting on behalf of clients

Prepared by [Aileen Connor]
Date prepared 15/11/2017
Version 001

Planning application no.
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1 GENERAL BACKGROUND

1.1 Circumstances of the project

1.1.1 It is proposed to redevelop the site at Lower Brook Street, Ipswich for mixed commercial and residential use. The site has been, and is currently subject to investigation to provide further information regarding the archaeological character, significance, extent and preservation on the site and the impacts that development might have upon them. To date these investigations have included a Desk Based Assessment (CgMs Consulting) and a two stage evaluation by test pitting (Oxford Archaeology East), a summary of the results to date is in Section 3 below.

1.1.2 Non-archaeological preparatory works included demolition of above ground buildings (complete), removal of slab (in progress) and remediation of contaminated ground (Phase 1A in progress).

1.1.3 Removal of slab is subject to archaeological monitoring as detailed in Oxford Archaeology Written Scheme of Investigation (23/03/2017). This phase of works is in progress.

1.1.4 Contaminated ground (asbestos) was identified during archaeological evaluation works, as a consequence the archaeological strategy has been modified to include monitoring of removal of contaminated ground and attendant modern below ground structures (up to 2m deep) on the east side (Phase 1A) of the site as detailed in Oxford Archaeology Written Scheme of Investigation V.3.1 (24/10/2017). This phase of works is in progress.

1.1.5 The ground remediation is being undertaken by a specialist demolition contractor and is taking place in compliance with health and safety, environmental and planning regulations concerning the remediation of contaminated ground, re-use of materials and limiting removal of materials from site. This remediation process involves extraction of contaminated materials, sorting materials and removing all contamination for safe off-site disposal followed by replacing cleaned materials into the ground from which it was extracted. This work is currently taking place under archaeological monitoring in those areas set out in WSI V3 (24/10/2017).

1.1.6 Due to the complexity of the remediation scheme it is proposed that archaeological mitigation will take place in tandem with and immediately following remediation works.

1.2 Purpose of document

1.2.1 The purpose of this document is to provide an overview of a proposed scheme of investigation to which more detailed statements will be added as the project progresses

1.2.2 This document sets out the broad framework for this process and will be supported by additional statements as further information about the nature of the contamination and the archaeological remains is available. This document and subsequent supporting documents will be agreed with the Consultant (CgMs Consulting) and the Archaeologist acting for the Local Planning Authority.

1.2.3 This document (WSI) has been prepared on behalf of the Client by Oxford Archaeology East.

1.2.4 This WSI conforms to the principles identified in Historic England's guidance documents *Management of Research Projects in the Historic Environment (MoRPHE)*, specifically the *MoRPHE Project Manager's Guide* and *Project Planning Note 3: Archaeological Excavation*.

1.2.5 All work will be conducted in accordance with the Chartered Institute for Archaeologists Code of Conduct and Standard and Guidance for Archaeological Excavation.

1.2.6 This WSI also incorporates the requirements of the EAA Standards for Field Archaeology in the East of England (Gurney 2003) and will be undertaken in accordance with SCCAS Requirements for trenched archaeological evaluation 2017.

1.3 Changes to this document

1.3.1 This document outlines the proposed framework strategy for mitigation and details methods of recording that will be used to enable the land-use history and character of the site to be understood and documented and project aims to be met. This document will be supported by additional statements as further information concerning the archaeological potential of the site and the remediation requirements are available.

2 THE GEOLOGY, TOPOGRAPHY AND OTHER FEATURES OF THE SITE

2.1.1 The site is approximately 0.69 hectare in area and is the location of a former printworks, associated car parking and outbuildings. The site is bordered by light industrial units to the west, a public car park to the southwest, residential properties to the north, offices to the east, and a church to the southwest.

2.1.2 The geology of the site comprises River Terrace Deposits (sand and gravel) overlying Newhaven Chalk Formation. (British Geological Survey online map viewer <http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html>).

2.1.3 The River Orwell is located 149m to the south.

2.1.4 The course of a former tributary to the Orwell is believed to run from north to south along the eastern side of the site.

2.1.5 Former development on the site includes buried tanks, services and buildings including disused cellars.

3 ARCHAEOLOGICAL BACKGROUND

3.1.1 A desk-based assessment (CgMs consulting) has identified that the site at Lower Brook Street is in an area of high archaeological potential. Key elements being its location within the Saxon town, its potential location within the precincts of St Peter's Priory, its proximity to one of the tributaries of the River Orwell and its potential for later post-medieval industry (particularly maltings).

3.1.2 Investigation by test pitting took place on the site in 2016 (ESF 23986) that comprised two test pits located within a car park to provide information regarding the potential survival and character of any archaeological remains. Test Pit 1 found a 19th century cellar with and in-situ asphalt floor located at a depth of 2.3m, the cellar had been subsequently backfilled with layers of brick and concrete rubble in the 1960s.

3.1.3 Test pit 2 uncovered natural sands and gravels at a depth of 2.3m below ground level. Above the natural was a two metre deep sequence of soil layers, probably resulting from dumping and cultivation from the late medieval period to the early 19th century. The soils contained pottery and tile ranging from the medieval to the early post-medieval period in date. Animal bones, oyster shells and charred seeds were found as well as a small number of human bone fragments. Evidence for one or more possible garden structures of post medieval date was also found. A 19th century brick wall is probably the remains of one of the industrial buildings that occupied the site during the 19th and 20th centuries.

3.1.4 In October 2017 a second phase of evaluation took place comprising a further five test pits located to assess the archaeological remains in those areas subject to proposed development and not known to be truncated by previous 20th century building works.

3.1.5 Test pit 3 was located to the south of the site and measured 5m x 4m and was excavated to a depth of 3.10m. Historic maps show a pond on or close to the location of the test pit (possibly associated with the former priory). The lower soil levels were consistent with backfilling or silting of a pond like feature. Pottery and metal objects that date to the medieval period were discovered in these lower fills. Truncated 19th century buildings were recorded in the upper levels of the test pit

3.1.6 Test pit 4 was located to the east of the site. The test pit measured 8m x 8m and was excavated to a depth of 2.8m Heavy truncation had occurred throughout the area of the test pit by the sinking of modern concrete stanchions into the natural geology. A small relatively undisturbed section of soil was recorded on the eastern side of the test pit. This showed grey silty soils that were probably a result of garden or agricultural use. It is known that buildings fronting onto Lower Brook street occupied this area and these soils would relate to associated plots.

3.1.7 Test pit 5 was located to the north-east of the site. This measured 8m x 8m and was excavated to a depth of 3.6m. The base of the test pit provided evidence of a north-south orientated water course or ditch. The alignment of this feature when compared with historic mapping suggest that this feature could be the brook associated with Brook Street. Early results of environmental analysis show the possibility of river lain silts that could only be associated with running water. The possible water course was sealed by materials that could have been imported or dumped in the area. The lower portions of the soil provided Saxon pottery and artefacts. One notable find was that of a lead charm etched with runic script. The upper levels of the test pit contained 19th century building foundations and remnants of garden or agricultural soils.

3.1.8 Test pit 6 was locate to the north of the site and was excavated to a depth of 3m. A small rectangular feature was cut into the natural sand and gravel geology at the base of the test pit. This is thought to possibly be a sunken featured building of Saxon date. Three wooden posts and remains of possible planking were recovered from the small depression. Animal bone and pottery was recovered

from the backfill of the feature. Saxon pottery was also recorded from layers sealing the feature. The upper levels of the test pit were truncated by basements of 18th or 19th century buildings. That occupied the area. The test pit was sealed by modern concrete.

3.1.9 Test pit 7 was located to the west of the site and in an area that was known to be occupied by buildings from at least the 17th century. The test pit measured 8m x 8m and was dug to a depth of 3m. Several small pit like features along with a small gully were located at the base of the test pit. These are thought to be of a Saxon date. Sealing these earlier features were a succession of construction and backfill layers. A cobbled road or yard was recorded to the eastern side of the test pit along with a possible building foundation to the west. Architectural stone was also recovered from the lower backfill layers. These pieces may relate to the priory buildings that stood close to the site. Maltings once stood in this area of the site and possible remains of these were noted to the eastern side of the test pit. These had been levelled and superseded by buildings of a 19th and 20th century date. It seems that the latter buildings constructed in the area of test pits 6 and 7 may have occupied a similar footprint to those seen on the 17th century maps.

4 AIMS AND OBJECTIVES

4.1 Aims of the excavation

4.1.1 The overall aim of the investigation is to preserve by record the archaeological evidence contained within the footprint of the development area, during remediation and prior to development. The investigations should investigate the origins, date, development, phasing, spatial organisation, character, function, status, and significance of the remains revealed, and place these in their local, regional and national archaeological context.

4.1.2 Based on the results of the evaluation to date the following aims and research questions are proposed, these will be refined and detailed in additional statements as further information is available:

- Contribute to research themes associated with Anglo-Saxon urbanization, industry and economy
- Contribute to research themes associated with the role of medieval religious establishments within an urban context
- Investigate the water management on the site and what influences urbanization and the proximity of the Priory had on water management
- Contribute to themes surrounding trade particularly in the Anglo-Saxon and medieval periods
- Contribute to an understanding of the influence of religion and other belief systems during the Anglo-Saxon and medieval periods
- Understand the character of the site in the immediate post-dissolution period and what role it played in the urban landscape - open space/urban food production/gentrification?
- Contribute to an understanding of the development of post-medieval industries, particularly related to the malting industry

4.1.3 During and following the completion of the fieldwork, these research aims will be revised and redefined or expanded as necessary, ensuring that they contribute to the goals of the Regional Research Frameworks relevant to this area.

4.2 Research frameworks

4.2.1 This excavation takes place within, and will contribute to the goals of Regional Research Frameworks relevant to this area:

- Research and Archaeology: A Framework for the Eastern counties: 1. Resource Assessment (Glazebrook 1997, East Anglian Archaeology Occasional Papers 3);
- Research and Archaeology: A Framework for the Eastern counties: 2. Research Agenda and Strategy (Brown & Glazebrook 2000, East Anglian Archaeology Occasional Papers 8)
- Research and Archaeology Revisited: A Revised Framework for the East of England (Medlycott 2011, East Anglian Archaeology Occasional Papers 24)

5 METHODS

5.1 Background research

5.1.1 To date the site has been subject to a Desk Based Assessment, a two phase evaluation and is currently undergoing archaeological monitoring. Further desk-based research should be undertaken with the aim of increasing understanding of the site formation processes and contributing to the research themes identified. This research should be led by the results of the archaeological works, relevant areas of research based on our current understanding would be:

- Map and documentary sources that can expand on the post-medieval development of the site for example documents related to the maltings or other buildings known to have existed (eg sales particulars, maps, trade directories,
- Documents related to individuals that lived on the site (eg census records, trade directories, sales particulars).
- Accessible earlier (medieval) documentary sources and records where available
- Excavation records for investigations on or in close proximity to the site

5.2 Event number

5.2.1 The site is currently being investigated under the event number IPS865 and this number will be used for the Archive unless otherwise. The site has been recorded under the site code XSFLBS16, it is proposed to continue to use this identifier, all records (context, sample, finds, drawings, photographs etc) will be assigned with unique identifying numbers within this code.

5.3 Excavation method

Excavation standards

5.3.1 The proposed archaeological excavation and analysis will be conducted in accordance with current best archaeological practice and the appropriate national and regional standards and guidelines.

5.3.2 All work will be conducted in accordance with the Chartered Institute for Archaeologists' *Code of Conduct* and *Standard and Guidance for Archaeological Excavation*.

5.3.3 All fieldwork will be undertaken in accordance with the requirements of the OA Field Manual (ed. D Wilkinson 1992), and the revised OA fieldwork manual (publication forthcoming). Further guidance is provided to all excavators in the form of the OA *Fieldwork Crib Sheets – a companion guide to the Fieldwork Manual*. These have been issued ahead of formal publication of the revised Fieldwork Manual.

5.3.4 The excavation will also adhere to the SCCAS *Requirements for Excavation* (2017).

Remediation

5.3.5 The original scope of works (as set out in WSI v3) was that removal of slab only with no below grubbing out would be undertaken under archaeological supervision. The discovery of contamination ground at the site has necessitated a more flexible approach in order that contaminated soils can be removed. The site is under the control of a Principal Contractor SHE French. A specialist groundworks crew are in the process of carrying out these remediation works on below ground deposits and obstructions within the contaminated area. Service plans have been checked to ensure that access

and groundworks can be conducted safely. The site is currently undergoing remediation and mitigation works may be required to take place in tandem with remediation works or following its completion. To this end an archaeologist will continue to monitor the remediation works and recording and investigation will take place as necessary in order to achieve the remediation and archaeological outcomes successfully.

5.3.6 The scope of mitigation will be constrained by the need to remediate contaminated soils. The remediation places the following constraints on the scheme:

5.3.7 All contaminated ground will need to be removed by a 360 excavator, where possible a flat bladed bucket will be used. If possible large obstructions will be left in situ, but where these can't be worked around (eg they are too close together, or in themselves constitute contamination or other health and safety risk) a tooth bucket may be necessary to remove them. Such obstructions within contaminated zones will be removed by the demolition team. An archaeologist will be present to supervise at all times to ensure excavation is carried out in a controlled manner and a recording of archaeological features is made. Below ground obstructions in uncontaminated ground will remain in situ until after archaeological mitigation has taken place. In those areas that are not subject to contamination remediation the methodology will be as stated in WSiv3, where archaeological horizons are encountered work will cease in those areas pending consultation with the SCC Archaeologist and the Consultant (CgMs).

5.3.8 Due to the limited space on site this work will take place in sections, arisings from each section will be stored and segregated on site, the contaminated materials will be removed for safe disposal. The remainder will be returned to the excavation before proceeding to the next section of remediation. In the west of the site (Phase 2 remediation) where evaluation trenches 6 and 7 have identified a sequence of archaeological deposits dating back to at least the Anglo Saxon period it is not proposed to return the clean arisings within the footprint of the proposed new building on completion of the remediation works. This is to allow archaeological mitigation in the form of excavation to be undertaken in this area. The extent of the archaeological excavation will be agreed between CgMs Consulting and the LPA Archaeologist prior to commencement (See section 5.3.11 below). However due to onsite constraints relating to site access in this area there may be a requirement to undertake the archaeological fieldwork in two additional phases to allow safe working across the remainder of the site. The logistics of spoil management and phasing will be decided upon on completion of Phase 1 and 2 remediation.

5.3.9 Oxford Archaeology will follow the Principal Contractors instructions with regard to all Health and Safety rules and will agree with them

- the location of entrance ways
- sites for welfare units
- soil storage areas
- refueling points for plant (if necessary), and the extent of any bunding required around fuel dumps
- access routes for plant and vehicles across the site

5.3.10 Oxford Archaeology will employ plant as necessary to assist with stripping in any areas where remediation works have not already exposed the appropriate archaeological strata.

Soil stripping post remediation

5.3.11 The post-remediation excavation areas will be assessed by the OA archaeologist, the Consultant and the LPA Archaeologist and the areas to be subject to archaeological excavation will be agreed with the consultant and the LPA Archaeologist prior to commencement. It is anticipated that

mitigation will include: any additional site remediation and preparation, services, construction impacts for the building, temporary construction impacts, SUDS and drainage, any other groundworks. The areas will be defined on a plan and will be submitted to the LPA Archaeologist and the consultant along with any additional statements as necessary for approval prior to commencement.

5.3.12 Service plans have been checked and Oxford Archaeology will consult with the Principal Contractor concerning location of any known services. Where excavation areas are stripped by plant sub-contracted by Oxford Archaeology, they will be scanned by a qualified and experienced operator, using a CAT and Genny with a valid calibration certificate.

5.3.13 All machine excavation will take place under the supervision of a suitably qualified and experienced archaeologist.

5.3.14 If necessary overburden will be stripped by a mechanical excavator to the depth of geological horizons, or to the upper interface of archaeological features or deposits, whichever is encountered first. A toothless ditching bucket will be used to strip bulk deposits of no archaeological value. Where bulk deposits are encountered that are assessed to have some archaeological value they will be subject to a sampling strategy to collect environmental and economic indicators prior to machine stripping. In this case a statement detailing the sampling strategy will be issued additional to this WSI. Where machine excavation is employed deposits will be excavated in spits not greater than 0.1m thick.

5.3.15 Where the archaeological levels are particularly deep, safe excavation procedures will be followed to ensure that areas are safe to enter. This may include shoring or stepping the sides of areas, as appropriate to the soil and site conditions. If flooding is encountered, work will cease and an appropriate de-watering strategy will be agreed with the Principal Contractor.

5.3.16 Spoil arising specifically from archaeological works will be stored on site in a location agreed with the Principal Contractor.

Hand excavation

5.3.17 The top of the first archaeological deposit will be cleared by machine, then cleaned off by hand. Exposed surfaces will be cleaned by trowel and hoe as necessary, in order to clarify located features and deposits.

5.3.18 All features will be investigated and recorded to provide an accurate assessment of their character and contents. All relationships between features or deposits will be investigated and recorded. Any natural subsoil surface revealed will be hand cleaned and examined for archaeological deposits and artefacts. Excavation will characterise the full archaeological sequence down to undisturbed natural deposits. Apparently natural features (such as tree throws) will be sampled sufficiently to establish their character.

5.3.19 All excavation of all archaeological deposits will be done by hand, unless agreed with the LPA Archaeologist that there will be no loss of evidence using a machine. The method of excavation will be decided by the senior project archaeologist.

5.3.20 There will be sufficient excavation to give clear evidence for the period, depth, and nature of each archaeological deposit. The following levels for excavating features will be used as a guide, unless others are agreed during the project.

Feature Class	Proportion
Layers/deposits/horizontal stratigraphy relating to domestic/industrial activity (e.g. hearths, floor surfaces)	100%

Specific layer classes (eg Dark Earth) sampling strategy/percentage to be agreed on a case by case basis	TBC
Post-built structures of pre-modern date	
Domestic ring-ditches or roundhouse gullies	100%
Pits associated with agricultural & other activities	50%
Linear features (ditches & gullies) associated with structural remains (minimum 1m slot excavated across width)	20%
Pre-modern linear features not associated with structural remains (minimum 1m slot excavated across width)	10%
Human burials, cremations & other deposits relating to funerary activity	100%

5.3.21 Every attempt will be made to investigate the full extent of deep features, this may entail sampling using a hand auger or boreholes, in order to assess their depth and structure. Any decisions regarding investigation of deep features will be in consultation with the Consultant and the LPA Archaeologist.

5.3.22 If exceptional or unexpected feature are uncovered, the Consultant and the LPA Archaeologist will be informed, and their advice sought on further excavation or preservation.

5.3.23 To aid retrieval of small items such as fish bones, artefacts etc. a strategy for sieving will be devised that will target medieval and earlier features in order to contribute towards project research aims.

5.4 Human remains

5.4.1 If human remains are encountered during excavation, the Client, Consultant, and the LPA Archaeologist will be informed immediately.

5.4.2 Human remains will be excavated in accordance with all appropriate legislation and Environmental Health regulations. Excavation will only take place after Oxford Archaeology has obtained a Ministry of Justice exhumation license.

5.5 Metal detecting and the Treasure Act

5.5.1 Metal detector searches will take place at all stages of the excavation by an experienced metal detector user. Excavated areas will be detected immediately before and after mechanical stripping. Both excavated areas and spoil heaps will be checked. To prevent losses from night-hawking, features will be metal detected immediately after stripping.

5.5.2 Metal detectors will not be set to discriminate against iron.

5.5.3 Artefacts will be removed and given a small find number. Labels will be placed on the location of each 'small find' and surveyed in with a GPS.

5.5.4 If finds are made that might constitute 'Treasure' under the definition of the Treasure Act (1996), they will, if possible, be excavated and removed to a safe place. Should it not be possible to remove the finds on the day they are found, suitable security will be arranged. Finds that are 'Treasure' will be reported to the landowner and County Coroner within 14 days, in accordance with the Act. The County Finds Liaison Officer from the Portable Antiquities Scheme will also be informed.

5.6 Recording of archaeological deposits and features

5.6.1 Records will comprise survey, photogrammetry, hand drawn, written, and photographic data.

Survey

5.6.2 Surveying will be done using a survey-grade differential GPS (Leica CS10/GS08 or Leica 1200) fitted with "smartnet" technology with an accuracy of 5mm horizontal and 10mm vertical.

5.6.3 The site grid will be accurately tied into the Ordnance Survey National Grid and located on the 1:2500 or 1:1250 map of the area. Elevations will be levelled to the Ordnance Datum.

Written records

5.6.4 A register of all trenches, features, photographs, survey levels, small finds, and human remains will be kept.

5.6.5 All features, layers and deposits will be issued with unique context numbers. Each feature will be individually documented on context sheets, and hand-drawn in section and plan. Written descriptions will be recorded on pro-forma sheets comprising factual data and interpretative elements.

5.6.6 Where stratified deposits are encountered, a Harris Matrix will be compiled during the course of the excavation.

Plans and sections

5.6.7 All plans will be prepared using a combination of GPS-based survey equipment and photogrammetry, complexity will be recorded by hand drawn plans (at a scale of 1:20) and digitally derived plans will be annotated and interpreted by an archaeologist on site.

5.6.8 Where hand-drawn plans are prepared these will be at a scale of 1:20. For very detailed plans of complex features a scale of 1:10 will be used

5.6.9 Long sections showing layers will be drawn at 1:50. Sections of features or short lengths of trenches will be drawn at 1:20. All section levels will be tied in to Ordnance Datum.

5.6.10 All site drawings will include the following information: site name, site code, scale, plan or section number, orientation, date and the name or initials of the archaeologist who prepared the drawing.

Photogrammetric Survey

5.6.11 Photogrammetric recording is considered to be a key methodology for this site, particularly for the recording of solid built structures (brick or stone walls, preserved timber structures, brick or tiled floors). Photogrammetry is a key methodology for creating a record of archaeological features found within the remediation zones where rapid recording is required due to the presence of contaminated materials.

5.6.12 Photogrammetry requires that a series of high resolution (minimum 5mb) digital photographs are captured and contain a series of reference "targets" that can be precisely located using Survey grade GPS. Photographs are then processed using Agisoft Photosoft (Professional Edition) software to create geo-referenced and measurable photogrammetric scale models.

Photographic record

5.6.13 Photographs will include both general site shots and photographs of specific features. Every feature will be photographed at least once. Photographs will include a scale, north arrow, site code, and feature number (where relevant), unless they are to be used in publications. The photograph register will record these details, and photograph numbers will be listed on corresponding context sheets. Photographs will comprise high resolution digital and 35mm slr monochrome.

5.7 Post-excavation processing

5.7.1 Processing will take place in tandem with excavation, and advice will be sought from relevant specialists on key artefact types. The Project Manager and fieldwork project officer will be given feedback to enable them to develop excavation strategies during fieldwork.

5.7.2 Any finds requiring specialist treatment and conservation will be sent for appropriate treatment.

5.7.3 Finds will be marked with context numbers, site code or accession number, as detailed in the requirements of Colchester and Ipswich Museum. The details of the requirements may change due to ongoing discussions between SCC and CIMS. The SCC archaeologist will be consulted prior to any archive preparation.

5.8 Finds recovery

Standards for finds handling

5.8.1 Finds will be exposed, lifted, cleaned, conserved, marked, bagged, and boxed in line with the standards in:

United Kingdom Institute for Conservators (2012) *Conservation Guidelines No. 2*

Watkinson & Neal (1988) *First Aid for Finds*

Chartered Institute for Archaeologists (2014) *Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials*

English Heritage (1995) *A Strategy for the Care and Investigation of Finds*.

5.8.2 Where finds require conservation, this will be done in accordance with the guidelines of the Institute for Conservation (ICON),

Procedures for finds handling

5.8.3 At the start of work, a finds supervisor will be appointed to oversee the collection, processing, cataloguing, and specialist advice on all artefacts collected.

5.8.4 Artefacts will be collected by hand and metal detector. Excavation areas and spoil will be scanned visually and with a metal detector to aid recovery of artefacts. All finds will be bagged and labelled according to the individual deposit from which they were recovered, ready for later cleaning and analysis. 'Special/small finds' may be located more accurately by GPS if appropriate.

5.8.5 Processing will take place in tandem with excavation, and advice will be sought from relevant specialists on key artefact types. (See the Appendix for a list of specialists.)

5.8.6 All artefacts recovered from excavated features will be retained for post-excavation processing and assessment, except:

- those which are obviously modern in date and not relevant to the project aims
- where very large volumes are present (e.g ceramic building material, architectural stone, processing waste)

5.8.7 Where artefacts are not removed from site, a strategy will be employed to ensure a sufficient sample is retained, in order to characterise the date and function of the features they were excavated from. A record will be kept of the quantity and nature of artefacts which are not removed from site.

5.8.8 Any finds requiring specialist treatment and conservation will be sent for appropriate treatment.

5.9 Sampling for environmental remains and small artefact retrieval

Standards for environmental sampling and processing

5.9.1 Paleoenvironmental remains will be sampled and processed in accordance with the guidelines set out in:

English Heritage (2011, 2nd edition) *Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation*.

Association for Environmental Archaeology (1995) *Environmental archaeology and archaeological evaluations. Recommendations concerning the environmental archaeology component of archaeological evaluations in England*. Working Papers of the Association for Environmental Archaeology 2. York: Association for Environmental Archaeology.

Dobney, K., Hall, A., Kenward, H. & Milles, A. (1992) *A working classification of sample types for environmental archaeology*. *Circaea* 9.1: 24-26

Murphy, P.L. & Wiltshire, P.E.J. (1994) *A guide to sampling archaeological deposits for environmental analysis*.

Procedures for sampling and processing

5.9.2 Bulk samples (up to 40 litres or 100% of context) will be taken from a range of site features and deposits to target the recovery of plant remains (charcoal and macrobotanicals) fish, bird, small mammal and amphibian bone and small artefacts. Environmental samples will be taken from well-stratified, datable deposits. Samples will be labelled with the site code, context number, and sample number.

5.9.3 If appropriate, monolith samples of waterlogged deposits and buried soils will be taken for pollen analysis, soil micro-morphological, or sedimentological analysis. Where consistent with the aims of the evaluation, samples will be taken from deposits, artefacts, and ecofacts for scientific (absolute) dating.

5.9.4 The evaluation has identified the potential for waterlogged remains, charred remains, fish bones and diatoms on this site. There is a high potential for the recovery of remains that will aid in understanding industry, economy and environment particularly for the Anglo-Saxon and earlier medieval periods and for the later post medieval period.

5.9.5 Where features containing very small artefacts – such as micro-debitage and hammerscale – are identified, bulk samples will be taken (up to 40 litres or 100% of context).

5.9.6 During the excavation typically, 10 litres of each bulk sample will be processed using tank flotation, in order to provide feedback to the excavator to inform an ongoing sampling strategy. Waterlogged samples will be wet sieved and stored in cool or wet conditions as appropriate.

5.9.7 Where practical, waterlogged wood specimens will be recorded in detail on site, in situ. When removed, they will be cleaned and photographed, and stored in wet cool conditions for assessment by a suitably qualified specialist (see the Appendix).

5.9.8 The project team will consult Historic England's Scientific Advisor on environmental sampling and dating where necessary.

6 OUTREACH ACTIVITIES

6.1.1 The site is currently unsuitable for public access, after remediation is complete it may be possible to accommodate controlled visits. A statement detailing proposed outreach activities will be issued supplementary to this WSI during the course of the project. With agreement from the Consultant and Client Outreach activities may include one or more of the following:

- Controlled public open day
- Controlled visits by invitation
- On site display board(s)
- Public talks to local societies

7 REPORTING AND ARCHIVING

7.1 Post-excavation Assessment Report

7.1.1 Post-excavation analysis and reporting will follow guidance in English Heritage's (2009) Management of Research Projects in the Historic Environment.

7.1.2 Post-excavation reporting will include:

- site summaries as required
- A post-excavation assessment report and updated research design
- Analysis and publication if appropriate

7.2 Contents of the Assessment Report

7.2.1 The post-excavation assessment report will provide an objective account of the archaeological investigation and its findings. It will contain a comprehensive, illustrated assessment of the results and consider the potential for further analysis and publication in light of relevant research issues within regional and national research agendas.

7.2.2 The report will include:

- a title page detailing site address, site code and accession number, NGR, author/originating body, client's name and address
- full list of contents
- a non-technical summary of the findings
- a description of the geology and topography of the area
- a description of the methodologies used
- a description of the findings and assessment of the stratigraphic evidence
- tables summarising features and artefacts
- site location plans, and plans of each area excavated showing the archaeological features found
- selected sections of excavated features
- specialist assessment reports on artefacts and environmental finds
- relevant photographs of features and the site
- a discussion of the relationship between findings on the site and other archaeological information held in the Suffolk Historic Environment Record
- an updated project design linked to relevant local and regional research issues, including a programme of work and timetable for further analysis and publication (where appropriate)
- a bibliography of all reference material
- the OASIS reference and summary form.

7.3 Analysis and Publication

7.3.1 . A summary report will be prepared for the Proceedings of the Suffolk Institute of Archaeology & History

7.3.2 In consultation with the Consultant and the LPA Archaeologist and following the production of the post-excavation assessment report, a post-excavation analysis report and/or publication will be produced.

7.3.3 The content of the post-excavation analysis report will be detailed in the updated project design contained within the post-excavation assessment report.

7.3.4 The scope, format and venue of any publication will be proportionate to the significance of the results.

7.3.5 A timetable for the analysis and publication will be contained within the post-excavation assessment report.

7.3.6 The PXA will also consider the potential for public display and outreach opportunities.

7.4 Draft and final reports

7.4.1 A draft copy of the post-excavation reports will be supplied to the Consultant and the LPA Archaeologist for comment.

7.4.2 Following approval of the report, one printed copy and one digital copy (PDF) will be presented to the Suffolk Historic Environment Record.

7.5 OASIS

7.5.1 A digital copy of the approved report will be uploaded to the OASIS database.

7.5.2 A copy of the OASIS Data Collection Form will be included in the report.

8 ARCHIVING

Archive standards

8.1.1 The site archive will conform to the requirements Appendix 1 of the Historic England's (2015) *Management of Research Projects in the Historic Environment* (MoRPHE), and the requirements of the Suffolk County Council Stores. As the repository for Ipswich archives is currently under discussion it is not yet known where the Archive will be deposited. In the event that it is not deposited with the SCC Stores a copy of the documentary archive will be lodged with SCC.

8.1.2 The preparation of the archive will follow the guidelines contained in *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (United Kingdom Institute for Conservation, 1990), *Standards in the Museum care of Archaeological Collections* (Museums and Galleries Commission 1992), and *Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation* (Brown 2007).

Archive contents

8.1.3 The archive will be quantified, ordered, and indexed. It will include:

- artefacts
- ecofacts
- project documentation – including plans, section drawings, context sheets, registers, and specialist reports
- photographs (digital photographs will be stored on CD-ROM, and colour printouts made of key features)
- a printed copy of the Written Brief
- a printed copy of the WSI
- a printed copy of all reports
- a printed copy of the OASIS form.

8.1.4 It is Oxford Archaeology Ltd's policy, in line with accepted practice, to keep site archives (paper and artefactual) together wherever possible.

Transfer of ownership

8.1.5 The archaeological material and paper archive produced from this investigation will be held in storage by OA East who will seek to transfer the complete project archive to the County Store, in order to facilitate future study and ensure long-term public access to the archive. Where the landowner wishes to retain items recovered during excavation, all selected artefacts will be fully drawn and photographed, identified, analysed, documented and conserved in order to create a comprehensive catalogue of items to be kept by the landowner before the remainder of the archive can be deposited in the County Store. A written transfer of ownership document will be forwarded to the LPA Archaeologist before the archive is deposited. In the unlikely event that artefacts of significant monetary value are discovered, and if they are not subject to Treasure Act legislation, separate ownership arrangements may be negotiated following the creation of a comprehensive illustrated catalogue, as described above.

9 TIMETABLE

9.1.1 Monitoring of remediation works will be based on the demolition contractors timetable, expected to be in the region of 3 to 6 weeks. An archaeologist will be in constant attendance (except when below ground works have ceased) and a team of archaeologists will be on stand-by to ensure a timely response as and when archaeological features are uncovered.

9.1.2 A detailed timetable of mitigation post-remediation will be supplied as a supplement to this WSI prior to commencement of that phase of works.

STAFFING AND SUPPORT

9.2 Fieldwork

9.2.1 The fieldwork team will be made up of the following staff:

1 x Project Manager (supervisory only, not based on site)

1 x Project Officer/Supervisor (full-time)

Site Assistants (as required)

1 x Archaeological Surveyor

1 x photogrammetry surveyor

1 x Finds Assistant

1 x Environmental Assistant

9.2.2 The Project Manager will be Aileen Connor and the Project Officer responsible for work on site will be James Fairbairn. The Supervisor will be Lindsey Kemp.

9.2.3 All Site Assistants will be drawn from a pool of qualified and experienced staff. Oxford Archaeology East will not employ volunteer, amateur, or student staff, whether paid or unpaid, except as an addition to the team stated above.

9.3 Post-excavation processing

9.3.1 The site is likely to produce Anglo-Saxon, medieval and post-medieval remains, specialists will be drawn from the list in the appendix as required in addition to:

9.3.2 Pottery will be assessed by Sue Anderson.

9.3.3 Environmental analysis will be carried out by OA East staff, in consultation with the OA Environmental Department in Oxford. The results will be reported to Historic England's Regional Scientific Advisor. Environmental analysis will be undertaken by Rachel Fosberry (charred plant macrofossils, plant macrofossils), Liz Stafford (land molluscs), and Denise Druce and Mairead Rutherford (pollen analysis). Fran Green will provide geo-archaeological advice

9.3.4 Faunal remains will be examined by Hayley Foster.

9.3.5 Conservation will be undertaken by Ipswich and Colchester Museums and will be undertaken in accordance with guidelines issued by the Institute for Conservation (ICON).

9.3.6 In the event that OA's in-house specialists are unable to undertake the work within the time constraints of the project, or if other remains are found, specialists from the list in the Appendix will be approached to carry out analysis.

10 OTHER MATTERS

10.1 Monitoring

10.1.1 The Consultant and the LPA Archaeologist will be informed appropriately of dates and arrangements to allow for adequate monitoring of the works.

10.1.2 During the excavation, representatives of the client, Oxford Archaeology East and the LPA Archaeologist will meet on site to monitor the excavations, discuss progress and findings to date, and excavation strategies to be followed.

10.2 Insurance

10.2.1 OA East is covered by Public and Employer's Liability Insurance. The underwriting company is Lloyds Underwriters, policy number CC004337. Details of the policy can be supplied on request to the Oxford Archaeology East office.

10.3 Chartered Institute for Archaeologists

10.3.1 Oxford Archaeology is a Registered Organisation with the Chartered Institute for Archaeologists (CIfA), and is bound by CIfA By-Laws, Standards, and Policy.

10.4 Services, Public Rights of Way, Tree Preservation Orders etc.

10.4.1 The client will inform the project manager of any live or disused cables, gas pipes, water pipes or other services that may be affected by the proposed excavations before the commencement of fieldwork. Hidden cables/services should be clearly identified and marked where necessary. If there are overhead cables on the site or in the approachways, a survey must be completed by the relevant authority before plant is taken onto site.

10.4.2 The client will likewise inform the project manager of any public rights of way or permissive paths on or near the land which might affect or be affected by the work.

10.4.3 The client will inform the Project Manager if the site is a Scheduled Ancient Monument, Site of Special Scientific Interest (SSSI), or any other type of designated site. The client will also inform the project manager of any trees subject to Tree Preservation Orders, protected hedgerows, protected wildlife, nesting birds, or areas of ecological significance within the site or on its boundaries.

10.5 Site Security

10.5.1 Unless previously agreed with the Project Manager in writing, this specification and any associated statement of costs is based on the assumption that the site will be sufficiently secure for archaeological work to commence. All security requirements, including fencing, padlocks for gates etc. are the responsibility of the client.

10.6 Access

10.6.1 The client will secure access to the site for archaeological personnel and plant, and obtain the necessary permissions from owners and tenants to place a mobile office and portable toilet on or near to the site. Any costs incurred to secure access, or incurred as a result of withholding of access will

not be Oxford Archaeology East's responsibility. The costs of any delays as a result of withheld access will be passed on to the client in addition to the project costs already specified.

10.7 Site Preparation

10.7.1 The client is responsible for clearing the site and preparing it so as to allow archaeological work to take place without further preparatory works, and any cost statement accompanying or associated with this specification is offered on this basis. Unless previously agreed in writing, the costs of any preparatory work required, including tree felling and removal, scrub or undergrowth clearance, removal of concrete or hard standing, demolition of buildings or sheds, or removal of excessive overburden, refuse or dumped material, will be charged to the client, in addition to any costs for archaeological evaluation already agreed.

10.8 Site offices and welfare

10.8.1 All site facilities – including welfare facilities, tool stores, mess huts, and site offices – will be positioned to minimise disruption to other site users, and to minimise impact on the environment (including buried archaeology).

10.9 Health and Safety, Risk Assessments

10.9.1 A risk assessment and method statement (RAMS) covering all activities to be carried out during the lifetime of the project will be prepared before work commences.

10.9.2 The risk assessment will conform to the requirements of health and safety legislation and regulations, and will draw on OA East's activity-specific risk assessment literature.

10.9.3 All aspects of the project, both in the field and in the office will be conducted according to OA East's Health and Safety Policy, Oxford Archaeology Ltd's Health and Safety Policy, and *Health and Safety in Field Archaeology* (J.L. Allen and A. St John-Holt, 1997). A copy of Oxford Archaeology's Health and Safety Policy can be supplied on request.

11 APPENDIX: CONSULTANT SPECIALISTS

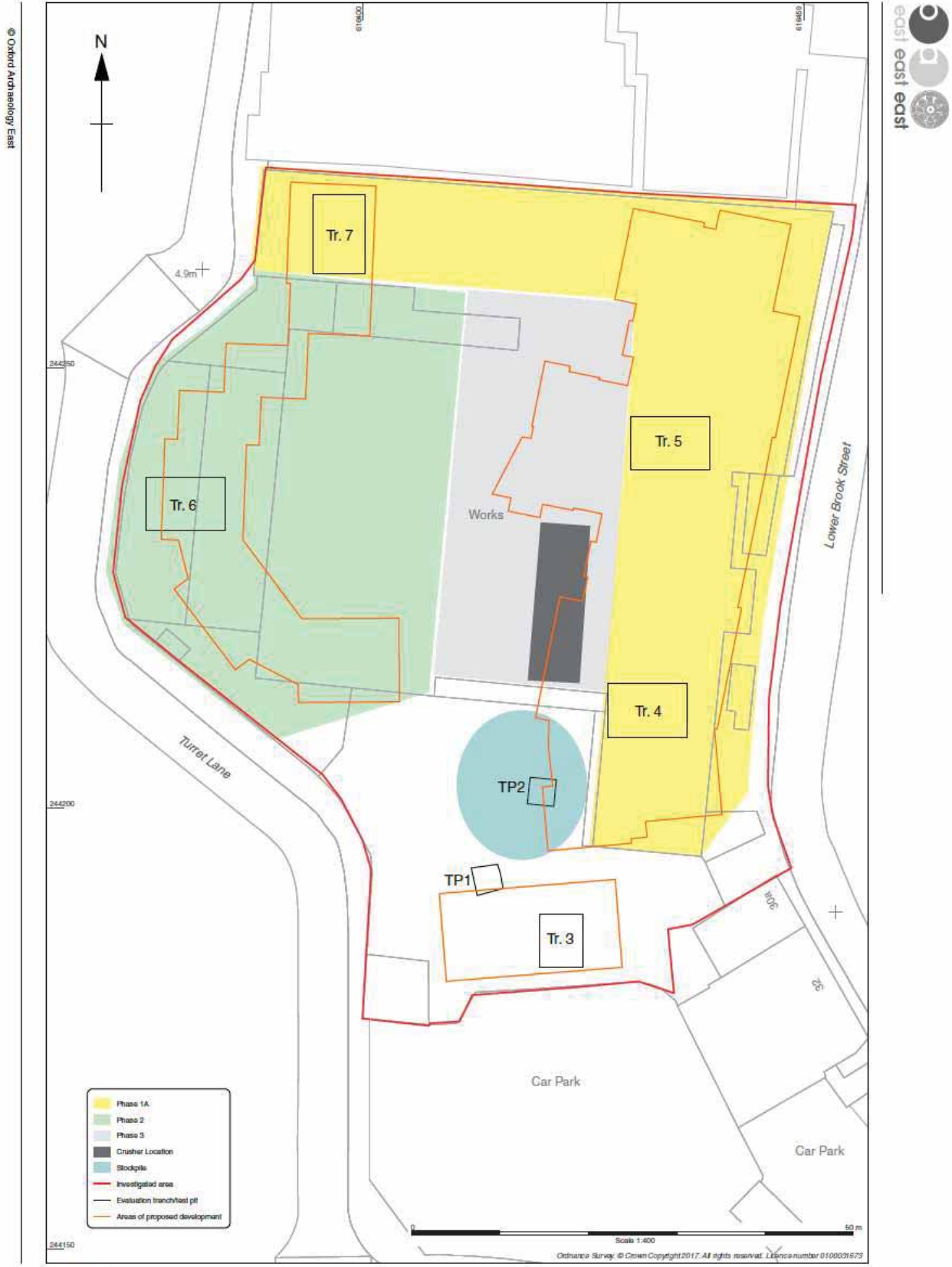
NAME	SPECIALISM	ORGANISATION
Allen, Leigh	Worked bone, CBM, medieval metalwork	Oxford Archaeology
Allen, Martin	Medieval coins	Fitzwilliam Museum
Anderson, Sue	HSR, pottery and CBM	Freelance
Bayliss, Alex	C14	English Heritage
Biddulph, Edward	Roman pottery	Oxford Archaeology
Billington, Laurence	Lithics	Oxford Archaeology
Bishop, Barry	Lithics	Freelance
Blinkhorn, Paul	Iron Age, Anglo-Saxon and medieval pottery	Freelance
Boardman, Sheila	Plant macrofossils, charcoal	Oxford Archaeology
Bonsall, Sandra	Plant macrofossils; pollen preparations	Oxford Archaeology
Booth, Paul	Roman pottery and coins	Oxford Archaeology
Boreham, Steve	Pollen and soils/ geology	Cambridge University
Brown, Lisa	Prehistoric pottery	Oxford Archaeology
Cane, Jon	illustration & reconstruction artist	Freelance
Champness, Carl	Snails, geoarchaeology	Oxford Archaeology
Cotter, John	Medieval/post-Medieval finds, pottery, CBM	Oxford Archaeology
Crummy, Nina	Small Find Assemblages	Freelance
Cowgill, Jane	Slag/metalworking residues	Freelance
Darraah, Richard	Wood technology	Freelance
Dickson, Anthony	Worked Flint	Oxford Archaeology
Dodwell, Natasha	Osteologist	Oxford Archaeologist
Donnelly, Mike	Flint	Oxford Archaeology
Doonan, Roger	Slags, metallurgy	
Druce, Denise	Pollen, charred plants, charcoal/wood identification, sediment coring and interpretation	Oxford Archaeology
Drury, Paul	CBM (specialised)	Freelance
Evans, Jerry	Roman pottery	Freelance
Fletcher, Carole	Medieval pot, glass, small finds	Oxford Archaeology
Fosberry, Rachel	Charred plant remains	Oxford Archaeology
Foster, Hayley	Zooarchaeologist	Oxford Archaeology
Fryer, Val	Molluscs/environmental	Freelance
Gale, Rowena	Charcoal ID	Freelance
Geake, Helen	Small finds	Freelance
Gleed-Owen, Chris	Herpetologist	
Goffin, Richenda	Post-Roman pottery, building materials, painted wall plaster	Suffolk CC
Hamilton-Dyer, Sheila	Fish and small animal bones	

NAME	SPECIALISM	ORGANISATION
Howard-Davis, Chris	Small finds, Mesolithic flint, RB coarse pottery, leather, wooden objects and wood technology;	Oxford Archaeology
Hunter, Kath	Archaeobotany (charred, waterlogged and mineralised plant remains)	Oxford Archaeology
Jones, Jenny	Conservation	ASUD, Durham University
King, David	Window glass & lead	
Locker, Alison	Fishbone	
Loe, Louise	Osteologist	Oxford Archaeology
Lyons, Alice	Late Iron Age/Roman pottery	Oxford Archaeology
Macaulay, Stephen	Roman pottery	Oxford Archaeology
Masters, Pete	geophysics	Cranfield University
Middleton, Paul	Phosphates/garden history	Peterborough Regional College
Mould, Quita	Ironwork, leather	
Nicholson, Rebecca	Fish and small mammal and bird bones, shell	Oxford Archaeology
Palmer, Rog	Aerial photographs	Air Photo Services
Percival, Sarah	Prehistoric pottery, quern stones	Freelance
Poole, Cynthia	Multi-period finds, CBM, fired clay	Oxford Archaeology
Popescu, Adrian	Roman coins	Fitzwilliam Museum
Rackham, James	Faunal and plant remains, can arrange pollen analysis	
Riddler, Ian	Anglo-Saxon bone objects & related artefact types	Freelance
Robinson, Mark	Insects	
Rowland, Steve	Faunal and human bone	Oxford Archaeology
Rutherford, Mairead	Pollen, non-pollen palynomorphs, dinoflagellate cysts, diatoms	Oxford Archaeology
Samuels, Mark	Architectural stonework	Freelance
Scaife, Rob	Pollen	
Scott, Ian	Roman, Medieval, post-medieval finds, metalwork, glass	Oxford Archaeology
Sealey, Paul	Iron Age pottery	Freelance
Shafrey, Ruth	Worked stone, cbm	Oxford Archaeology
Smith, Ian	Animal Bone	Oxford Archaeology
Spoerry, Paul	Medieval pottery	Oxford Archaeology
Stafford, Liz	Snails	Oxford Archaeology
Strid, Lena	Animal bone	Oxford Archaeology
Tyers, Ian	Dendrochronology	
Ui Choileain, Zoe	Human bone	Oxford Archaeology
Vickers, Kim	Insects	Sheffield University

NAME	SPECIALISM	ORGANISATION
Wadeson, Stephen	Samian, Roman glass	Oxford Archaeology
Walker, Helen	Medieval Pottery in the Essex area	
Way, Twigs	Medieval landscape and garden history	Freelance
Webb, Helen	Osteologist	Oxford Archaeology
Willis, Steve	Iron Age pottery	
Young, Jane	Medieval Pottery in the Lincolnshire area	
Zant, John	Coins	Oxford Archaeology

Radiocarbon dating is normally undertaken for Oxford Archaeology East by SUERC and by the Oxford University Accelerator Laboratory.

Geophysical prospection is normally undertaken by Magnitude Surveys Ltd.



Trench plan



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Lower Brook Street Ipswich

Written Scheme of Investigation Supplementary Method Statement West Building footprint

Client: CgMs Consulting on behalf of clients

Prepared by [Aileen Connor]
Date prepared 6/12/17
Version 001

Planning application no.
Site code XSFLBS16
Project number 19123A
Project type mitigation
Event number



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1 GENERAL BACKGROUND

1.1 Purpose of this document

1.1.1 The purpose of this document is to provide a method statement with respect to excavation of the proposed western building footprint at Lower Brook Street Ipswich (see attached plan).

1.1.2 This document is supplementary to the broad framework set out in an approved WSI for the scheme dated 29/11/2017. This document will be agreed with the Consultant (CgMs Consulting) and the Archaeologist acting for the Local Planning Authority.

1.1.3 This document (method statement) has been prepared on behalf of the Client by Oxford Archaeology East.

1.1.4 This document conforms to the principles identified in Historic England's guidance documents *Management of Research Projects in the Historic Environment (MoRPHE)*, specifically the MoRPHE *Project Manager's Guide* and *Project Planning Note 3: Archaeological Excavation*.

1.1.5 All work will be conducted in accordance with the Chartered Institute for Archaeologists Code of Conduct and Standard and Guidance for Archaeological Excavation.

1.1.6 This method statement also incorporates the requirements of the EAA Standards for Field Archaeology in the East of England (Gurney 2003) and will be undertaken in accordance with SCCAS Requirements for trenched archaeological evaluation 2017.

2 THE GEOLOGY, TOPOGRAPHY AND OTHER FEATURES OF THE WEST EXCAVATION AREA

2.1.1 This document deals specifically with the western proposed building footprint. This area was most recently built on by part of a former printworks and associated outbuildings.

2.1.2 The western building footprint is approximately 700 sq metres in area.

2.1.3 The earliest mapped evidence (Speed 1610) shows Turret Lane to the immediate west of the proposed excavation area with a row of domestic houses fronting the lane. By 1675 (Ogilby) the domestic houses appear to have largely been demolished and replaced by a T-shaped building that may be the malthouses shown on later maps. At this time Turret Lane is shown with a sharp dog-leg around the south-western edge of the proposed excavation area. Pennington's map (1778) shows the owner of this part of the site to be Mr Dobson and there are now three large building blocks shown, a Y-shaped block to the south and two rectangular blocks either side of a yard to the north. This layout continues (with additions to the east) on the 1867 (White) map and the 1884 (1st Edition Ordnance Survey) map on which the buildings are labelled as Malthouses. The 1902 Ordnance Survey map suggests little change but by 1927 a number of buildings have been extended and/or replaced, or demolished, particularly on the east and south sides. Turret Lane was altered to its modern appearance (widened and the sharp dog-legs smoothed out) sometime between 1938 and 1950.

2.1.4 A furniture factory occupied much of the north part of the entire development area including parts of the former malthouses in the 1950s and was altered and expanded for the former printworks in the 1960s.

2.1.5 The geology of the site comprises River Terrace Deposits (sand and gravel) overlying Newhaven Chalk Formation. (British Geological Survey online map viewer <http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html>).

2.1.6 The River Orwell is located 149m to the south.

2.1.7 The course of a former tributary to the Orwell is believed to run from north to south along the eastern side of the site.

2.1.8 The modern ground level is at 4.9m OD on Turret Lane, at 4.25m at the top of TP 6 and 4.62m at the top of TP7. Saxon deposits were encountered below 0.25m OD in TP7, Medieval deposits were encountered at below 2.22m OD in TP6, early post-medieval deposits were encountered below c. 3.8m OD in TP6.

3 ARCHAEOLOGICAL BACKGROUND

3.1.1 The archaeological background for the whole site has been dealt with in detail in a desk-based assessment (CgMs consulting) and summarized in the Written Scheme of Investigation Framework (29/11/2017) and will not be repeated here other than to note a number of points specific to the proposed excavation area:

3.1.2 Two test pits were excavated within the proposed building footprint in order to evaluate its potential:

3.1.3 Test pit 6 was located to the north of the site and was excavated to a depth of 3m. A small rectangular feature was cut into the natural sand and gravel geology at the base of the test pit. This is thought to possibly be a sunken featured building of Saxon date. Three wooden posts and remains of possible planking were recovered from the small depression. Animal bone and pottery was recovered from the backfill of the feature. Saxon pottery was also recorded from layers sealing the feature. The upper levels of the test pit were truncated by basements of 18th or 19th century buildings. That occupied the area. The test pit was sealed by modern concrete.

3.1.4 Test pit 7 was located to the west of the site and in an area that was known to be occupied by buildings from at least the 17th century. The test pit measured 8m x 8m and was dug to a depth of 3m. Several small pit like features along with a small gully were located at the base of the test pit. These are thought to be of a Saxon date. Sealing these earlier features were a succession of construction and backfill layers. A cobbled road or yard was recorded to the eastern side of the test pit along with a possible building foundation to the west. Architectural stone was also recovered from the lower backfill layers. These pieces may relate to the priory buildings that stood close to the site. Maltings once stood in this area of the site and possible remains of these were noted to the eastern side of the test pit. These had been levelled and superseded by buildings of a 19th and 20th century date. It seems that the latter buildings constructed in the area of test pits 6 and 7 may have occupied a similar footprint to those seen on the 17th century maps.

3.1.5 Recent monitoring during remediation has found further evidence for a cobbled surface to the east of Test Pit 7, but outside the proposed building footprint.

3.1.6 A square wood lined well-like feature was discovered in the 1960s located between Trenches 6 and 7 and potentially within the footprint of the proposed western building.

4 AIMS AND OBJECTIVES

4.1 Aims of the excavation

4.1.1 The aims of the excavation have been set out in the Written Scheme of Investigation as follows:

- to preserve by record the archaeological evidence contained within the footprint of the development area, during remediation and prior to development
- to investigate the origins, date, development, phasing, spatial organisation, character, function, status, and significance of the remains revealed
- to place the remains in their local, regional and national archaeological context.

4.1.2 Based on the results of the evaluation to date the following aims and research questions are proposed, these will be refined and detailed in additional statements as further information is available:

- Contribute to research themes associated with Anglo-Saxon urbanization, industry and economy
- Contribute to research themes associated with the role of medieval religious establishments within an urban context
- Investigate the water management on the site and what influences urbanization and the proximity of the Priory had on water management
- Contribute to themes surrounding trade particularly in the Anglo-Saxon and medieval periods
- Contribute to an understanding of the influence of religion and other belief systems during the Anglo-Saxon and medieval periods
- Understand the character of the site in the immediate post-dissolution period and what role it played in the urban landscape - open space/urban food production/gentrification?
- Contribute to an understanding of the development of post-medieval industries, particularly related to the malting industry

4.1.3 During and following the completion of the fieldwork, these research aims will be revised and redefined or expanded as necessary, ensuring that they contribute to the goals of the Regional Research Frameworks relevant to this area.

4.2 Research frameworks

4.2.1 This excavation takes place within, and will contribute to the goals of Regional Research Frameworks relevant to this area:

- Research and Archaeology: A Framework for the Eastern counties: 1. Resource Assessment (Glazebrook 1997, East Anglian Archaeology Occasional Papers 3);
- Research and Archaeology: A Framework for the Eastern counties: 2. Research Agenda and Strategy (Brown & Glazebrook 2000, East Anglian Archaeology Occasional Papers 8)
- Research and Archaeology Revisited: A Revised Framework for the East of England (Medlycott 2011, East Anglian Archaeology Occasional Papers 24)

5 METHODS

5.1 Overview

5.1.1 The Written Scheme of Investigation (29/11/2017) sets out the methods to be used on this site. The methods below are largely drawn from the WSI with clarifications highlighted where they relate specifically to the western building footprint.

5.2 Background research

5.2.1 To date the site has been subject to a Desk Based Assessment, a two phase evaluation and is currently undergoing archaeological monitoring. Further desk-based research should be undertaken with the aim of increasing understanding of the site formation processes and contributing to the research themes identified. This research should be led by the results of the archaeological works, relevant areas of research based on our current understanding would be:

- Map and documentary sources that can expand on the post-medieval development of the site for example documents related to the maltings or other buildings known to have existed (eg sales particulars, maps, trade directories,
- Documents related to individuals that lived on the site (eg census records, trade directories, sales particulars).
- Accessible earlier (medieval) documentary sources and records where available
- Excavation records for investigations on or in close proximity to the site

5.3 Event number

5.3.1 The site is currently being investigated under the event number IPS865 and this number will be used for the Archive. The site has been recorded under the site code XSFLBS16, it is proposed to continue to use this identifier, all records (context, sample, finds, drawings, photographs etc) will be assigned with unique identifying numbers within this code.

5.4 Excavation method

Excavation standards

5.4.1 The proposed archaeological excavation and analysis will be conducted in accordance with current best archaeological practice and the appropriate national and regional standards and guidelines.

5.4.2 All work will be conducted in accordance with the Chartered Institute for Archaeologists' *Code of Conduct and Standard and Guidance for Archaeological Excavation*.

5.4.3 All fieldwork will be undertaken in accordance with the requirements of the OA Field Manual (ed. D Wilkinson 1992), and the revised OA fieldwork manual (publication forthcoming). Further guidance is provided to all excavators in the form of the OA *Fieldwork Crib Sheets – a companion guide to the Fieldwork Manual*. These have been issued ahead of formal publication of the revised Fieldwork Manual.

5.4.4 The excavation will also adhere to the SCCAS *Requirements for Excavation* (2017).

Soil and other overburden stripping

5.4.5 This method statement refers to the investigation of the entire footprint of the westernmost building only. The slab has been stripped from the area by the demolition contractor. Further modern rubble and walls will be removed by machine to expose post-medieval archaeological layers and structures under the supervision of a suitably qualified/experienced archaeologist. The exposed surfaces will be cleaned and a record made of the post-medieval buildings and any associated features. Once these features have been characterized, sampled and recorded to the satisfaction of the LPA archaeologist it is proposed to utilize a mechanical excavator with flat bladed bucket to remove post-medieval walls and associated structures to reveal underlying deposits.

5.4.6 Where excavation areas are stripped by plant sub-contracted by Oxford Archaeology, they will be scanned by a qualified and experienced operator, using a CAT and Genny with a valid calibration certificate.

5.4.7 All machine excavation will take place under the supervision of a suitably qualified and experienced archaeologist.

5.4.8 A toothless ditching bucket will be used to strip bulk deposits of no archaeological value. Where bulk deposits are encountered that are assessed to have some archaeological value they will be subject to a sampling strategy to collect environmental and economic indicators prior to machine stripping. Evaluation suggests that some deposits of this character will be found within this area, it is proposed that these are mapped and that the deposits are characterized by means of a series of 1m square hand dug test pits, sieving and metal detecting to be used to aid finds recovery. Where machine excavation is employed deposits will be excavated in spits not greater than 0.1m thick.

5.4.9 Where the archaeological levels are particularly deep, safe excavation procedures will be followed to ensure that areas are safe to enter. This may include shoring or stepping the sides of areas, as appropriate to the soil and site conditions. If flooding is encountered, work will cease and an appropriate de-watering strategy will be agreed with the Principal Contractor.

5.4.10 Spoil arising specifically from archaeological works will be stored on site in a location agreed with the Principal Contractor.

Hand excavation

5.4.11 The top of the first archaeological deposit will be cleared by machine, then cleaned off by hand. Exposed surfaces will be cleaned by trowel and hoe as necessary, in order to clarify located features and deposits.

5.4.12 All features will be investigated and recorded to provide an accurate assessment of their character and contents. All relationships between features or deposits will be investigated and recorded. Any natural subsoil surface revealed will be hand cleaned and examined for archaeological deposits and artefacts. Excavation will characterise the full archaeological sequence down to undisturbed natural deposits. Apparently natural features (such as tree throws) will be sampled sufficiently to establish their character.

5.4.13 All excavation of all archaeological deposits will be done by hand, unless agreed with the LPA Archaeologist that there will be no loss of evidence using a machine. The method of excavation will be decided by the senior project archaeologist.

5.4.14 There will be sufficient excavation to give clear evidence for the period, depth, and nature of each archaeological deposit. The following levels for excavating features will be used as a guide, unless others are agreed during the project.

Feature Class

Proportion

Layers/deposits/horizontal stratigraphy relating to domestic/industrial activity (e.g. hearths, floor surfaces)	100%
Specific layer classes (eg Dark Earth) sampling strategy/percentage to be agreed on a case by case basis	TBC
Post-built structures of pre-modern date	
Domestic ring-ditches or roundhouse gullies	100%
Pits associated with agricultural & other activities	50%
Linear features (ditches & gullies) associated with structural remains (minimum 1m slot excavated across width)	20%
Pre-modern linear features not associated with structural remains (minimum 1m slot excavated across width)	10%
Human burials, cremations & other deposits relating to funerary activity	100%

5.4.15 Every attempt will be made to investigate the full extent of deep features, this may entail sampling using a hand auger or boreholes, in order to assess their depth and structure. Any decisions regarding investigation of deep features will be in consultation with the Consultant and the LPA Archaeologist.

5.4.16 If exceptional or unexpected feature are uncovered, the Consultant and the LPA Archaeologist will be informed, and their advice sought on further excavation or preservation.

5.4.17 To aid retrieval of small items such as fish bones, artefacts etc. on site sieving will be utilised to target medieval and earlier features in order to contribute towards project research aims.

5.5 Human remains

5.5.1 If human remains are encountered during excavation, the Client, Consultant, and the LPA Archaeologist will be informed immediately.

5.5.2 Human remains will be excavated in accordance with all appropriate legislation and Environmental Health regulations. Excavation will only take place after Oxford Archaeology has obtained a Ministry of Justice exhumation license.

5.6 Metal detecting and the Treasure Act

5.6.1 Metal detector searches will take place at all stages of the excavation by an experienced metal detector user. Excavated areas will be detected immediately before and after mechanical stripping. Both excavated areas and spoil heaps will be checked. To prevent losses from night-hawking, features will be metal detected immediately after stripping.

5.6.2 Metal detectors will not be set to discriminate against iron.

5.6.3 Artefacts will be removed and given a small find number. Labels will be placed on the location of each 'small find' and surveyed in with a GPS.

5.6.4 If finds are made that might constitute 'Treasure' under the definition of the Treasure Act (1996), they will, if possible, be excavated and removed to a safe place. Should it not be possible to remove the finds on the day they are found, suitable security will be arranged. Finds that are 'Treasure' will be reported to the landowner and County Coroner within 14 days, in accordance with the Act. The County Finds Liaison Officer from the Portable Antiquities Scheme will also be informed.

5.7 Recording of archaeological deposits and features

5.7.1 Records will comprise survey, photogrammetry, hand drawn, written, and photographic data.

Survey

5.7.2 Surveying will be done using a survey-grade differential GPS (Leica CS10/GS08 or Leica 1200) fitted with "smartnet" technology with an accuracy of 5mm horizontal and 10mm vertical.

5.7.3 The site grid will be accurately tied into the Ordnance Survey National Grid and located on the 1:2500 or 1:1250 map of the area. Elevations will be levelled to the Ordnance Datum.

Written records

5.7.4 A register of all trenches, features, photographs, survey levels, small finds, and human remains will be kept.

5.7.5 All features, layers and deposits will be issued with unique context numbers. Each feature will be individually documented on context sheets, and hand-drawn in section and plan. Written descriptions will be recorded on pro-forma sheets comprising factual data and interpretative elements.

5.7.6 Where stratified deposits are encountered, a Harris Matrix will be compiled during the course of the excavation.

Plans and sections

5.7.7 All plans will be prepared using a combination of GPS-based survey equipment and photogrammetry, complexity will be recorded by hand drawn plans (at a scale of 1:20) and digitally derived plans will be annotated and interpreted by an archaeologist on site.

5.7.8 Where hand-drawn plans are prepared these will be at a scale of 1:20. For very detailed plans of complex features a scale of 1:10 will be used

5.7.9 Long sections showing layers will be drawn at 1:50. Sections of features or short lengths of trenches will be drawn at 1:20. All section levels will be tied in to Ordnance Datum.

5.7.10 All site drawings will include the following information: site name, site code, scale, plan or section number, orientation, date and the name or initials of the archaeologist who prepared the drawing.

Photogrammetric Survey

5.7.11 Photogrammetric recording is considered to be a key methodology for this site, particularly for the recording of solid built structures (brick or stone walls, preserved timber structures, brick or tiled floors).

5.7.12 Photogrammetry requires that a series of high resolution (minimum 5mb) digital photographs are captured and contain a series of reference "targets" that can be precisely located using Survey grade GPS. Photographs are then processed using Agisoft Photosoft (Professional Edition) software to create geo-referenced and measurable photogrammetric scale models.

Photographic record

5.7.13 Photographs will include both general site shots and photographs of specific features. Every feature will be photographed at least once. Photographs will include a scale, north arrow, site code, and feature number (where relevant), unless they are to be used in publications. The photograph

register will record these details, and photograph numbers will be listed on corresponding context sheets. Photographs will comprise high resolution digital and 35mm slr monochrome.

5.8 Post-excavation processing

5.8.1 Processing will take place in tandem with excavation, and advice will be sought from relevant specialists on key artefact types. The Project Manager and fieldwork project officer will be given feedback to enable them to develop excavation strategies during fieldwork.

5.8.2 Any finds requiring specialist treatment and conservation will be sent for appropriate treatment.

5.8.3 Finds will be marked with context numbers, site code or accession number, as detailed in the requirements of Colchester and Ipswich Museum. The details of the requirements may change due to ongoing discussions between SCC and CIMS. The SCC archaeologist will be consulted prior to any archive preparation.

5.9 Finds recovery

Standards for finds handling

5.9.1 Finds will be exposed, lifted, cleaned, conserved, marked, bagged, and boxed in line with the standards in:

United Kingdom Institute for Conservators (2012) *Conservation Guidelines No. 2*

Watkinson & Neal (1988) *First Aid for Finds*

Chartered Institute for Archaeologists (2014) *Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials*

English Heritage (1995) *A Strategy for the Care and Investigation of Finds*.

5.9.2 Where finds require conservation, this will be done in accordance with the guidelines of the Institute for Conservation (ICON),

Procedures for finds handling

5.9.3 At the start of work, a finds supervisor will be appointed to oversee the collection, processing, cataloguing, and specialist advice on all artefacts collected.

5.9.4 Artefacts will be collected by hand and metal detector. Excavation areas and spoil will be scanned visually and with a metal detector to aid recovery of artefacts. All finds will be bagged and labelled according to the individual deposit from which they were recovered, ready for later cleaning and analysis. 'Special/small finds' may be located more accurately by GPS if appropriate.

5.9.5 Processing will take place in tandem with excavation, and advice will be sought from relevant specialists on key artefact types. (See the Appendix for a list of specialists.)

5.9.6 All artefacts recovered from excavated features will be retained for post-excavation processing and assessment, except:

- those which are obviously modern in date and not relevant to the project aims
- where very large volumes are present (e.g ceramic building material, architectural stone, processing waste)

5.9.7 Where artefacts are not removed from site, a strategy will be employed to ensure a sufficient sample is retained, in order to characterise the date and function of the features they were excavated from. A record will be kept of the quantity and nature of artefacts which are not removed from site.

5.9.8 Any finds requiring specialist treatment and conservation will be sent for appropriate treatment.

5.10 Sampling for environmental remains and small artefact retrieval

Standards for environmental sampling and processing

5.10.1 Paleoenvironmental remains will be sampled and processed in accordance with the guidelines set out in:

English Heritage (2011, 2nd edition) *Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation*.

Association for Environmental Archaeology (1995) *Environmental archaeology and archaeological evaluations. Recommendations concerning the environmental archaeology component of archaeological evaluations in England*. Working Papers of the Association for Environmental Archaeology 2. York: Association for Environmental Archaeology.

Dobney, K., Hall, A., Kenward, H. & Milles, A. (1992) *A working classification of sample types for environmental archaeology*. *Circaea* 9.1: 24-26

Murphy, P.L. & Wiltshire, P.E.J. (1994) *A guide to sampling archaeological deposits for environmental analysis*.

Procedures for sampling and processing

5.10.2 Bulk samples (up to 40 litres or 100% of context) will be taken from a range of site features and deposits to target the recovery of plant remains (charcoal and macrobotanicals) fish, bird, small mammal and amphibian bone and small artefacts. Environmental samples will be taken from well-stratified, datable deposits. Samples will be labelled with the site code, context number, and sample number.

5.10.3 If appropriate, monolith samples of waterlogged deposits and buried soils will be taken for pollen analysis, soil micro-morphological, or sedimentological analysis. Where consistent with the aims of the evaluation, samples will be taken from deposits, artefacts, and ecofacts for scientific (absolute) dating.

5.10.4 The evaluation has identified the potential for waterlogged remains, charred remains, fish bones and diatoms on this site. There is a high potential for the recovery of remains that will aid in understanding industry, economy and environment particularly for the Anglo-Saxon and earlier medieval periods and for the later post medieval period.

5.10.5 Where features containing very small artefacts – such as micro-debitage and hammerscale – are identified, bulk samples will be taken (up to 40 litres or 100% of context).

5.10.6 During the excavation typically, 10 litres of each bulk sample will be processed using tank flotation, in order to provide feedback to the excavator to inform an ongoing sampling strategy. Waterlogged samples will be wet sieved and stored in cool or wet conditions as appropriate.

5.10.7 Where practical, waterlogged wood specimens will be recorded in detail on site, in situ. When removed, they will be cleaned and photographed, and stored in wet cool conditions for assessment by a suitably qualified specialist (see the Appendix).

5.10.8 The project team will consult Historic England's Scientific Advisor on environmental sampling and dating where necessary.

6 OUTREACH ACTIVITIES

6.1.1 As outlined in the WSI the site is not currently suitable for public access, however, it is envisaged that once the remediation works are completed it may be possible to include one or more of the following activities.

- Controlled public open day
- Controlled visits by invitation
- On site display board(s)
- Public talks to local societies

7 REPORTING AND ARCHIVING

7.1 The western area will be included with the whole site as detailed in the WSI (29/11/2017), it will not be reported upon separately

8 ARCHIVING

Archive standards

8.1.1 The site archive will conform to the requirements Appendix 1 of the Historic England's (2015) *Management of Research Projects in the Historic Environment* (MoRPHE), and the requirements of the Suffolk County Council Stores. As the repository for Ipswich archives is currently under discussion it is not yet known where the Archive will be deposited. In the event that it is not deposited with the SCC Stores a copy of the documentary archive will be lodged with SCC.

8.1.2 The preparation of the archive will follow the guidelines contained in *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (United Kingdom Institute for Conservation, 1990), *Standards in the Museum care of Archaeological Collections* (Museums and Galleries Commission 1992), and *Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation* (Brown 2007).

Archive contents

8.1.3 The archive will be quantified, ordered, and indexed. It will include:

- artefacts
- ecofacts
- project documentation – including plans, section drawings, context sheets, registers, and specialist reports
- photographs (digital photographs will be stored on CD-ROM, and colour printouts made of key features)
- a printed copy of the Written Brief
- a printed copy of the WSI
- a printed copy of all reports
- a printed copy of the OASIS form.

8.1.4 It is Oxford Archaeology Ltd's policy, in line with accepted practice, to keep site archives (paper and artefactual) together wherever possible.

Transfer of ownership

8.1.5 The archaeological material and paper archive produced from this investigation will be held in storage by OA East who will seek to transfer the complete project archive to the County Store, in order to facilitate future study and ensure long-term public access to the archive. Where the landowner wishes to retain items recovered during excavation, all selected artefacts will be fully drawn and photographed, identified, analysed, documented and conserved in order to create a comprehensive catalogue of items to be kept by the landowner before the remainder of the archive can be deposited in the County Store. A written transfer of ownership document will be forwarded to the LPA Archaeologist before the archive is deposited. In the unlikely event that artefacts of significant monetary value are discovered, and if they are not subject to Treasure Act legislation, separate ownership arrangements may be negotiated following the creation of a comprehensive illustrated catalogue, as described above.

9 TIMETABLE

9.1.1 Monitoring of remediation works will be based on the demolition contractors timetable, expected to be in the region of 3 to 6 weeks. An archaeologist will be in constant attendance (except when below ground works have ceased) and a team of archaeologists will be on stand-by to ensure a timely response as and when archaeological features are uncovered.

9.1.2 A detailed timetable of mitigation post-remediation will be supplied as a supplement to this WSI prior to commencement of that phase of works.

STAFFING AND SUPPORT

9.2 Fieldwork

9.2.1 The fieldwork team will be made up of the following staff:

1 x Project Manager (supervisory only, not based on site)

1 x Project Officer/Supervisor (full-time)

Site Assistants (as required)

1 x Archaeological Surveyor

1 x photogrammetry surveyor

1 x Finds Assistant

1 x Environmental Assistant

9.2.2 The Project Manager will be Aileen Connor and the Project Officer responsible for work on site will be James Fairbairn. The Supervisor will be Lindsey Kemp.

9.2.3 All Site Assistants will be drawn from a pool of qualified and experienced staff. Oxford Archaeology East will not employ volunteer, amateur, or student staff, whether paid or unpaid, except as an addition to the team stated above.

9.3 Post-excavation processing

9.3.1 The site is likely to produce Anglo-Saxon, medieval and post-medieval remains, specialists will be drawn from the list in the appendix as required in addition to:

9.3.2 Pottery will be assessed by Sue Anderson.

9.3.3 Environmental analysis will be carried out by OA East staff, in consultation with the OA Environmental Department in Oxford. The results will be reported to Historic England's Regional Scientific Advisor. Environmental analysis will be undertaken by Rachel Fosberry (charred plant macrofossils, plant macrofossils), Liz Stafford (land molluscs), and Denise Druce and Mairead Rutherford (pollen analysis). Fran Green will provide geo-archaeological advice

9.3.4 Faunal remains will be examined by Hayley Foster.

9.3.5 Conservation will be undertaken by Ipswich and Colchester Museums and will be undertaken in accordance with guidelines issued by the Institute for Conservation (ICON).

9.3.6 In the event that OA's in-house specialists are unable to undertake the work within the time constraints of the project, or if other remains are found, specialists from the list in the Appendix will be approached to carry out analysis.

10 OTHER MATTERS

10.1 Monitoring

10.1.1 The Consultant and the LPA Archaeologist will be informed appropriately of dates and arrangements to allow for adequate monitoring of the works.

10.1.2 During the excavation, representatives of the client, Oxford Archaeology East and the LPA Archaeologist will meet on site to monitor the excavations, discuss progress and findings to date, and excavation strategies to be followed.

10.2 Insurance

10.2.1 OA East is covered by Public and Employer's Liability Insurance. The underwriting company is Lloyds Underwriters, policy number CC004337. Details of the policy can be supplied on request to the Oxford Archaeology East office.

10.3 Chartered Institute for Archaeologists

10.3.1 Oxford Archaeology is a Registered Organisation with the Chartered Institute for Archaeologists (CIfA), and is bound by CIfA By-Laws, Standards, and Policy.

10.4 Services, Public Rights of Way, Tree Preservation Orders etc.

10.4.1 The client will inform the project manager of any live or disused cables, gas pipes, water pipes or other services that may be affected by the proposed excavations before the commencement of fieldwork. Hidden cables/services should be clearly identified and marked where necessary. If there are overhead cables on the site or in the approachways, a survey must be completed by the relevant authority before plant is taken onto site.

10.4.2 The client will likewise inform the project manager of any public rights of way or permissive paths on or near the land which might affect or be affected by the work.

10.4.3 The client will inform the Project Manager if the site is a Scheduled Ancient Monument, Site of Special Scientific Interest (SSSI), or any other type of designated site. The client will also inform the project manager of any trees subject to Tree Preservation Orders, protected hedgerows, protected wildlife, nesting birds, or areas of ecological significance within the site or on its boundaries.

10.5 Site Security

10.5.1 Unless previously agreed with the Project Manager in writing, this specification and any associated statement of costs is based on the assumption that the site will be sufficiently secure for archaeological work to commence. All security requirements, including fencing, padlocks for gates etc. are the responsibility of the client.

10.6 Access

10.6.1 The client will secure access to the site for archaeological personnel and plant, and obtain the necessary permissions from owners and tenants to place a mobile office and portable toilet on or near to the site. Any costs incurred to secure access, or incurred as a result of withholding of access will

not be Oxford Archaeology East's responsibility. The costs of any delays as a result of withheld access will be passed on to the client in addition to the project costs already specified.

10.7 Site Preparation

10.7.1 The client is responsible for clearing the site and preparing it so as to allow archaeological work to take place without further preparatory works, and any cost statement accompanying or associated with this specification is offered on this basis. Unless previously agreed in writing, the costs of any preparatory work required, including tree felling and removal, scrub or undergrowth clearance, removal of concrete or hard standing, demolition of buildings or sheds, or removal of excessive overburden, refuse or dumped material, will be charged to the client, in addition to any costs for archaeological evaluation already agreed.

10.8 Site offices and welfare

10.8.1 All site facilities – including welfare facilities, tool stores, mess huts, and site offices – will be positioned to minimise disruption to other site users, and to minimise impact on the environment (including buried archaeology).

10.9 Health and Safety, Risk Assessments

10.9.1 A risk assessment and method statement (RAMS) covering all activities to be carried out during the lifetime of the project will be prepared before work commences.

10.9.2 The risk assessment will conform to the requirements of health and safety legislation and regulations, and will draw on OA East's activity-specific risk assessment literature.

10.9.3 All aspects of the project, both in the field and in the office will be conducted according to OA East's Health and Safety Policy, Oxford Archaeology Ltd's Health and Safety Policy, and *Health and Safety in Field Archaeology* (J.L. Allen and A. St John-Holt, 1997). A copy of Oxford Archaeology's Health and Safety Policy can be supplied on request.

11 APPENDIX: CONSULTANT SPECIALISTS

NAME	SPECIALISM	ORGANISATION
Allen, Leigh	Worked bone, CBM, medieval metalwork	Oxford Archaeology
Allen, Martin	Medieval coins	Fitzwilliam Museum
Anderson, Sue	HSR, pottery and CBM	Freelance
Bayliss, Alex	C14	English Heritage
Biddulph, Edward	Roman pottery	Oxford Archaeology
Billington, Laurence	Lithics	Oxford Archaeology
Bishop, Barry	Lithics	Freelance
Blinkhorn, Paul	Iron Age, Anglo-Saxon and medieval pottery	Freelance
Boardman, Sheila	Plant macrofossils, charcoal	Oxford Archaeology
Bonsall, Sandra	Plant macrofossils; pollen preparations	Oxford Archaeology
Booth, Paul	Roman pottery and coins	Oxford Archaeology
Boreham, Steve	Pollen and soils/ geology	Cambridge University
Brown, Lisa	Prehistoric pottery	Oxford Archaeology
Cane, Jon	illustration & reconstruction artist	Freelance
Champness, Carl	Snails, geoarchaeology	Oxford Archaeology
Cotter, John	Medieval/post-Medieval finds, pottery, CBM	Oxford Archaeology
Crummy, Nina	Small Find Assemblages	Freelance
Cowgill, Jane	Slag/metalworking residues	Freelance
Darraah, Richard	Wood technology	Freelance
Dickson, Anthony	Worked Flint	Oxford Archaeology
Dodwell, Natasha	Osteologist	Oxford Archaeologist
Donnelly, Mike	Flint	Oxford Archaeology
Doonan, Roger	Slags, metallurgy	
Druce, Denise	Pollen, charred plants, charcoal/wood identification, sediment coring and interpretation	Oxford Archaeology
Drury, Paul	CBM (specialised)	Freelance
Evans, Jerry	Roman pottery	Freelance
Fletcher, Carole	Medieval pot, glass, small finds	Oxford Archaeology
Fosberry, Rachel	Charred plant remains	Oxford Archaeology
Foster, Hayley	Zooarchaeologist	Oxford Archaeology
Fryer, Val	Molluscs/environmental	Freelance
Gale, Rowena	Charcoal ID	Freelance
Geake, Helen	Small finds	Freelance
Gleed-Owen, Chris	Herpetologist	
Goffin, Richenda	Post-Roman pottery, building materials, painted wall plaster	Suffolk CC
Hamilton-Dyer, Sheila	Fish and small animal bones	

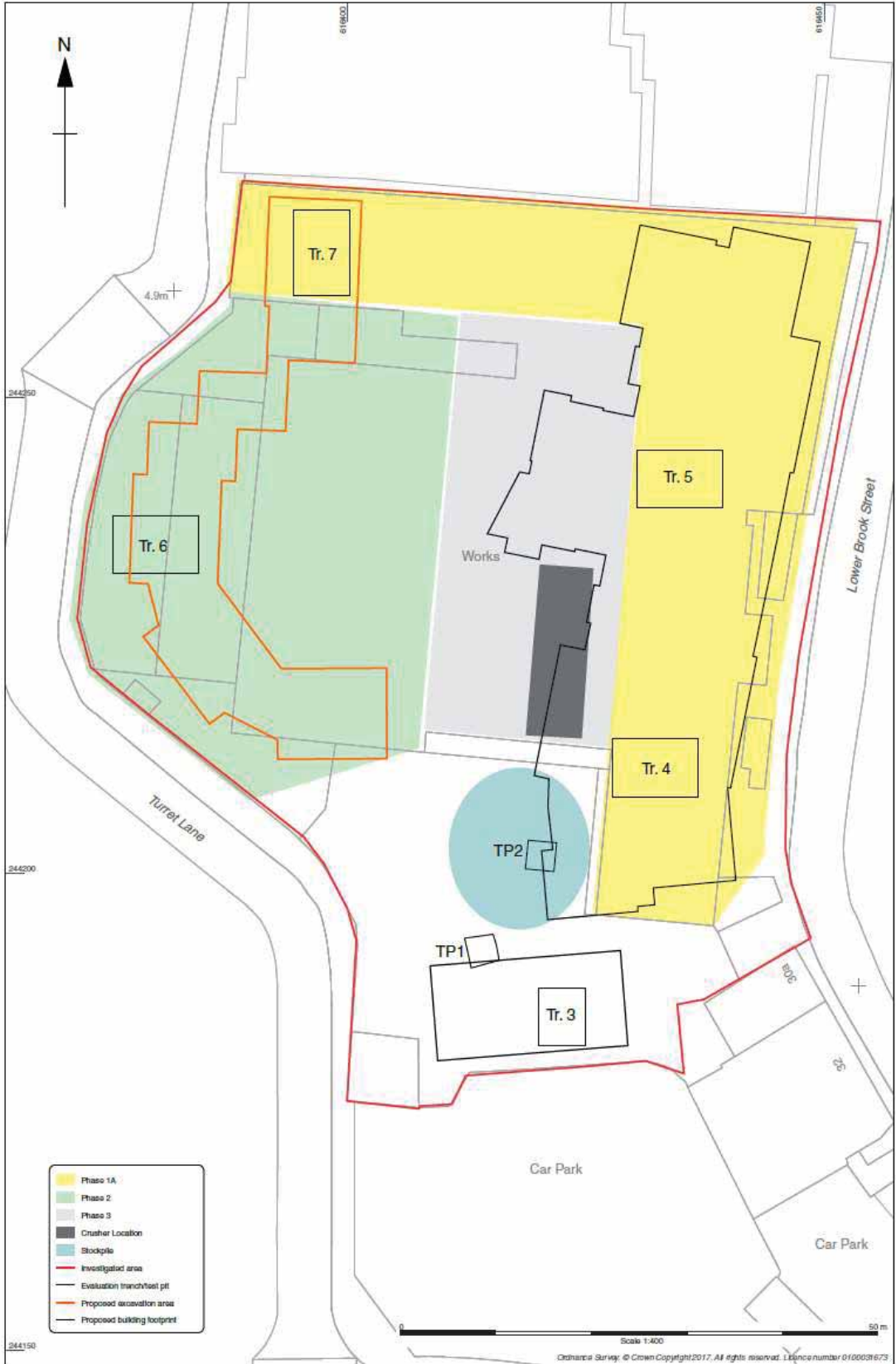
NAME	SPECIALISM	ORGANISATION
Howard-Davis, Chris	Small finds, Mesolithic flint, RB coarse pottery, leather, wooden objects and wood technology;	Oxford Archaeology
Hunter, Kath	Archaeobotany (charred, waterlogged and mineralised plant remains)	Oxford Archaeology
Jones, Jenny	Conservation	ASUD, Durham University
King, David	Window glass & lead	
Locker, Alison	Fishbone	
Loe, Louise	Osteologist	Oxford Archaeology
Lyons, Alice	Late Iron Age/Roman pottery	Oxford Archaeology
Macaulay, Stephen	Roman pottery	Oxford Archaeology
Masters, Pete	geophysics	Cranfield University
Middleton, Paul	Phosphates/garden history	Peterborough Regional College
Mould, Quita	Ironwork, leather	
Nicholson, Rebecca	Fish and small mammal and bird bones, shell	Oxford Archaeology
Palmer, Rog	Aerial photographs	Air Photo Services
Percival, Sarah	Prehistoric pottery, quern stones	Freelance
Poole, Cynthia	Multi-period finds, CBM, fired clay	Oxford Archaeology
Popescu, Adrian	Roman coins	Fitzwilliam Museum
Rackham, James	Faunal and plant remains, can arrange pollen analysis	
Riddler, Ian	Anglo-Saxon bone objects & related artefact types	Freelance
Robinson, Mark	Insects	
Rowland, Steve	Faunal and human bone	Oxford Archaeology
Rutherford, Mairead	Pollen, non-pollen palynomorphs, dinoflagellate cysts, diatoms	Oxford Archaeology
Samuels, Mark	Architectural stonework	Freelance
Scaife, Rob	Pollen	
Scott, Ian	Roman, Medieval, post-medieval finds, metalwork, glass	Oxford Archaeology
Sealey, Paul	Iron Age pottery	Freelance
Shafrey, Ruth	Worked stone, cbm	Oxford Archaeology
Smith, Ian	Animal Bone	Oxford Archaeology
Spoerry, Paul	Medieval pottery	Oxford Archaeology
Stafford, Liz	Snails	Oxford Archaeology
Strid, Lena	Animal bone	Oxford Archaeology
Tyers, Ian	Dendrochronology	
Ui Choileain, Zoe	Human bone	Oxford Archaeology
Vickers, Kim	Insects	Sheffield University

NAME	SPECIALISM	ORGANISATION
Wadeson, Stephen	Samian, Roman glass	Oxford Archaeology
Walker, Helen	Medieval Pottery in the Essex area	
Way, Twigs	Medieval landscape and garden history	Freelance
Webb, Helen	Osteologist	Oxford Archaeology
Willis, Steve	Iron Age pottery	
Young, Jane	Medieval Pottery in the Lincolnshire area	
Zant, John	Coins	Oxford Archaeology

Radiocarbon dating is normally undertaken for Oxford Archaeology East by SUERC and by the Oxford University Accelerator Laboratory.

Geophysical prospection is normally undertaken by Magnitude Surveys Ltd.

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Lower Brook Street Ipswich

Written Scheme of Investigation Supplementary Method Statement

Client: CgMs Consulting on behalf of clients

Prepared by	[Aileen Connor]
Date prepared	13/04/2018
Version	002

Planning application no.	
Site code	XSFLBS16
Project number	19123A
Project type	mitigation
Event number	



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1 GENERAL BACKGROUND

1.1 Purpose of this document

1.1.1 The purpose of this document is to provide a method statement with respect to mitigation in advance of development at Lower Brook Street, Ipswich. The proposed mitigation comprises a combination of preservation in situ and excavation of those areas that will be affected by the development that have been shown to have the potential for survival of significant archaeological deposits, as follows:

- A trench in the east of the site to investigate the west bank of a putative brook
- An area excavation to include the western building footprint to be excavated initially to 300mm below piling mat formation level
- An area excavation to include the north-west building footprint to maximum depth of archaeology.
- Archaeological Monitoring during obstruction removal to 2m depth across the centre and south of the site with a contingency in place should significant remains be identified that require a more controlled programme of excavation. If deeper excavation is required to remove larger/deeper obstructions than can be cut off at 2m, the SCC and CgMs archaeologists will be contacted in order to review strategy.
- The methodology and materials for backfilling will be reviewed with CgMs, the client and SCC. The objective will be to preserve significant in situ archaeological deposits.

1.1.2 This document is supplementary and provides detail to the broad framework set out in an approved WSI for the scheme dated 29/11/2017. This document will be agreed with the Consultant (CgMs Consulting) and the Archaeologist acting for the Local Planning Authority.

1.1.3 This document (method statement) has been prepared on behalf of the Client by Oxford Archaeology East.

1.1.4 This document conforms to the principles identified in Historic England's guidance documents *Management of Research Projects in the Historic Environment (MoRPHE)*, specifically the MoRPHE *Project Manager's Guide* and *Project Planning Note 3: Archaeological Excavation*.

1.1.5 All work will be conducted in accordance with the Chartered Institute for Archaeologists Code of Conduct and Standard and Guidance for Archaeological Excavation.

1.1.6 This method statement also incorporates the requirements of the EAA Standards for Field Archaeology in the East of England (Gurney 2003) and will be undertaken in accordance with SCCAS Requirements for trenched archaeological evaluation 2017.

2 THE GEOLOGY, TOPOGRAPHY AND OTHER FEATURES

2.1.1 This document deals with the proposed mitigation strategy for the site on land between Lower Brook Street and Turret Lane, most recently occupied by a printworks and associated outbuildings.

2.1.2 The proposed development comprises three blocks of residential properties. The western building footprint is approximately 700 sq metres in area. The north-western building footprint is approximately 170 square metres in area and the eastern building footprint is approximately 1500 square metres in area. The remainder of the area is to be laid to access, car parking and gardens with associated services.

2.1.3 The site has been assessed via Desk Based Assessment, evaluation trenching and is currently undergoing archaeological monitoring during slab removal and deeper excavations associated with contamination remediation. This work has provided information that shows that the majority of the central and eastern area of the development has been severely truncated by modern intrusions associated with the construction of the printworks. In addition, Victorian cellars have been found in the north-eastern and north-western corners of the site and these were found to have been backfilled with demolition material that contained asbestos. The north-eastern area of the site was The evaluation

2.1.4 The earliest mapped evidence (Speed 1610) shows Turret Lane to the immediate west of the proposed western and north-western building footprints with a row of domestic houses fronting the lane. By 1675 (Ogilby) the domestic houses appear to have largely been demolished and replaced by a T-shaped building that may be the malthouses shown on later maps. At this time Turret Lane is shown with a sharp dog-leg around the south-western edge of the proposed excavation area. Pennington's map (1778) shows the owner of this part of the site to be Mr Dobson and there are now three large building blocks shown, a Y-shaped block to the south and two rectangular blocks either side of a yard to the north. This layout continues (with additions to the east) on the 1867 (White) map and the 1884 (1st Edition Ordnance Survey) map on which the buildings are labelled as Malthouses. The 1902 Ordnance Survey map suggests little change but by 1927 a number of buildings have been extended and/or replaced, or demolished, particularly on the east and south sides. Turret Lane was altered to its modern appearance (widened and the sharp dog-legs smoothed out) sometime between 1938 and 1950.

2.1.5 A furniture factory occupied much of the north part of the entire development area including parts of the former malthouses in the 1950s and was altered and expanded for the former printworks in the 1960s.

2.1.6 The geology of the site comprises River Terrace Deposits (sand and gravel) overlying Newhaven Chalk Formation. (British Geological Survey online map viewer <http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html>).

2.1.7 The River Orwell is located 149m to the south.

2.1.8 The course of a former tributary to the Orwell is believed to run from north to south along the eastern side of the site.

2.1.9 The modern ground level is at 4.9m OD on Turret Lane, at 4.25m at the top of TP 6 and 4.62m at the top of TP7. Saxon deposits were encountered below 0.25m OD in TP7, Medieval deposits were encountered at below 2.22m OD in TP6, early post-medieval deposits were encountered below c. 3.8m OD in TP6.

3 ARCHAEOLOGICAL BACKGROUND

3.1.1 The archaeological background for the whole site has been dealt with in detail in a desk-based assessment (CgMs consulting) and summarized in the Written Scheme of Investigation Framework (29/11/2017) and will not be repeated here other than to note a number of points specific to the proposed excavation areas:

3.1.2 Two test pits were excavated within the western and north-western proposed building footprints in order to evaluate potential:

3.1.3 Test pit 6 was located to the north-west of the site and was excavated to a depth of 3m. A small rectangular feature was cut into the natural sand and gravel geology at the base of the test pit. This is thought to possibly be a sunken featured building of Saxon date. Three wooden posts and remains of possible planking were recovered from the small depression. Animal bone and pottery was recovered from the backfill of the feature. Saxon pottery was also recorded from layers sealing the feature. The upper levels of the test pit were truncated by basements of 18th or 19th century buildings. That occupied the area. The test pit was sealed by modern concrete.

3.1.4 Test pit 7 was located to the west of the site and in an area that was known to be occupied by buildings from at least the 17th century. The test pit measured 8m x 8m and was dug to a depth of 3m. Several small pit like features along with a small gully were located at the base of the test pit. These are thought to be of a Saxon date. Sealing these earlier features were a succession of construction and backfill layers. A cobbled road or yard was recorded to the eastern side of the test pit along with a possible building foundation to the west. Architectural stone was also recovered from the lower backfill layers. These pieces may relate to the priory buildings that stood close to the site. Maltings once stood in this area of the site and possible remains of these were noted to the eastern side of the test pit. These had been levelled and superseded by buildings of a 19th and 20th century date. It seems that the latter buildings constructed in the area of test pits 6 and 7 may have occupied a similar footprint to those seen on the 17th century maps.

3.1.5 Recent monitoring during remediation has found further evidence for a cobbled surface to the east of Test Pit 7.

3.1.6 A square wood lined well-like feature was discovered in the 1960s located between Trenches 6 and 7 and potentially within the footprint of the proposed western building.

3.1.7 The central portion of the site was shown to have been likely severely truncated by piling for the 1960s building as well as a number of earlier cellars. Evaluation trenching and monitoring has demonstrated that this is the case, and extensive cellars have been found in the south and north of the site.

3.1.8 The course of a possible stream running approximately north to south, was found in evaluation Trench 5 and possibly continuing in Trench 3, although the deposits here may be associated with a large pond known to have existed outside the boundaries of the site to the south. Trench 4 also showed evidence for waterlain deposits at its base, although this area had been so severely truncated by modern piling it was not possible to clearly define them.

4 AIMS AND OBJECTIVES

4.1 Aims of the excavation

4.1.1 The aims of the excavation have been set out in the Written Scheme of Investigation as follows:

- to preserve by record or *in situ* as agreed the archaeological evidence contained within the footprint of the development area, during remediation and prior to development
- to investigate the origins, date, development, phasing, spatial organisation, character, function, status, and significance of the remains revealed
- to place the remains in their local, regional and national archaeological context.

4.1.2 Based on the results of the evaluation to date the following aims and research questions are proposed, these will be refined and detailed in additional statements as further information is available:

- Contribute to research themes associated with Anglo-Saxon urbanization, industry and economy
- Contribute to research themes associated with the role of medieval religious establishments within an urban context
- Investigate the water management on the site and what influences urbanization and the proximity of the Priory had on water management
- Investigate the topography and character of the brook, and its implications for developing a greater understanding of the development of early Ipswich
- Contribute to themes surrounding trade particularly in the Anglo-Saxon and medieval periods
- Contribute to an understanding of the influence of religion and other belief systems during the Anglo-Saxon and medieval periods
- Understand the character of the site in the immediate post-dissolution period and what role it played in the urban landscape - open space/urban food production/gentrification?
- Contribute to an understanding of the development of post-medieval industries, particularly related to the malting industry

4.1.3 During and following the completion of the fieldwork, these research aims will be revised and redefined or expanded as necessary, ensuring that they contribute to the goals of the Regional Research Frameworks relevant to this area.

4.2 Research frameworks

4.2.1 This excavation takes place within, and will contribute to the goals of Regional Research Frameworks relevant to this area:

- Research and Archaeology: A Framework for the Eastern counties: 1. Resource Assessment (Glazebrook 1997, East Anglian Archaeology Occasional Papers 3);
- Research and Archaeology: A Framework for the Eastern counties: 2. Research Agenda and Strategy (Brown & Glazebrook 2000, East Anglian Archaeology Occasional Papers 8)
- Research and Archaeology Revisited: A Revised Framework for the East of England (Medlycott 2011, East Anglian Archaeology Occasional Papers 24)

5 METHODS

5.1 Overview

5.1.1 This Written Scheme of Investigation (13/04/18) sets out the methods to be used on this site and is supplementary to the Mitigation Framework prepared on 29/11/17.

5.2 Background research

5.2.1 To date the site has been subject to a Desk Based Assessment, a two phase evaluation and is currently undergoing archaeological monitoring. Further desk-based research should be undertaken with the aim of increasing understanding of the site formation processes and contributing to the research themes identified. This research should be led by the results of the archaeological works, relevant areas of research based on our current understanding would be:

- Map and documentary sources that can expand on the post-medieval development of the site for example documents related to the maltings or other buildings known to have existed (eg sales particulars, maps, trade directories,
- Documents related to individuals that lived on the site (eg census records, trade directories, sales particulars).
- Accessible earlier (medieval) documentary sources and records where available
- Excavation records for investigations on or in close proximity to the site

5.3 Event number

5.3.1 The site is currently being investigated under the event number IPS865 and this number will be used for the Archive. The site has been recorded under the site code XSFLBS16, it is proposed to continue to use this identifier, all records (context, sample, finds, drawings, photographs etc) will be assigned with unique identifying numbers within this code.

5.4 Excavation method

Excavation standards

5.4.1 The proposed archaeological excavation and analysis will be conducted in accordance with current best archaeological practice and the appropriate national and regional standards and guidelines.

5.4.2 All work will be conducted in accordance with the Chartered Institute for Archaeologists' *Code of Conduct and Standard and Guidance for Archaeological Excavation*.

5.4.3 All fieldwork will be undertaken in accordance with the requirements of the OA Field Manual (ed. D Wilkinson 1992), and the revised OA fieldwork manual (publication forthcoming). Further guidance is provided to all excavators in the form of the OA *Fieldwork Crib Sheets – a companion guide to the Fieldwork Manual*. These have been issued ahead of formal publication of the revised Fieldwork Manual.

5.4.4 The excavation will also adhere to the SCCAS *Requirements for Excavation* (2017).

Strategy for excavation

5.4.5 The slab has been stripped from the areas identified for archaeological excavation by the demolition contractor under the supervision of an OAE archaeologist. Where archaeological remains have been found these have been recorded. Further modern rubble and walls will be removed by machine to expose post-medieval archaeological layers and structures under the supervision of a suitably qualified/experienced archaeologist.

5.4.6 The archaeological investigation will take place in four areas, each area has different parameters and therefore the strategy for each area is tailored as follows:

5.4.7 The formation level for the piling mat for the western building footprint will determine the maximum depth and area of excavation with a contingency for deeper excavation as determined in consultation with the consultant and the County Archaeology Advisor once formation level has been reached. The piling mat will cover an area of approximately 800 sq. metres. The proposed excavation will be to 3.41m OD in the northern part of the building footprint (300mm below formation level for the piling mat) and 3.14m OD in the southern part of the building footprint (300mm below formation level for the piling mat) as shown on the attached plan.

5.4.8 The north-west building footprint is approximately 170 sq. metres in area. Due to the proximity of a party wall to the north of the proposed building, the street boundary on the west side and taking in to consideration that evaluation trench 6 was excavated in this location it is proposed to excavate the area to the south of the base of evaluation trench 6. This would be an area of c. 10m x 10m excavated to the base of the archaeological sequence. It is proposed that this area will be shored to provide safe access to the entire sequence and that a pump will be used to ensure the base can be excavated and recorded fully.

5.4.9 Trench 5 of the evaluation exposed a sequence of apparently waterlain deposits that have been interpreted as a stream, the "brook" of Lower Brook Street. The evaluation did not expose the western bank of this stream and it is proposed to excavate a trench to the north-west (to avoid dense piles that truncate this area) which will reach the base of the archaeological sequence to reveal the western bank of the stream. The base of this trench will be 5m x 2m in area and the sides will be shored in order to allow safe access for investigation, sampling and recording of the sequence.

5.4.10 Obstruction removal in the central and southern are of the site will be undertaken by the demolition contractor monitored by a suitably qualified and experienced archaeologist. Should archaeological deposits be encountered, removal of obstructions will cease. The SCC and CgMs archaeologists will be contacted and strategy for controlled excavation implemented.

5.4.11 Where excavation areas are stripped by plant sub-contracted by Oxford Archaeology, they will be scanned by a qualified and experienced operator, using a CAT and Genny with a valid calibration certificate.

5.4.12 All machine excavation will take place under the supervision of a suitably qualified and experienced archaeologist.

5.4.13 A toothless ditching bucket will be used to strip bulk deposits of no archaeological value. Where bulk deposits are encountered that are assessed to have some archaeological value they will be subject to a sampling strategy to collect environmental and economic indicators prior to machine stripping. Evaluation suggests that some deposits of this character will be found within this area, it is proposed that these are mapped and that the deposits are characterized by means of a series of 1m square hand dug test pits, sieving and metal detecting to be used to aid finds recovery. Where machine excavation is employed deposits will be excavated in spits not greater than 0.1m thick.

5.4.14 Spoil arising specifically from archaeological works will be stored on site adjacent to the excavation areas as agreed with the Principal Contractor.

Hand excavation

5.4.15 The top of the first archaeological deposit will be cleared by machine, then cleaned off by hand. Exposed surfaces will be cleaned by trowel and hoe as necessary, in order to clarify located features and deposits.

5.4.16 All features within the agreed parameters of the investigation will be investigated and recorded to provide information about their character and contents that will contribute to the projects research aims. All relationships between features or deposits will be investigated and recorded. Any natural subsoil surface revealed will be hand cleaned and examined for archaeological deposits and artefacts.

5.4.17 All excavation of all archaeological deposits will be done by hand, unless agreed with the LPA Archaeologist that there will be no loss of evidence using a machine. The method of excavation will be decided by the senior project archaeologist.

5.4.18 There will be sufficient excavation to give clear evidence for the period, depth, and nature of each archaeological deposit. The following levels for excavating features will be used as a guide, unless others are agreed during the project.

Feature Class	Proportion
Layers/deposits/horizontal stratigraphy relating to domestic/industrial activity (e.g. hearths, floor surfaces)	100%
Specific layer classes (eg Dark Earth) sampling strategy/percentage to be agreed on a case by case basis	TBC
Post-built structures of pre-modern date	
Domestic ring-ditches or roundhouse gullies	100%
Pits associated with agricultural & other activities	50%
Linear features (ditches & gullies) associated with structural remains (minimum 1m slot excavated across width)	20%
Pre-modern linear features not associated with structural remains (minimum 1m slot excavated across width)	10%
Human burials, cremations & other deposits relating to funerary activity	100%

5.4.19 Every attempt will be made to investigate the full extent of deep features, this may entail sampling using a hand auger or boreholes, in order to assess their depth and structure. Any decisions regarding investigation of deep features will be in consultation with the Consultant and the LPA Archaeologist.

5.4.20 If exceptional or unexpected feature are uncovered, the Consultant and the LPA Archaeologist will be informed, and their advice sought on further excavation or preservation.

5.4.21 To aid retrieval of small items such as fish bones, artefacts etc. on site sieving will be utilised to target medieval and earlier features in order to contribute towards project research aims.

5.5 Human remains

5.5.1 If human remains are encountered during excavation, the Client, Consultant, and the LPA Archaeologist will be informed immediately.

5.5.2 Human remains will be excavated in accordance with all appropriate legislation and Environmental Health regulations. Excavation will only take place after Oxford Archaeology has obtained a Ministry of Justice exhumation license.

5.6 Metal detecting and the Treasure Act

5.6.1 Metal detector searches will take place at all stages of the excavation by an experienced metal detector user. Excavated areas will be detected immediately before and after mechanical stripping. Both excavated areas and spoil heaps will be checked. To prevent losses from night-hawking, features will be metal detected immediately after stripping.

5.6.2 Metal detectors will not be set to discriminate against iron.

5.6.3 Artefacts will be removed and given a small find number. Labels will be placed on the location of each 'small find' and surveyed in with a GPS.

5.6.4 If finds are made that might constitute 'Treasure' under the definition of the Treasure Act (1996), they will, if possible, be excavated and removed to a safe place. Should it not be possible to remove the finds on the day they are found, suitable security will be arranged. Finds that are 'Treasure' will be reported to the landowner and County Coroner within 14 days, in accordance with the Act. The County Finds Liaison Officer from the Portable Antiquities Scheme will also be informed.

5.7 Recording of archaeological deposits and features

5.7.1 Records will comprise survey, photogrammetry, hand drawn, written, and photographic data.

Survey

5.7.2 Surveying will be done using a survey-grade differential GPS (Leica CS10/GS08 or Leica 1200) fitted with "smartnet" technology with an accuracy of 5mm horizontal and 10mm vertical.

5.7.3 The site grid will be accurately tied into the Ordnance Survey National Grid and located on the 1:2500 or 1:1250 map of the area. Elevations will be levelled to the Ordnance Datum.

Written records

5.7.4 A register of all trenches, features, photographs, survey levels, small finds, and human remains will be kept.

5.7.5 All features, layers and deposits will be issued with unique context numbers. Each feature will be individually documented on context sheets, and hand-drawn in section and plan. Written descriptions will be recorded on pro-forma sheets comprising factual data and interpretative elements.

5.7.6 Where stratified deposits are encountered, a Harris Matrix will be compiled during the course of the excavation.

Plans and sections

5.7.7 All plans will be prepared using a combination of GPS-based survey equipment and photogrammetry, complexity will be recorded by hand drawn plans (at a scale of 1:20) and digitally derived plans will be annotated and interpreted by an archaeologist on site.

5.7.8 Where hand-drawn plans are prepared these will be at a scale of 1:20. For very detailed plans of complex features and timbers a scale of 1:10 will be used.

5.7.9 Long sections showing layers will be drawn at 1:50. Sections of features or short lengths of trenches will be drawn at 1:20. All section levels will be tied in to Ordnance Datum.

5.7.10 All site drawings will include the following information: site name, site code, scale, plan or section number, orientation, date and the name or initials of the archaeologist who prepared the drawing.

Photogrammetric Survey

5.7.11 Photogrammetric recording is considered to be a key methodology for this site, particularly for the recording of solid built structures (brick or stone walls, preserved timber structures, brick or tiled floors).

5.7.12 Photogrammetry requires that a series of high resolution (minimum 5mb) digital photographs are captured and contain a series of reference "targets" that can be precisely located using Survey grade GPS. Photographs are then processed using Agisoft Photosoft (Professional Edition) software to create geo-referenced and measurable photogrammetric scale models.

Photographic record

5.7.13 Photographs will include both general site shots and photographs of specific features. Every feature will be photographed at least once. Photographs will include a scale, north arrow, site code, and feature number (where relevant), unless they are to be used in publications. The photograph register will record these details, and photograph numbers will be listed on corresponding context sheets. Photographs will comprise high resolution digital and 35mm slr monochrome.

5.8 Post-excavation processing

5.8.1 Processing will take place in tandem with excavation, and advice will be sought from relevant specialists on key artefact types. The Project Manager and fieldwork project officer will be given feedback to enable them to develop excavation strategies during fieldwork.

5.8.2 Any finds requiring specialist treatment and conservation will be sent for appropriate treatment.

5.8.3 Finds will be marked with context numbers, site code or accession number, as detailed in the requirements of Colchester and Ipswich Museum.

5.8.4 Environmental Samples taken during evaluation and mitigation will be processed ready for assessment by appropriate specialists.

5.8.5 The archive will be deposited with SCC following SCC guidance for archiving.

5.9 Finds recovery

Standards for finds handling

5.9.1 Finds will be exposed, lifted, cleaned, conserved, marked, bagged, and boxed in line with the standards in:

United Kingdom Institute for Conservators (2012) *Conservation Guidelines No. 2*

Watkinson & Neal (1988) *First Aid for Finds*

Chartered Institute for Archaeologists (2014) *Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials*

English Heritage (1995) *A Strategy for the Care and Investigation of Finds*.

5.9.2 Where finds require conservation, this will be done in accordance with the guidelines of the Institute for Conservation (ICON),

Procedures for finds handling

5.9.3 At the start of work, a finds supervisor will be appointed to oversee the collection, processing, cataloguing, and specialist advice on all artefacts collected.

5.9.4 Artefacts will be collected by hand and metal detector. Excavation areas and spoil will be scanned visually and with a metal detector to aid recovery of artefacts. All finds will be bagged and labelled according to the individual deposit from which they were recovered, ready for later cleaning and analysis. 'Special/small finds' may be located more accurately by GPS if appropriate.

5.9.5 Processing will take place in tandem with excavation, and advice will be sought from relevant specialists on key artefact types. (See the Appendix for a list of specialists.)

5.9.6 All artefacts recovered from excavated features will be retained for post-excavation processing and assessment, except:

- those which are obviously modern in date and not relevant to the project aims
- where very large volumes are present (e.g ceramic building material, architectural stone, processing waste)

5.9.7 Where artefacts are not removed from site, a strategy will be employed to ensure a sufficient sample is retained, in order to characterise the date and function of the features they were excavated from. A record will be kept of the quantity and nature of artefacts which are not removed from site.

5.9.8 Any finds requiring specialist treatment and conservation will be sent for appropriate treatment.

5.10 Sampling for environmental remains and small artefact retrieval

Standards for environmental sampling and processing

5.10.1 Paleoenvironmental remains will be sampled and processed in accordance with the guidelines set out in:

English Heritage (2011, 2nd edition) *Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation*.

Association for Environmental Archaeology (1995) *Environmental archaeology and archaeological evaluations. Recommendations concerning the environmental archaeology component of archaeological evaluations in England*. Working Papers of the Association for Environmental Archaeology 2. York: Association for Environmental Archaeology.

Dobney, K., Hall, A., Kenward, H. & Milles, A. (1992) *A working classification of sample types for environmental archaeology*. *Circaea* 9.1: 24-26

Murphy, P.L. & Wiltshire, P.E.J. (1994) *A guide to sampling archaeological deposits for environmental analysis*.

Procedures for sampling and processing

5.10.2 Bulk samples (up to 40 litres or 100% of context) will be taken from a range of site features and deposits to target the recovery of plant remains (charcoal and macrobotanicals) fish, bird, small mammal and amphibian bone and small artefacts. Environmental samples will be taken from well-stratified, datable deposits. Samples will be labelled with the site code, context number, and sample number.

5.10.3 If appropriate, monolith samples of waterlogged deposits and buried soils will be taken for pollen analysis, soil micro-morphological, or sedimentological analysis. Where consistent with the aims of the evaluation, samples will be taken from deposits, artefacts, and ecofacts for scientific (absolute) dating.

5.10.4 The evaluation has identified the potential for waterlogged remains, charred remains, fish bones and diatoms on this site. There is a high potential for the recovery of remains that will aid in understanding industry, economy and environment particularly for the Anglo-Saxon and earlier medieval periods and for the later post medieval period.

5.10.5 Where features containing very small artefacts – such as micro-debitage and hammerscale – are identified, bulk samples will be taken (up to 40 litres or 100% of context).

5.10.6 During the excavation typically, 10 litres of each bulk sample will be processed using tank flotation, in order to provide feedback to the excavator to inform an ongoing sampling strategy. Waterlogged samples will be wet sieved and stored in cool or wet conditions as appropriate.

5.10.7 Where practical, waterlogged wood specimens will be recorded in detail on site, in situ. When removed, they will be cleaned and photographed, and stored in wet cool conditions for assessment by a suitably qualified specialist (see the Appendix).

5.10.8 The project team will consult Historic England's Scientific Advisor on environmental sampling and dating where necessary.

6 OUTREACH ACTIVITIES

6.1.1 As outlined in the WSI the site is not currently suitable for public access, however, it is envisaged that once the remediation works are completed it may be possible to include one or more of the following activities.

- Controlled public open day
- Controlled visits by invitation
- On site display board(s)
- Public talks to local societies

7 REPORTING AND ARCHIVING

7.1 Post-excavation Assessment Report

7.1.1 Post-excavation analysis and reporting will follow guidance in Historic England's (2009) Management of Research Projects in the Historic Environment.

7.1.2 Post-excavation reporting will include:

- site summaries as required
- A post-excavation assessment report and updated research design
- Analysis and publication if appropriate

7.2 Contents of the Assessment Report

7.2.1 The post-excavation assessment report will provide an objective account of the archaeological investigation and its findings and will incorporate the finds and records generated during the evaluation and mitigation phases of the project (including monitoring). It will contain a comprehensive, illustrated assessment of the results and consider the potential for further analysis and publication in light of relevant research issues within regional and national research agendas.

7.2.2 The report will include:

- a title page detailing site address, site code and accession number, NGR, author/originating body, client's name and address
- full list of contents
- a non-technical summary of the findings
- a description of the geology and topography of the area
- a description of the methodologies used
- an appraisal of the potential for primary documentary study
- a description of the findings and assessment of the stratigraphic evidence
- tables summarising features and artefacts
- site location plans, and plans of each area excavated showing the archaeological features found
- selected sections of excavated features
- specialist assessment reports on artefacts and environmental finds to include those samples generated during evaluation
- relevant photographs of features and the site
- a discussion of the relationship between findings on the site and other archaeological information held in the Suffolk Historic Environment Record
- an updated project design linked to relevant local and regional research issues, including a programme of work and timetable for further analysis and publication (where appropriate)
- the potential for public display and outreach opportunities.
- a bibliography of all reference material
- the OASIS reference and summary form.

7.3 Analysis and Publication

7.3.1 A summary report will be prepared for the Proceedings of the Suffolk Institute of Archaeology & History

7.3.2 In consultation with the Consultant and the LPA Archaeologist and following the production of the post-excavation assessment report, a post-excavation analysis report and/or publication will be produced.

7.3.3 The content of the post-excavation analysis report will be detailed in the updated project design contained within the post-excavation assessment report.

7.3.4 The scope, format and venue of any publication will be proportionate to the significance of the results.

7.3.5 A timetable for the analysis and publication will be contained within the post-excavation assessment report.

7.4 Draft and final reports

7.4.1 A draft copy of the post-excavation reports will be supplied to the Consultant and the LPA Archaeologist for comment.

7.4.2 Following approval of the report, one printed copy and one digital copy (PDF) will be presented to the Suffolk Historic Environment Record.

7.5 OASIS

7.5.1 A digital copy of the approved report will be uploaded to the OASIS database.

7.5.2 A copy of the OASIS Data Collection Form will be included in the report.

8 ARCHIVING

Archive standards

8.1.1 The site archive will conform to the requirements Appendix 1 of the Historic England's (2015) *Management of Research Projects in the Historic Environment* (MoRPHE), and the requirements of the Suffolk County Council Stores. The site archive will be deposited with Suffolk County Council

8.1.2 The preparation of the archive will follow the guidelines contained in *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (United Kingdom Institute for Conservation, 1990), *Standards in the Museum care of Archaeological Collections* (Museums and Galleries Commission 1992), and *Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation* (Brown 2007).

Archive contents

8.1.3 The archive will be quantified, ordered, and indexed. It will include:

- artefacts
- ecofacts
- project documentation – including plans, section drawings, context sheets, registers, and specialist reports
- photographs (digital photographs will be stored on CD-ROM, and colour printouts made of key features)
- a printed copy of the Written Brief
- a printed copy of the WSI
- a printed copy of all reports
- a printed copy of the OASIS form.

8.1.4 It is Oxford Archaeology Ltd's policy, in line with accepted practice, to keep site archives (paper and artefactual) together wherever possible.

Transfer of ownership

8.1.5 The archaeological material and paper archive produced from this investigation will be held in storage by OA East who will seek to transfer the complete project archive to the County Store, in order to facilitate future study and ensure long-term public access to the archive. Where the landowner wishes to retain items recovered during excavation, all selected artefacts will be fully drawn and photographed, identified, analysed, documented and conserved in order to create a comprehensive catalogue of items to be kept by the landowner before the remainder of the archive can be deposited in the County Store. A written transfer of ownership document will be forwarded to the LPA Archaeologist before the archive is deposited. In the unlikely event that artefacts of significant monetary value are discovered, and if they are not subject to Treasure Act legislation, separate ownership arrangements may be negotiated following the creation of a comprehensive illustrated catalogue, as described above.

9 TIMETABLE

9.1 Programme

9.1.1 The programme of works is expected to be as follows:

9.1.2 Monitoring of slab removal and remediation will continue and will be based on the demolition contractors timetable, expected to be in the region of up to 8 weeks. An archaeologist will be in attendance as required and a team of archaeologists will be on stand-by to ensure a timely response as and when archaeological features are uncovered.

9.1.3 Excavate Trench to investigate the deposits in the stream and relationship to the western bank of the stream. This phase of works is anticipated to take approximately 1 to 2 weeks with a team of three archaeologists. It will take place in tandem with excavation of the western building footprint (10.1.4). On sign off from the SCCAS Archaeologist and the consultant the trench will be backfilled.

9.1.4 Access to be installed at the north-western corner of the site (by SHE French) to enable excavation of the western piling mat footprint to 300mm below piling mat formation level. This phase of works is anticipated to take three-four weeks with a team of six archaeologists. A contingency is in place should there be a requirement to excavate to a greater depth. On sign off from the SCCAS Archaeologist and the consultant, the access will be moved to enable the north-western building footprint to be excavated.

9.1.5 The final phase of works on the north-west building footprint is anticipated to take three to four weeks to complete with a team of six archaeologists.

9.1.6 Timing for all of the above is subject to alteration due to factors such as de-watering, shoring, weather and other factors outside of our control.

10 STAFFING AND SUPPORT

10.1 Fieldwork

10.1.1 The fieldwork team will be made up of the following staff:

- 1 x Project Manager (supervisory only, not based on site)
- 1 x Project Officer (full-time)
- 1 x Supervisor as required
- Five Site Assistants (as required)
- 1 x Archaeological Surveyor
- 1 x photogrammetry surveyor
- 1 x Finds Assistant
- 1 x Environmental Assistant

10.1.2 The Project Manager will be Aileen Connor and the Project Officer responsible for work on site will be James Fairbairn (TBC). The Supervisor will be Lindsey Kemp.

10.1.3 All Site Assistants will be drawn from a pool of qualified and experienced staff. Oxford Archaeology East will not employ volunteer, amateur, or student staff, whether paid or unpaid, except as an addition to the team stated above.

10.2 Post-excavation processing

10.2.1 The site is likely to produce Anglo-Saxon, medieval and post-medieval remains. The finds and samples collected during the evaluation will be incorporated into the archive and appropriate specialists will contribute to their assessment and analysis. The specialists will be drawn from the list in the appendix as required in addition to the following:

10.2.2 Pottery, CBM will be assessed by Sue Anderson.

10.2.3 Glass and clay tobacco pipes will be assessed by Carole Fletcher

10.2.4 Small finds will be initially assessed and catalogued by Denis Sami and will then be sent to individual specialists as appropriate; architectural stone (Mark Samuels), the runic inscription (Ian Riddler with Svante Fischer of Uppsala University and Jean Soulat of LandArc, France), medieval coins and tokens (Martin Allen), other medieval and post-medieval small finds (Sue Anderson) or specific specialists as identified during cataloguing.

10.2.5 Environmental analyses will be carried out by OA East staff, in consultation with the OA Environmental Department in Oxford. The results will be reported to Historic England's Regional Scientific Advisor. Environmental analysis will be undertaken by Rachel Fosberry (charred plant macrofossils, plant macrofossils), Liz Stafford (land molluscs), and Denise Druce and Mairead Rutherford (pollen analysis). Other environmental remains collected from samples will be sent to specialists as advised by OAE Environmental Officer (Rachel Fosberry), Fran Green will provide geo-archaeological advice and assessment.

10.2.6 Faunal remains will be examined by Hayley Foster and fish bones will be assessed by Rebecca Nicholson.

10.2.7 Conservation will be undertaken by Ipswich and Colchester Museums and will be undertaken in accordance with guidelines issued by the Institute for Conservation (ICON).

10.2.8 In the event that OA's in-house specialists are unable to undertake the work within the time constraints of the project, or if other remains are found, specialists from the list in the Appendix will be approached to carry out analysis.

11 OTHER MATTERS

11.1 Monitoring

11.1.1 The Consultant and the LPA Archaeologist will be informed appropriately of dates and arrangements to allow for adequate monitoring of the works.

11.1.2 During the excavation, representatives of the client, Oxford Archaeology East and the LPA Archaeologist will meet on site to monitor the excavations, discuss progress and findings to date, and excavation strategies to be followed.

11.2 Insurance

11.2.1 OA East is covered by Public and Employer's Liability Insurance. The underwriting company is Lloyds Underwriters, policy number CC004337. Details of the policy can be supplied on request to the Oxford Archaeology East office.

11.3 Chartered Institute for Archaeologists

11.3.1 Oxford Archaeology is a Registered Organisation with the Chartered Institute for Archaeologists (CIfA), and is bound by CIfA By-Laws, Standards, and Policy.

11.4 Services, Public Rights of Way, Tree Preservation Orders etc.

11.4.1 The client will inform the project manager of any live or disused cables, gas pipes, water pipes or other services that may be affected by the proposed excavations before the commencement of fieldwork. Hidden cables/services should be clearly identified and marked where necessary. If there are overhead cables on the site or in the approachways, a survey must be completed by the relevant authority before plant is taken onto site.

11.4.2 The client will likewise inform the project manager of any public rights of way or permissive paths on or near the land which might affect or be affected by the work.

11.4.3 The client will inform the Project Manager if the site is a Scheduled Ancient Monument, Site of Special Scientific Interest (SSSI), or any other type of designated site. The client will also inform the project manager of any trees subject to Tree Preservation Orders, protected hedgerows, protected wildlife, nesting birds, or areas of ecological significance within the site or on its boundaries.

11.5 Site Security

11.5.1 Unless previously agreed with the Project Manager in writing, this specification and any associated statement of costs is based on the assumption that the site will be sufficiently secure for archaeological work to commence. All security requirements, including fencing, padlocks for gates etc. are the responsibility of the client.

11.6 Access

11.6.1 The client will secure access to the site for archaeological personnel and plant, and obtain the necessary permissions from owners and tenants to place a mobile office and portable toilet on or near to the site. Any costs incurred to secure access, or incurred as a result of withholding of access will

not be Oxford Archaeology East's responsibility. The costs of any delays as a result of withheld access will be passed on to the client in addition to the project costs already specified.

11.7 Site Preparation

11.7.1 The client is responsible for clearing the site and preparing it so as to allow archaeological work to take place without further preparatory works, and any cost statement accompanying or associated with this specification is offered on this basis. Unless previously agreed in writing, the costs of any preparatory work required, including tree felling and removal, scrub or undergrowth clearance, removal of concrete or hard standing, demolition of buildings or sheds, or removal of excessive overburden, refuse or dumped material, will be charged to the client, in addition to any costs for archaeological evaluation already agreed.

11.8 Site offices and welfare

11.8.1 All site facilities – including welfare facilities, tool stores, mess huts, and site offices – will be positioned to minimise disruption to other site users, and to minimise impact on the environment (including buried archaeology).

11.9 Health and Safety, Risk Assessments

11.9.1 A risk assessment and method statement (RAMS) covering all activities to be carried out during the lifetime of the project will be prepared before work commences.

11.9.2 The risk assessment will conform to the requirements of health and safety legislation and regulations, and will draw on OA East's activity-specific risk assessment literature.

11.9.3 All aspects of the project, both in the field and in the office will be conducted according to OA East's Health and Safety Policy, Oxford Archaeology Ltd's Health and Safety Policy, and *Health and Safety in Field Archaeology* (J.L. Allen and A. St John-Holt, 1997). A copy of Oxford Archaeology's Health and Safety Policy can be supplied on request.

12 APPENDIX: CONSULTANT SPECIALISTS

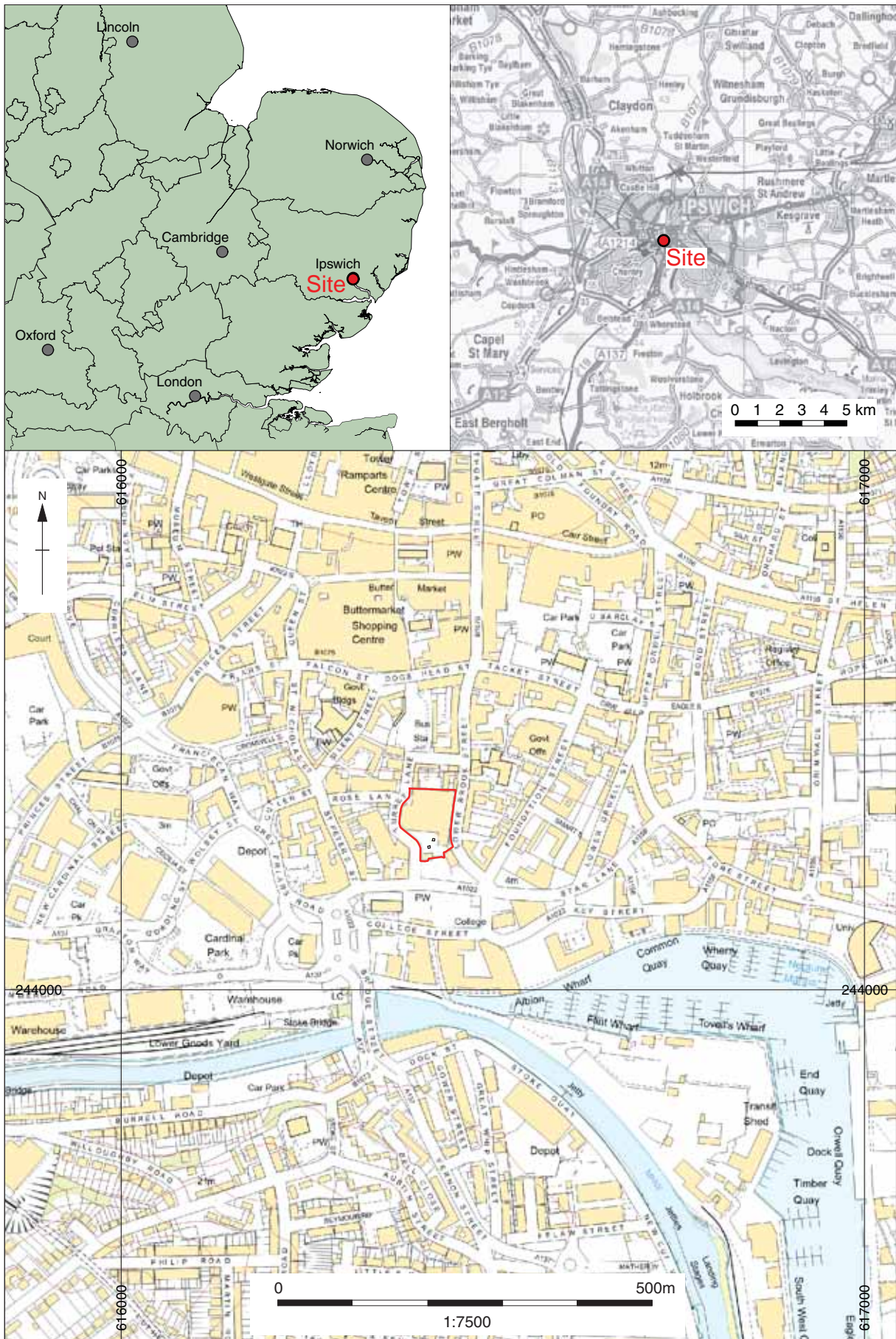
NAME	SPECIALISM	ORGANISATION
Allen, Leigh	Worked bone, CBM, medieval metalwork	Oxford Archaeology
Allen, Martin	Medieval coins	Fitzwilliam Museum
Anderson, Sue	HSR, pottery and CBM	Freelance
Bayliss, Alex	C14	English Heritage
Biddulph, Edward	Roman pottery	Oxford Archaeology
Billington, Laurence	Lithics	Oxford Archaeology
Bishop, Barry	Lithics	Freelance
Blinkhorn, Paul	Iron Age, Anglo-Saxon and medieval pottery	Freelance
Boardman, Sheila	Plant macrofossils, charcoal	Oxford Archaeology
Bonsall, Sandra	Plant macrofossils; pollen preparations	Oxford Archaeology
Booth, Paul	Roman pottery and coins	Oxford Archaeology
Boreham, Steve	Pollen and soils/ geology	Cambridge University
Brown, Lisa	Prehistoric pottery	Oxford Archaeology
Cane, Jon	illustration & reconstruction artist	Freelance
Champness, Carl	Snails, geoarchaeology	Oxford Archaeology
Cotter, John	Medieval/post-Medieval finds, pottery, CBM	Oxford Archaeology
Crummy, Nina	Small Find Assemblages	Freelance
Cowgill, Jane	Slag/metalworking residues	Freelance
Darrah, Richard	Wood technology	Freelance
Dickson, Anthony	Worked Flint	Oxford Archaeology
Dodwell, Natasha	Osteologist	Oxford Archaeologist
Donnelly, Mike	Flint	Oxford Archaeology
Doonan, Roger	Slags, metallurgy	
Druce, Denise	Pollen, charred plants, charcoal/wood identification, sediment coring and interpretation	Oxford Archaeology
Drury, Paul	CBM (specialised)	Freelance
Evans, Jerry	Roman pottery	Freelance
Fletcher, Carole	Medieval pot, glass, small finds	Oxford Archaeology
Fosberry, Rachel	Charred plant remains	Oxford Archaeology
Foster, Hayley	Zooarchaeologist	Oxford Archaeology
Fryer, Val	Molluscs/environmental	Freelance
Gale, Rowena	Charcoal ID	Freelance
Geake, Helen	Small finds	Freelance
Gleed-Owen, Chris	Herpetologist	
Goffin, Richenda	Post-Roman pottery, building materials, painted wall plaster	Suffolk CC
Hamilton-Dyer, Sheila	Fish and small animal bones	

NAME	SPECIALISM	ORGANISATION
Howard-Davis, Chris	Small finds, Mesolithic flint, RB coarse pottery, leather, wooden objects and wood technology;	Oxford Archaeology
Hunter, Kath	Archaeobotany (charred, waterlogged and mineralised plant remains)	Oxford Archaeology
Jones, Jenny	Conservation	ASUD, Durham University
King, David	Window glass & lead	
Locker, Alison	Fishbone	
Loe, Louise	Osteologist	Oxford Archaeology
Lyons, Alice	Late Iron Age/Roman pottery	Oxford Archaeology
Macaulay, Stephen	Roman pottery	Oxford Archaeology
Masters, Pete	geophysics	Cranfield University
Middleton, Paul	Phosphates/garden history	Peterborough Regional College
Mould, Quita	Ironwork, leather	
Nicholson, Rebecca	Fish and small mammal and bird bones, shell	Oxford Archaeology
Palmer, Rog	Aerial photographs	Air Photo Services
Percival, Sarah	Prehistoric pottery, quern stones	Freelance
Poole, Cynthia	Multi-period finds, CBM, fired clay	Oxford Archaeology
Popescu, Adrian	Roman coins	Fitzwilliam Museum
Rackham, James	Faunal and plant remains, can arrange pollen analysis	
Riddler, Ian	Anglo-Saxon bone objects & related artefact types	Freelance
Robinson, Mark	Insects	
Rowland, Steve	Faunal and human bone	Oxford Archaeology
Rutherford, Mairead	Pollen, non-pollen palynomorphs, dinoflagellate cysts, diatoms	Oxford Archaeology
Samuels, Mark	Architectural stonework	Freelance
Scaife, Rob	Pollen	
Scott, Ian	Roman, Medieval, post-medieval finds, metalwork, glass	Oxford Archaeology
Sealey, Paul	Iron Age pottery	Freelance
Shafrey, Ruth	Worked stone, cbm	Oxford Archaeology
Smith, Ian	Animal Bone	Oxford Archaeology
Spoerry, Paul	Medieval pottery	Oxford Archaeology
Stafford, Liz	Snails	Oxford Archaeology
Strid, Lena	Animal bone	Oxford Archaeology
Tyers, Ian	Dendrochronology	
Ui Choileain, Zoe	Human bone	Oxford Archaeology
Vickers, Kim	Insects	Sheffield University

NAME	SPECIALISM	ORGANISATION
Wadeson, Stephen	Samian, Roman glass	Oxford Archaeology
Walker, Helen	Medieval Pottery in the Essex area	
Way, Twigs	Medieval landscape and garden history	Freelance
Webb, Helen	Osteologist	Oxford Archaeology
Willis, Steve	Iron Age pottery	
Young, Jane	Medieval Pottery in the Lincolnshire area	
Zant, John	Coins	Oxford Archaeology

Radiocarbon dating is normally undertaken for Oxford Archaeology East by SUERC and by the Oxford University Accelerator Laboratory.

Geophysical prospection is normally undertaken by Magnitude Surveys Ltd.



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Figure 1: Site location showing archaeological trenches (black) in development area (red)



Figure 2: Proposed Excavation areas. Scale 1:1000



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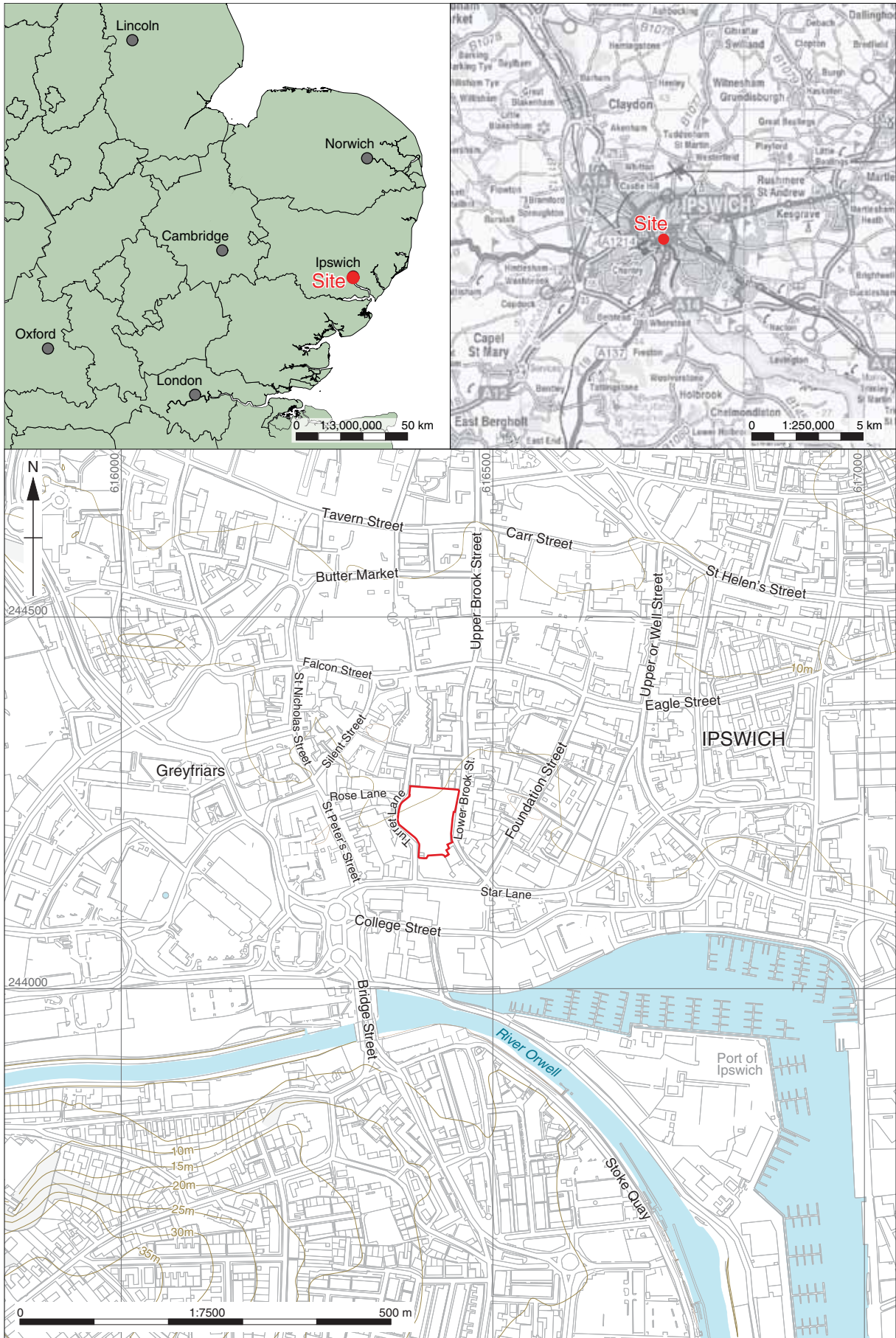
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Figure 1: Site location plan



Figure 2: Proposed building development footprints

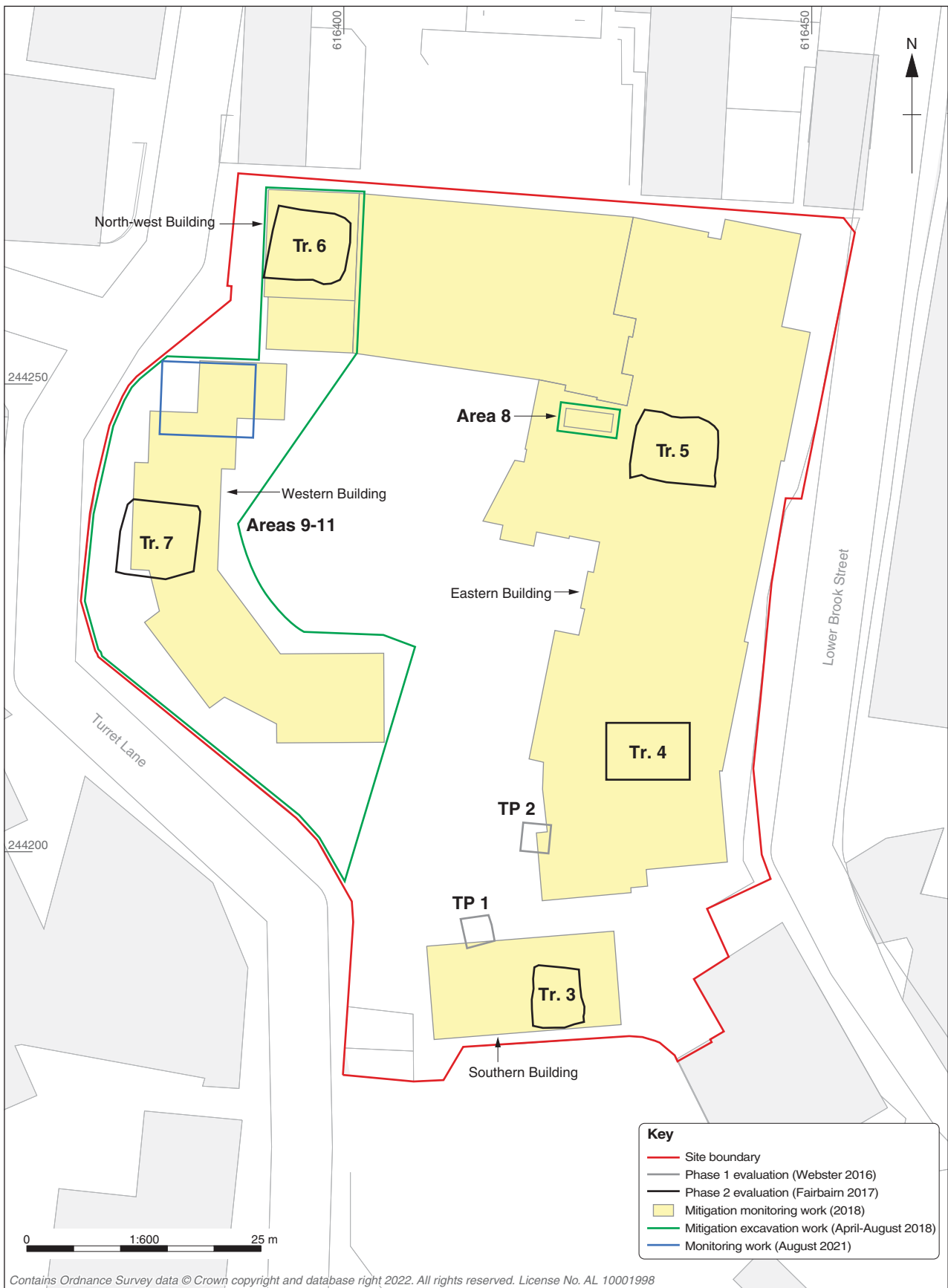


Figure 3: Overview of investigation work from 2016 to 2018 (including 2021 monitoring area)

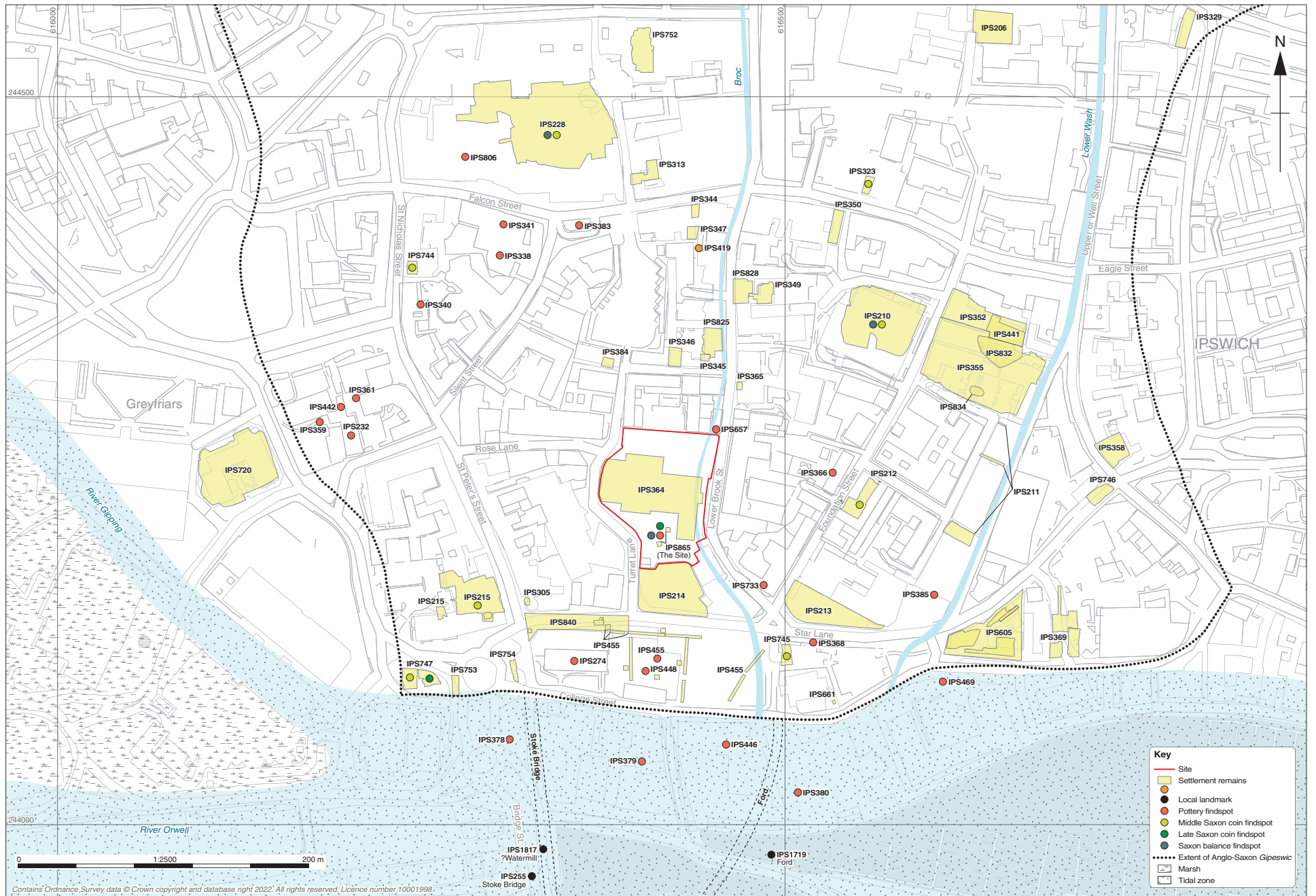


Figure 4a: Map showing location of Anglo-Saxon SHER monuments north of the River Orwell within a 500m radius of the site

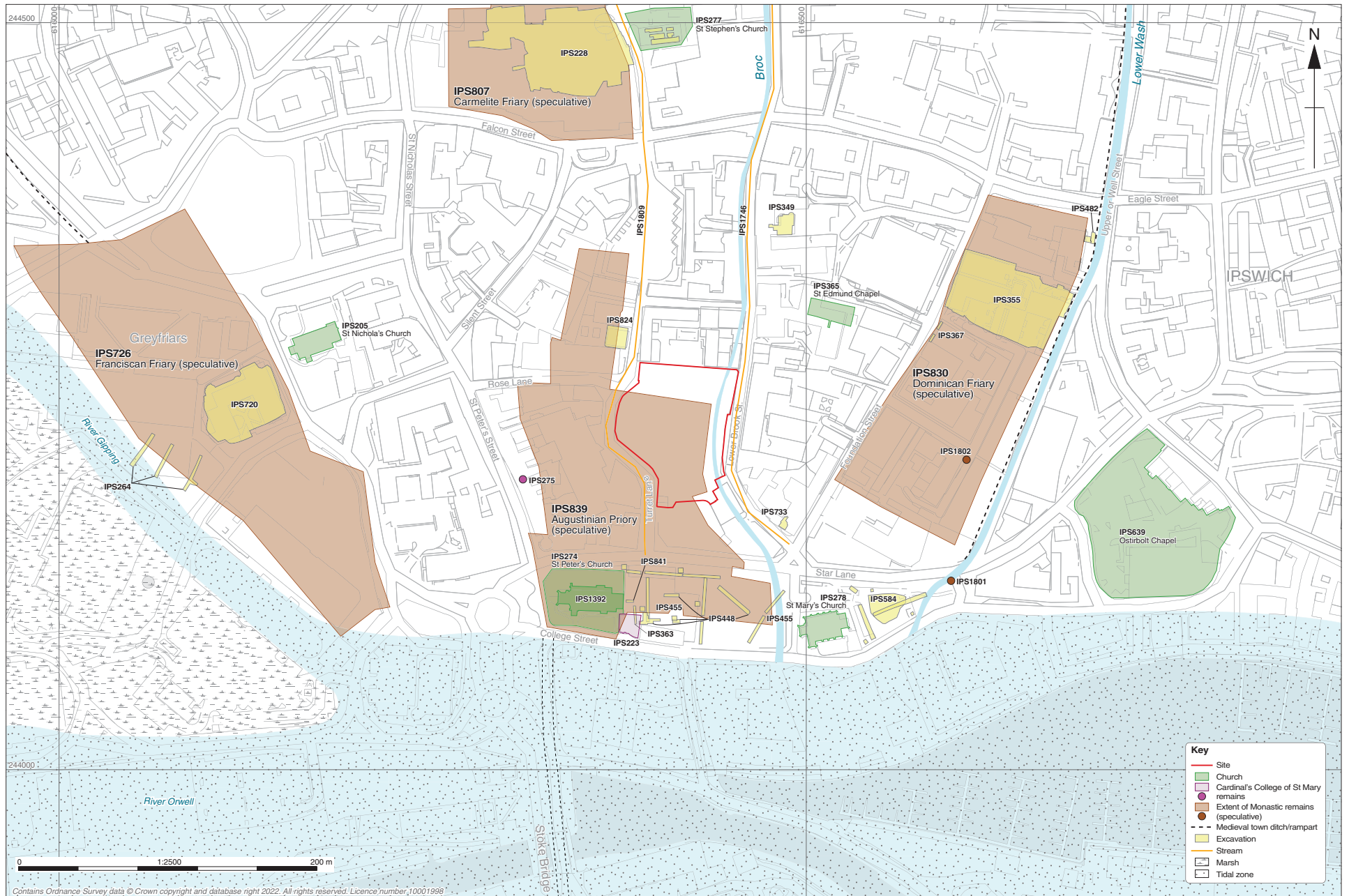


Figure 4b: Map showing location of medieval SHER monuments north of the River Orwell within a 500m radius of the site

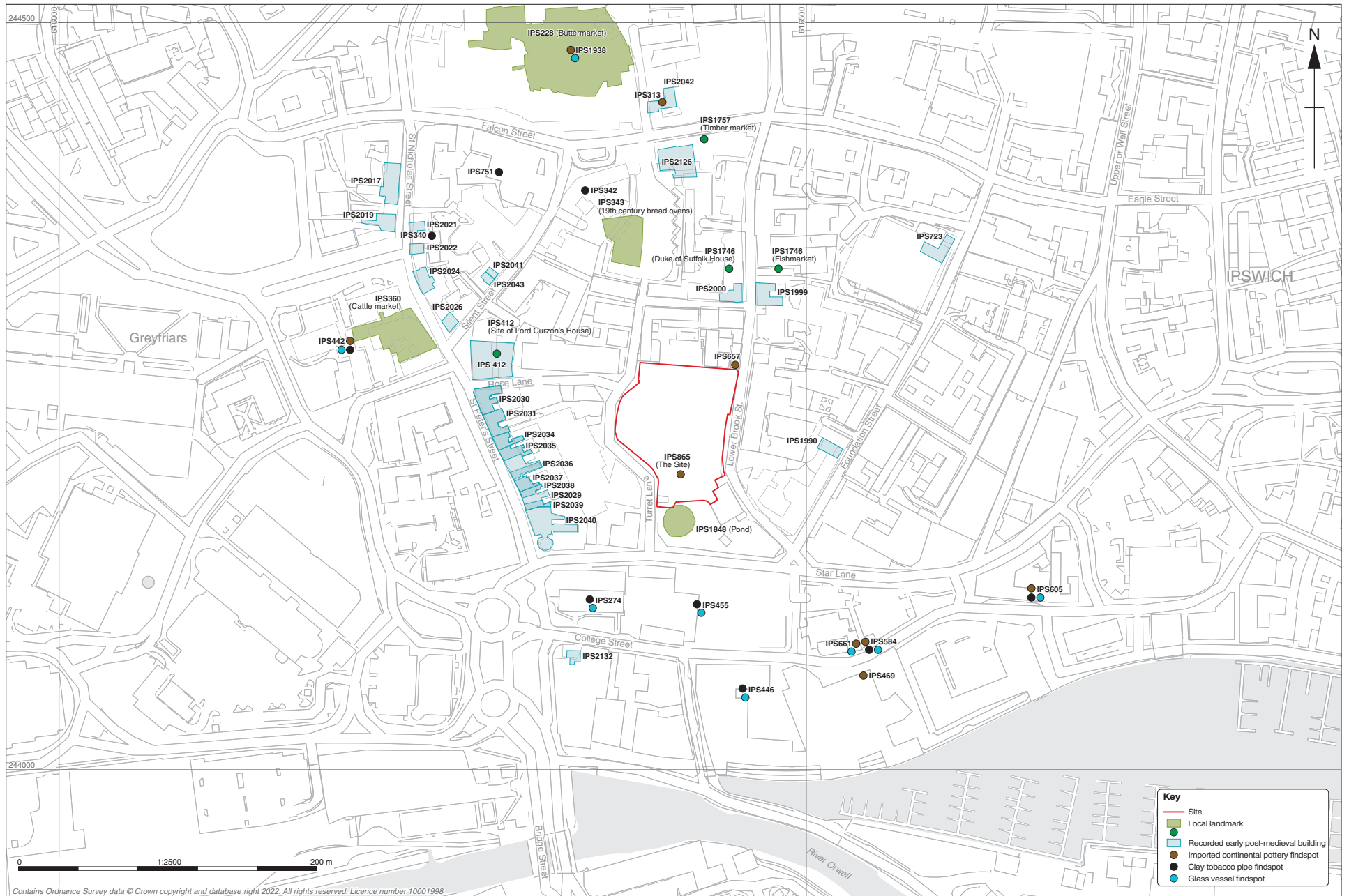


Figure 4c: Map showing location of post-medieval SHER monuments within a 250m radius of the site

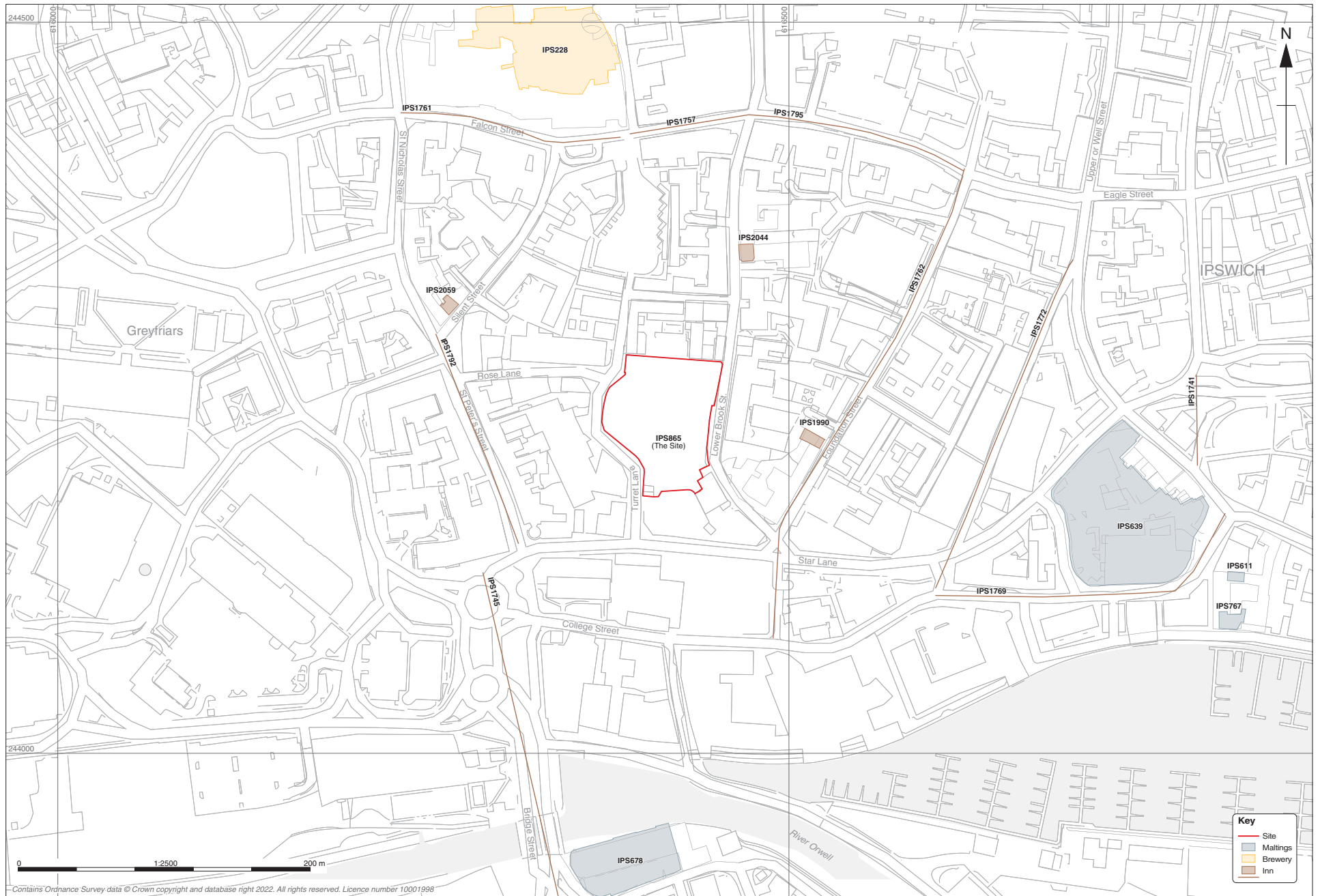


Figure 4d: Map showing location of SHER monuments related to brewing within a 500m radius of the site

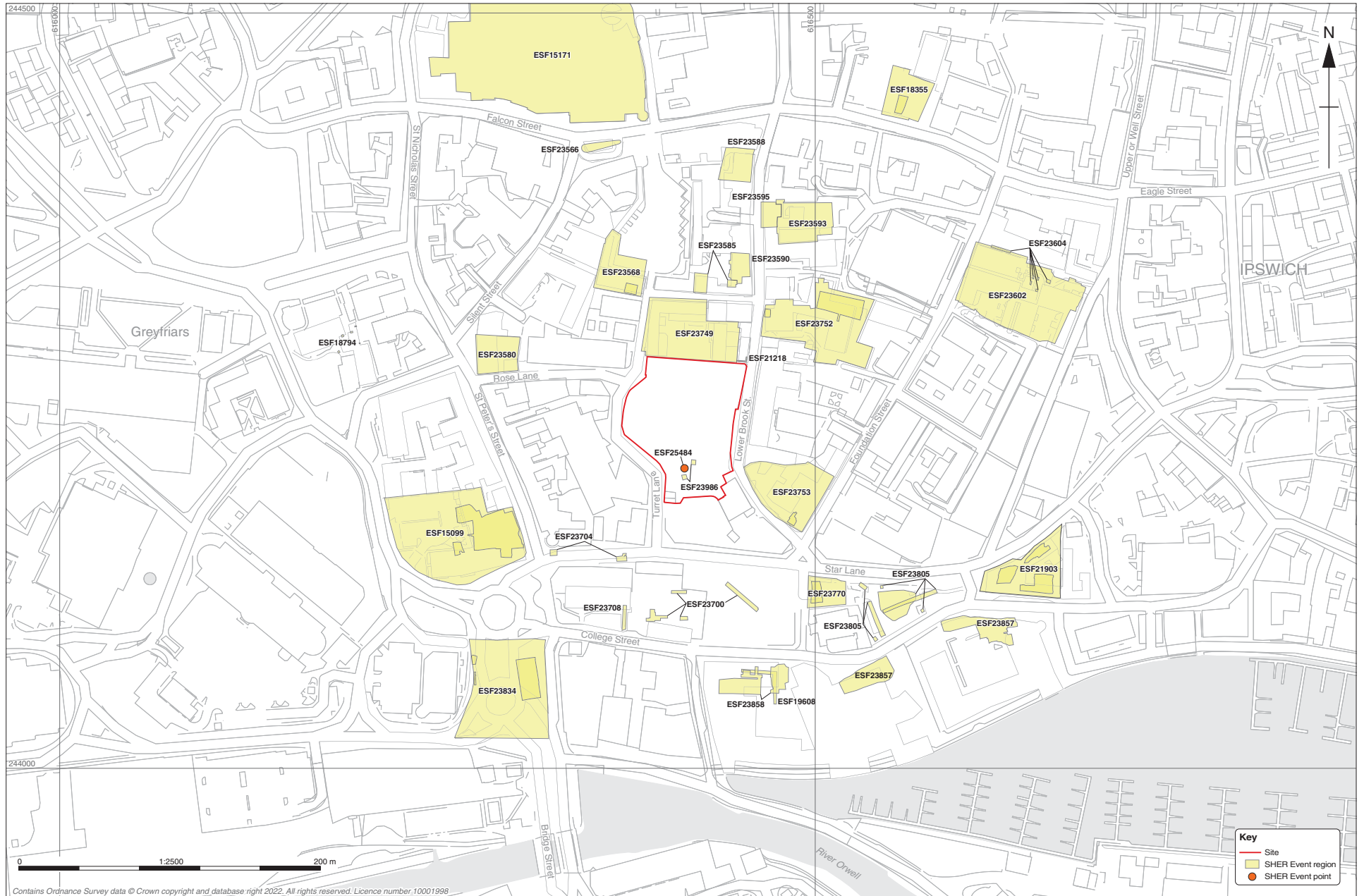


Figure 4e: Map showing location of selected SHER events within a 250m radius of the site



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Figure 4f: Map showing location of SHER scheduled monuments within a 250m radius of the site

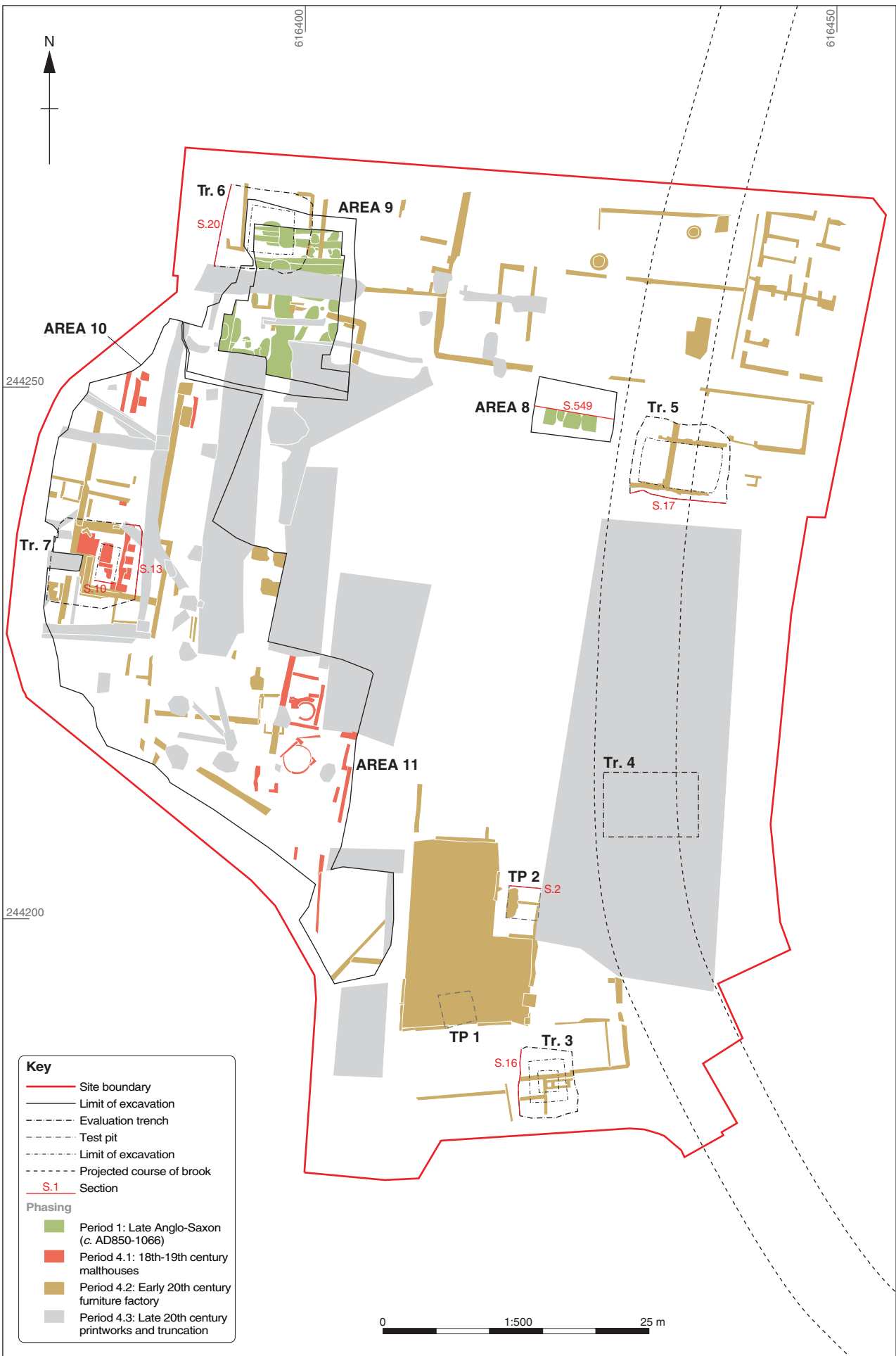


Figure 5: Overall plan of excavation results



Figure 6: Area 8: Period 1 phase plan (Late Anglo-Saxon)

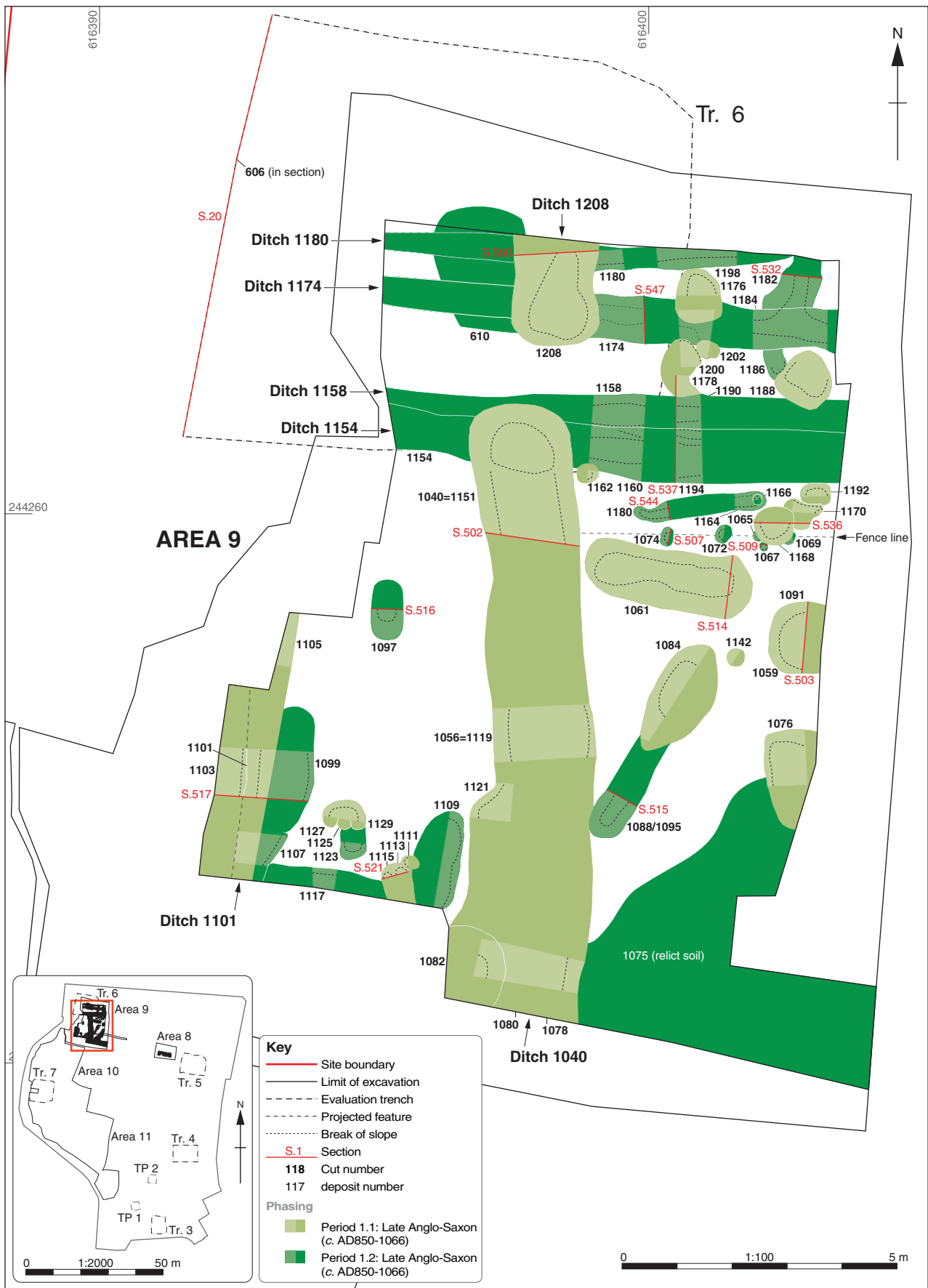
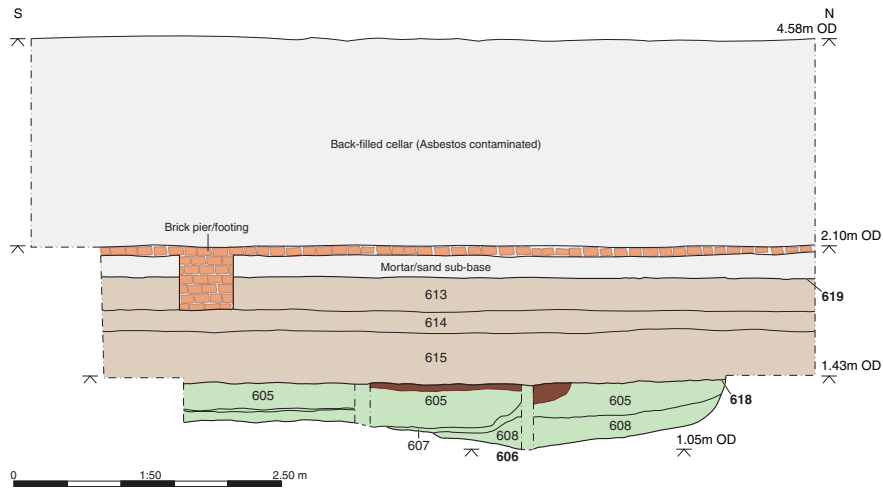


Figure 7: Area 9: Period 1 phase plan (Late Anglo-Saxon)

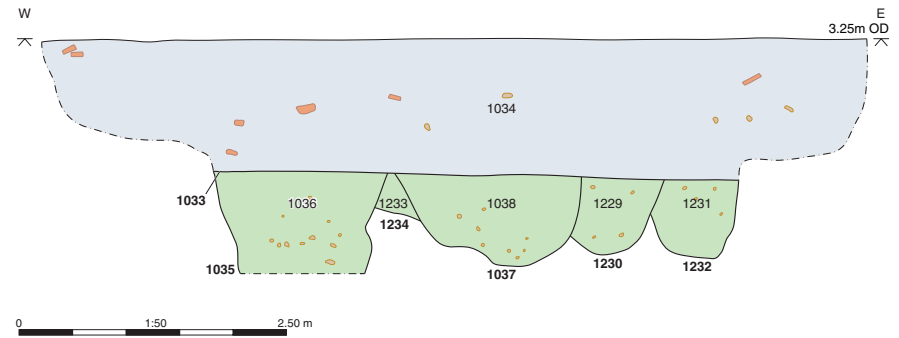
Trench 6

Section 20



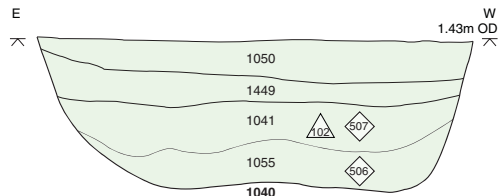
AREA 8

Section 549

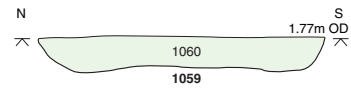


AREA 9

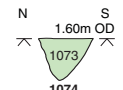
Section 502



Section 503



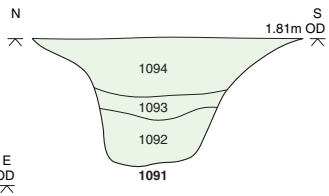
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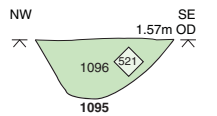
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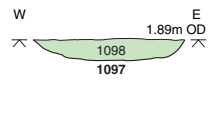
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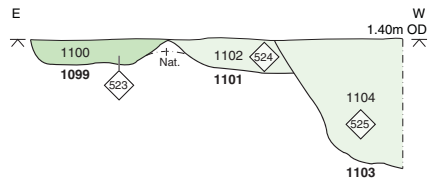
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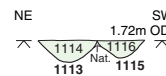
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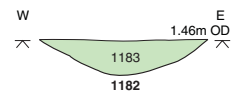
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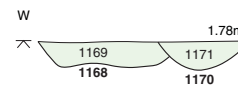
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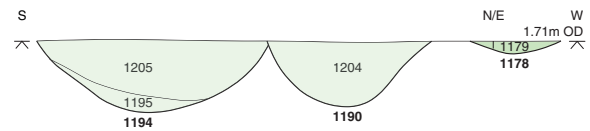
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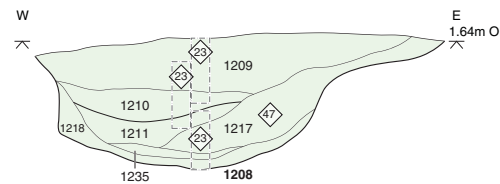
Section 536



Section 537



Section 550



Section 544



Section 547

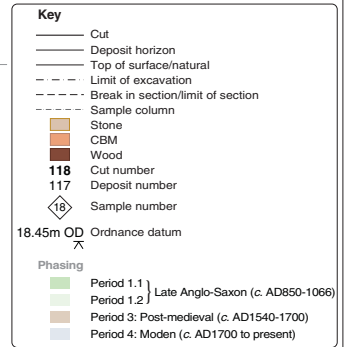
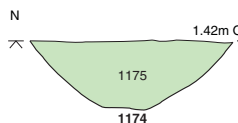


Figure 8: Period 1 selected sections

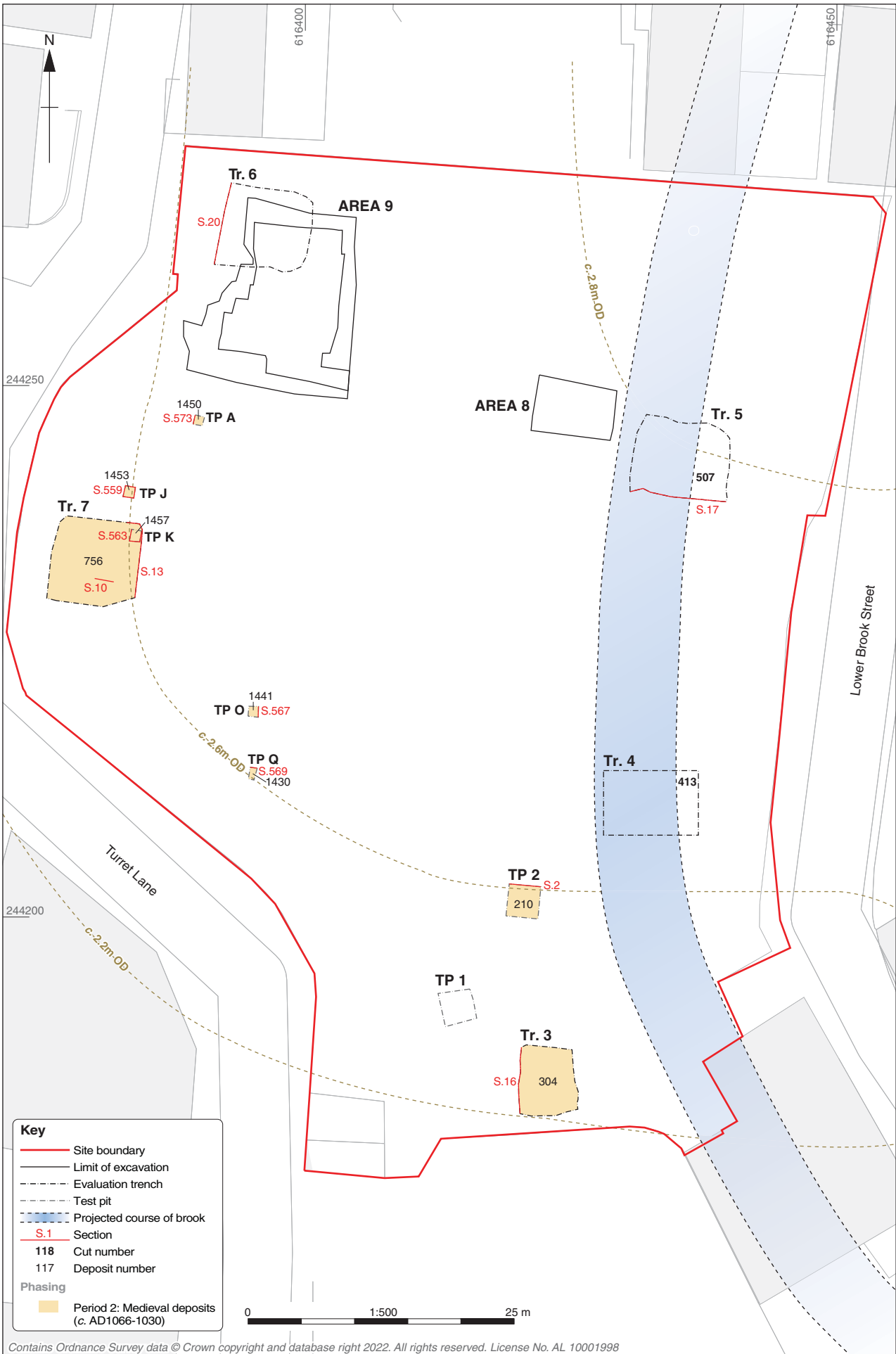


Figure 9: Suggested topography of site at end of Period 2 (medieval)

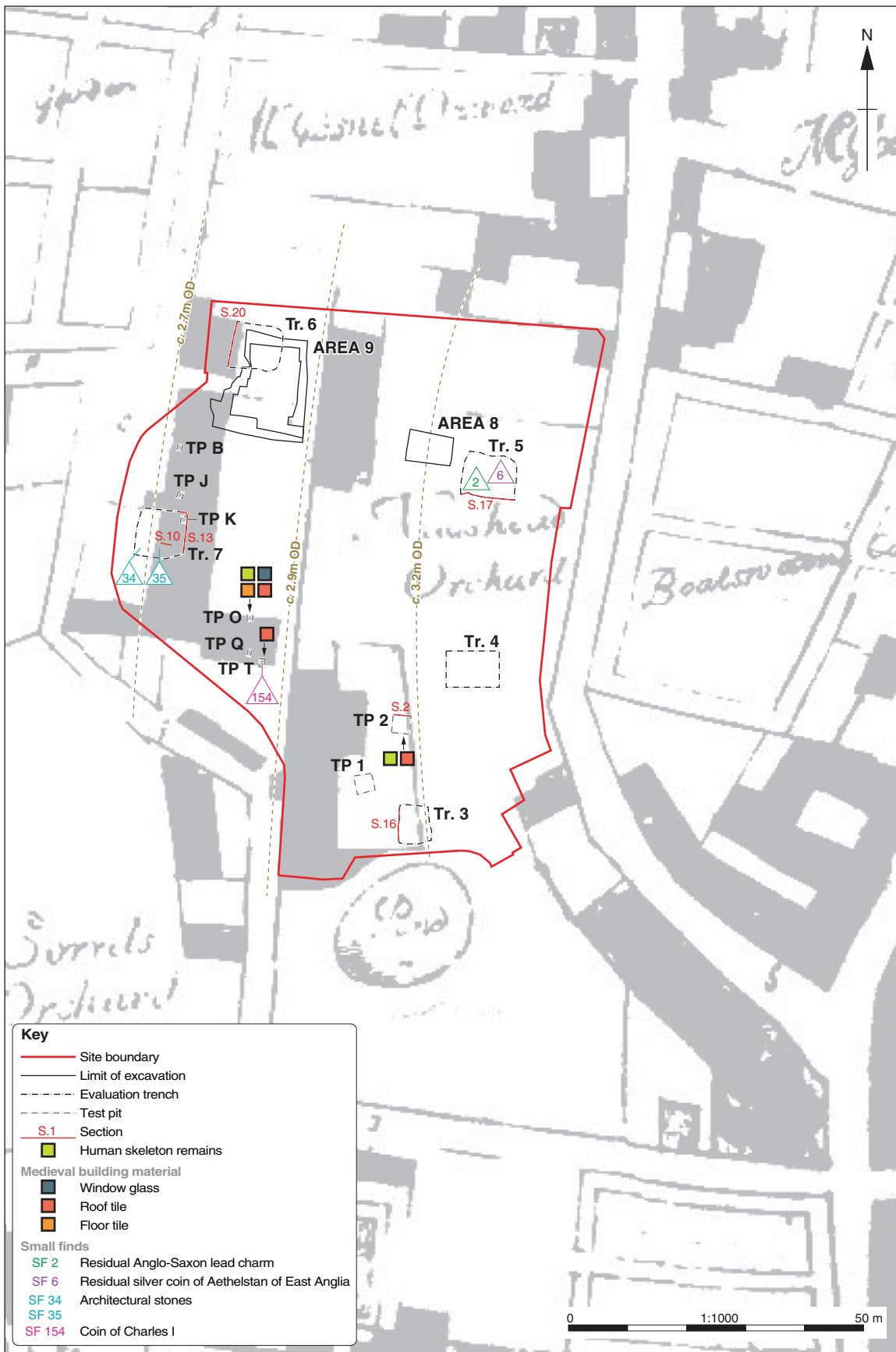


Figure 10: Suggested topography of site at end of Period 3 (post-medieval, AD1530-1700) in relation to Ogilby's map of 1675

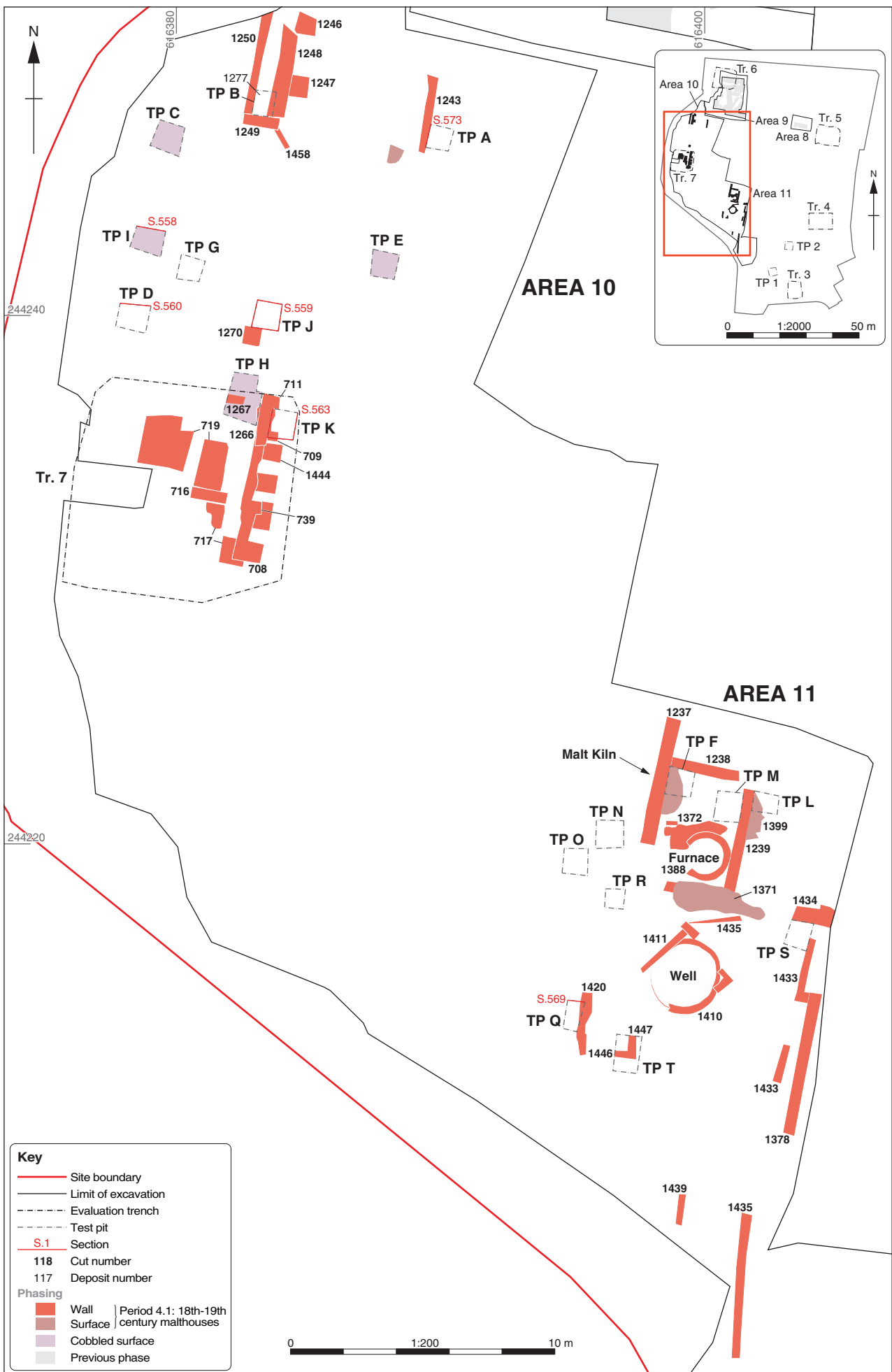


Figure 11a: Areas 10 and 11: Period 4.1 phase plan (c.18th–19th-century malthouses)



Figure 11b: Isometric image of Trench 7 showing Period 4.1 walls 708, 709, 711 and 716 and floors 717 and 719



Figure 12: Isometric image of Period 4.1 malt kiln furnace



Figure 13a: Areas 10 and 11: Period 4.2 phase plan (early 20th century furniture factory)

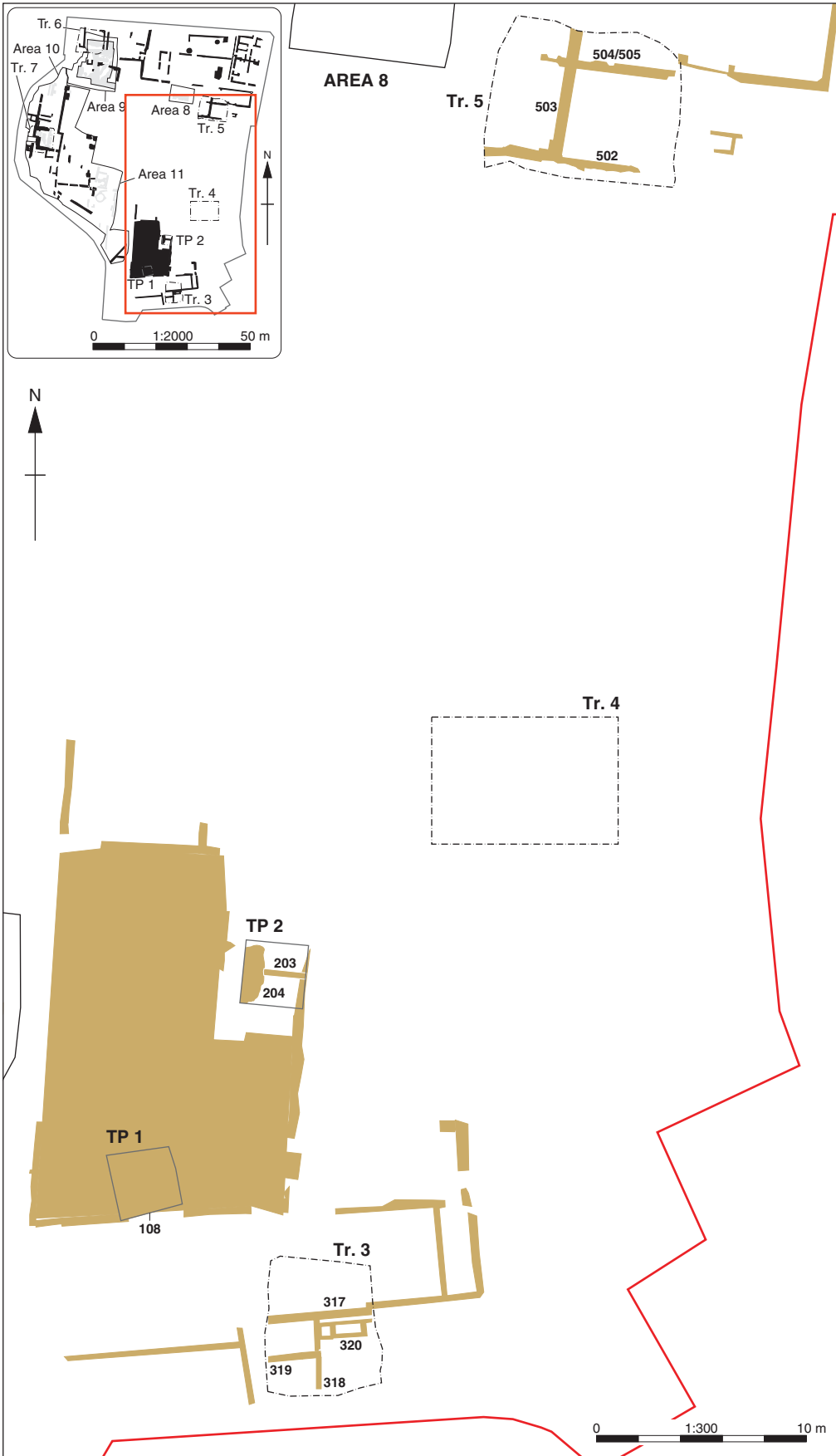


Figure 13b: Test Pits 1–2 and Trenches 3 and 5: Period 4.2 phase plan (early 20th-century furniture factory)

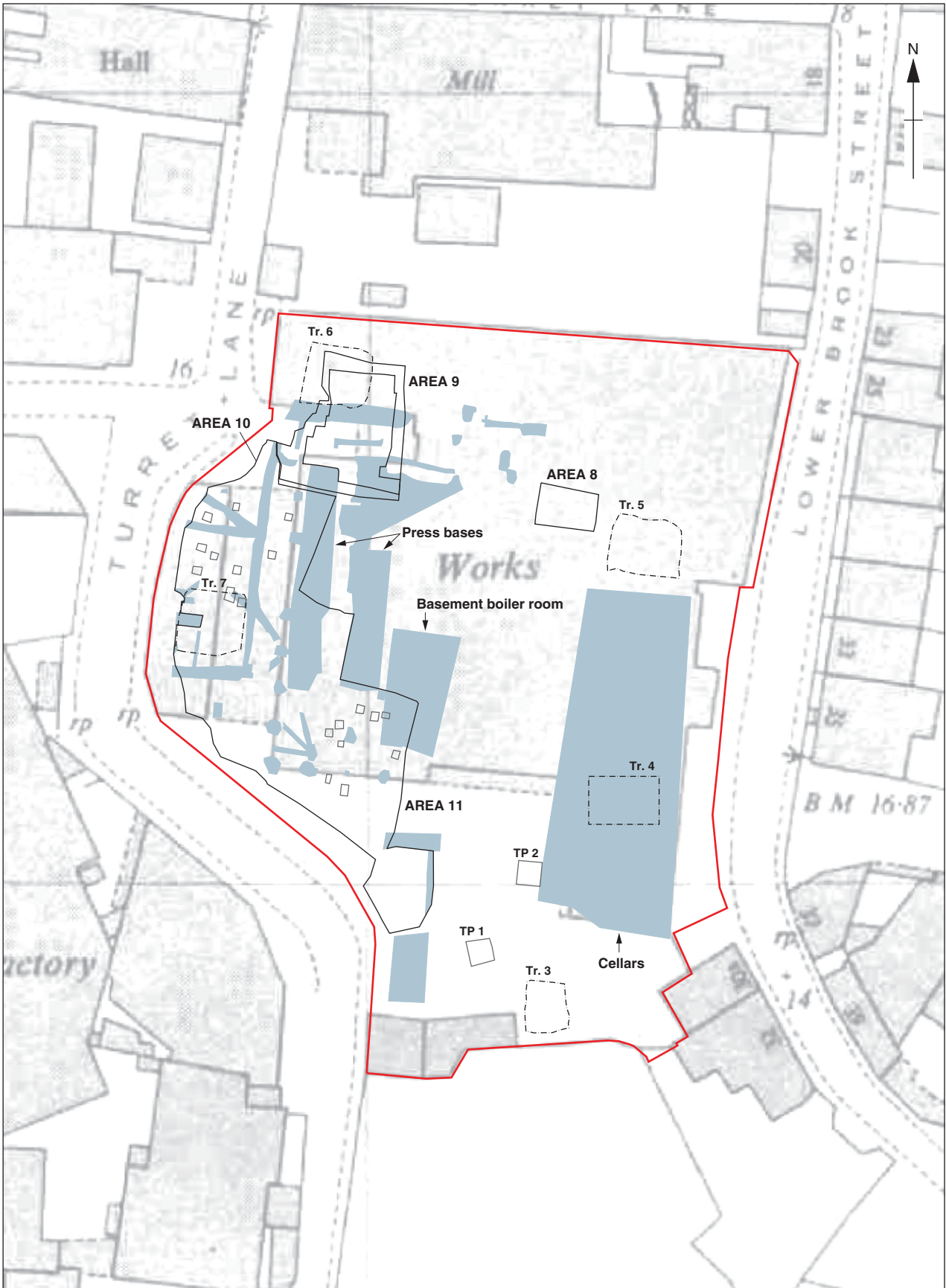
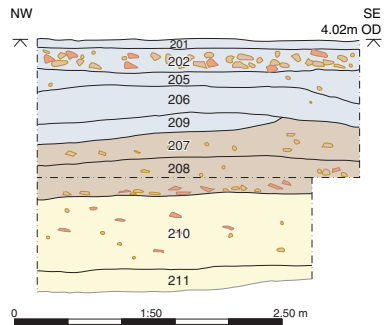


Figure 14: Period 4.3 phase plan (later 20th century printworks and truncation) overlaid on 1966 Ordnance Survey map

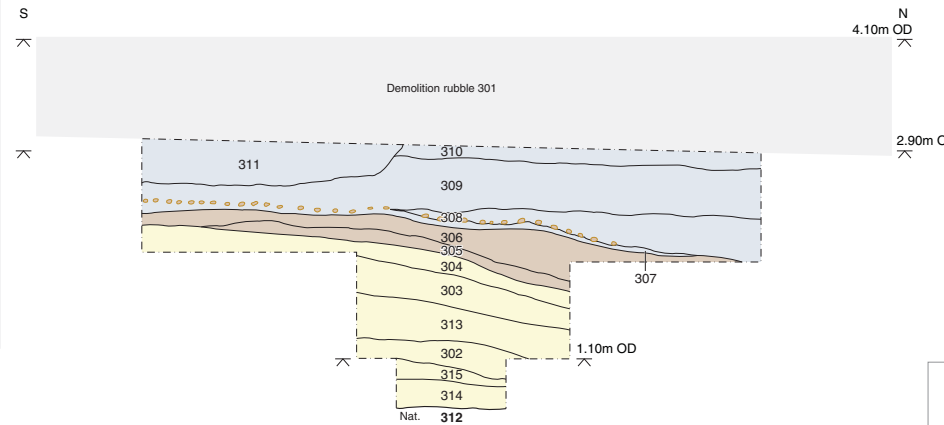
Evaluation (Webster 2016)

Section 2 - Test Pit 2

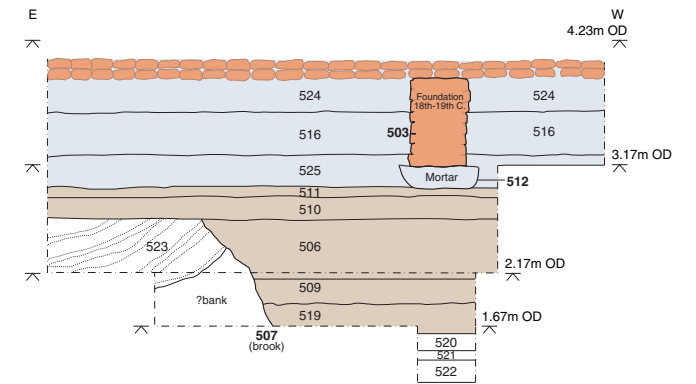


Evaluation (Fairbairn 2017)

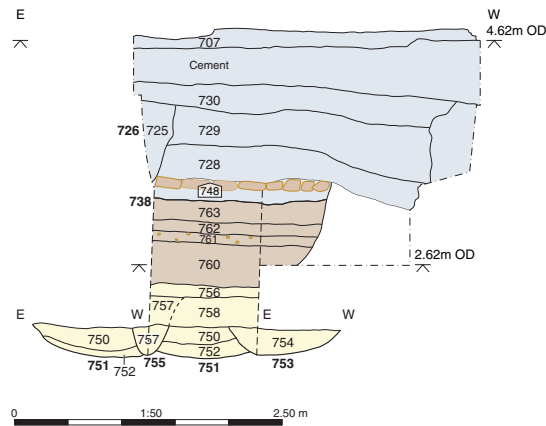
Section 16 - Trench 3



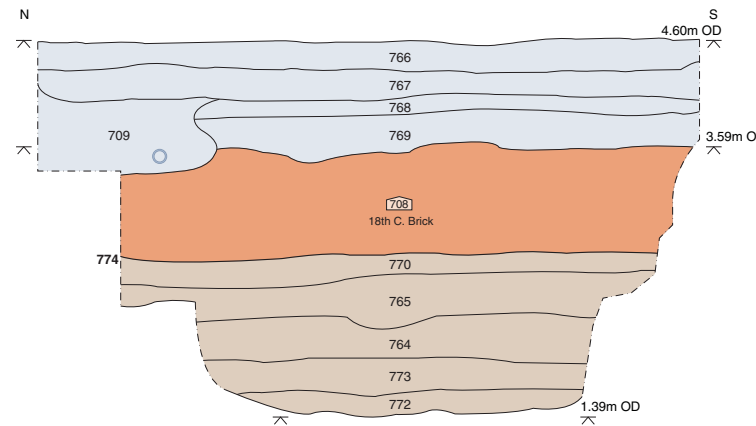
Section 17 - Trench 5



Section 10 - Trench 7

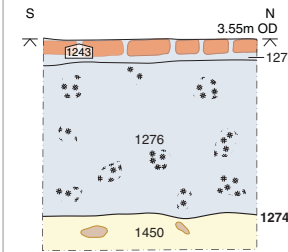


Section 13 - Trench 7

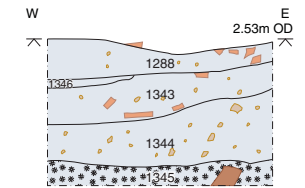


AREA 10

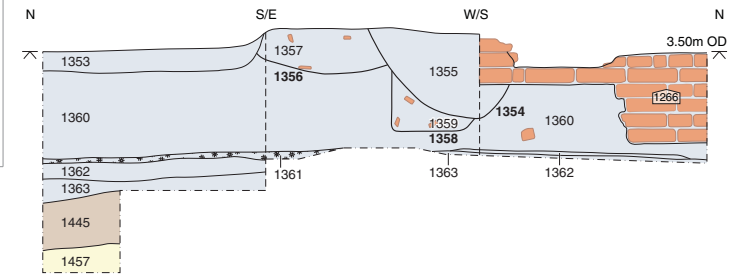
Section 573 - Test Pit A



Section 560 - Test Pit D

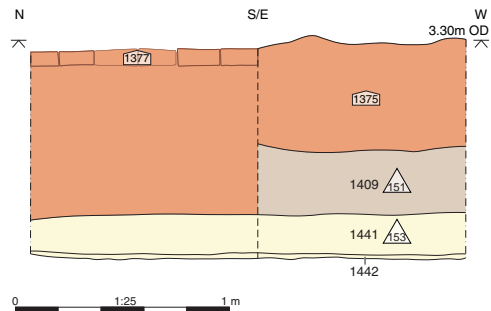


Section 563 - Test Pit K

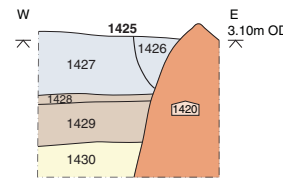


AREA 11

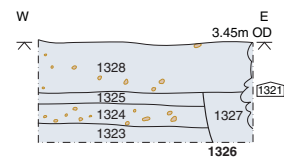
Section 567 - Test Pit O



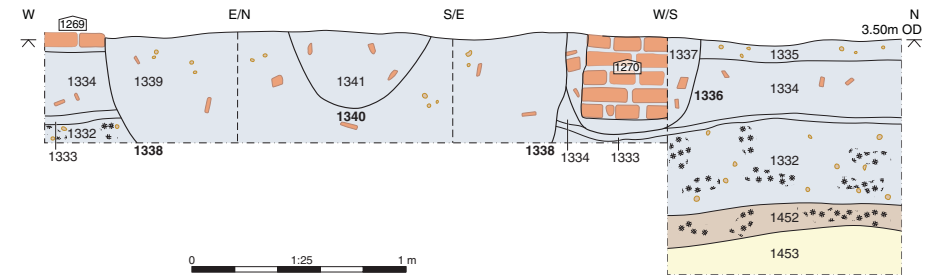
Section 569 - Test Pit Q



Section 558 - Test Pit I



Section 559 - Test Pit J



Key

- Cut
- - - Cut uncertain
- Deposit horizon
- - - Top of surface/natural
- - - Limit of excavation
- - - Break in section/limit of section
- Stone
- Pottery
- CBM
- Charcoal
- Field drain
- Cut number
- Deposit number
- Structure number
- Sample number
- Small find
- Ordnance datum
- Phasing
- Period 1: Late Anglo-Saxon (c. AD850-1066)
- Period 2: Medieval (c. AD1066-1540)
- Period 3: Post-medieval (c. AD1540-1700)
- Period 4: Modern (c. AD1700 to present)

Figure 15: Selected Period 2-4 sections



Figure 16a: Anglo-Saxon *Gipeswic* (based on Scull 2013, fig. 2.3 & Brown *et al.* 2020, fig. 1.6)



Figure 16b: Medieval Ipswich (based on Ipswich Urban Archaeology Database Imagery)

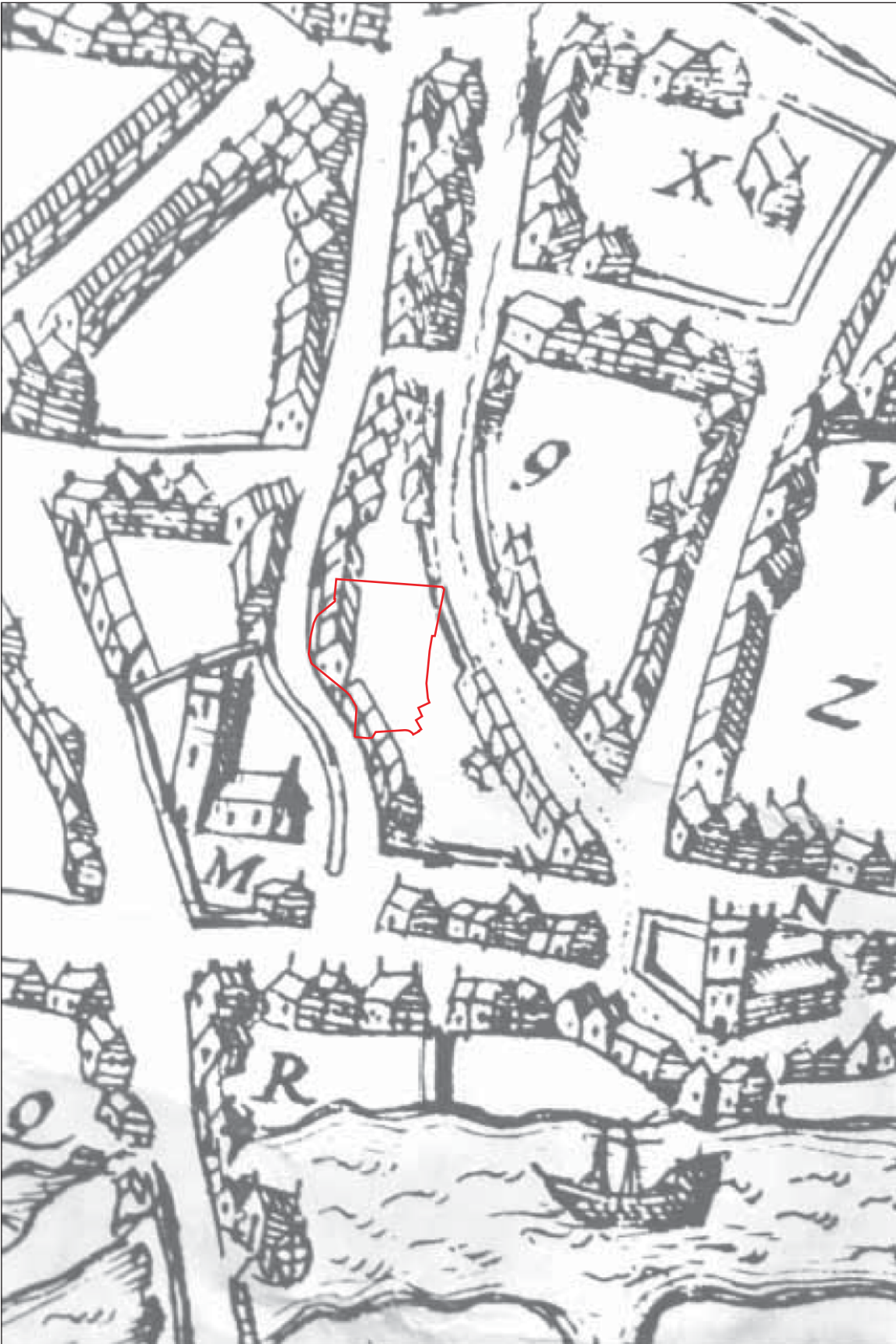


Figure 17: Speed's map of 1610

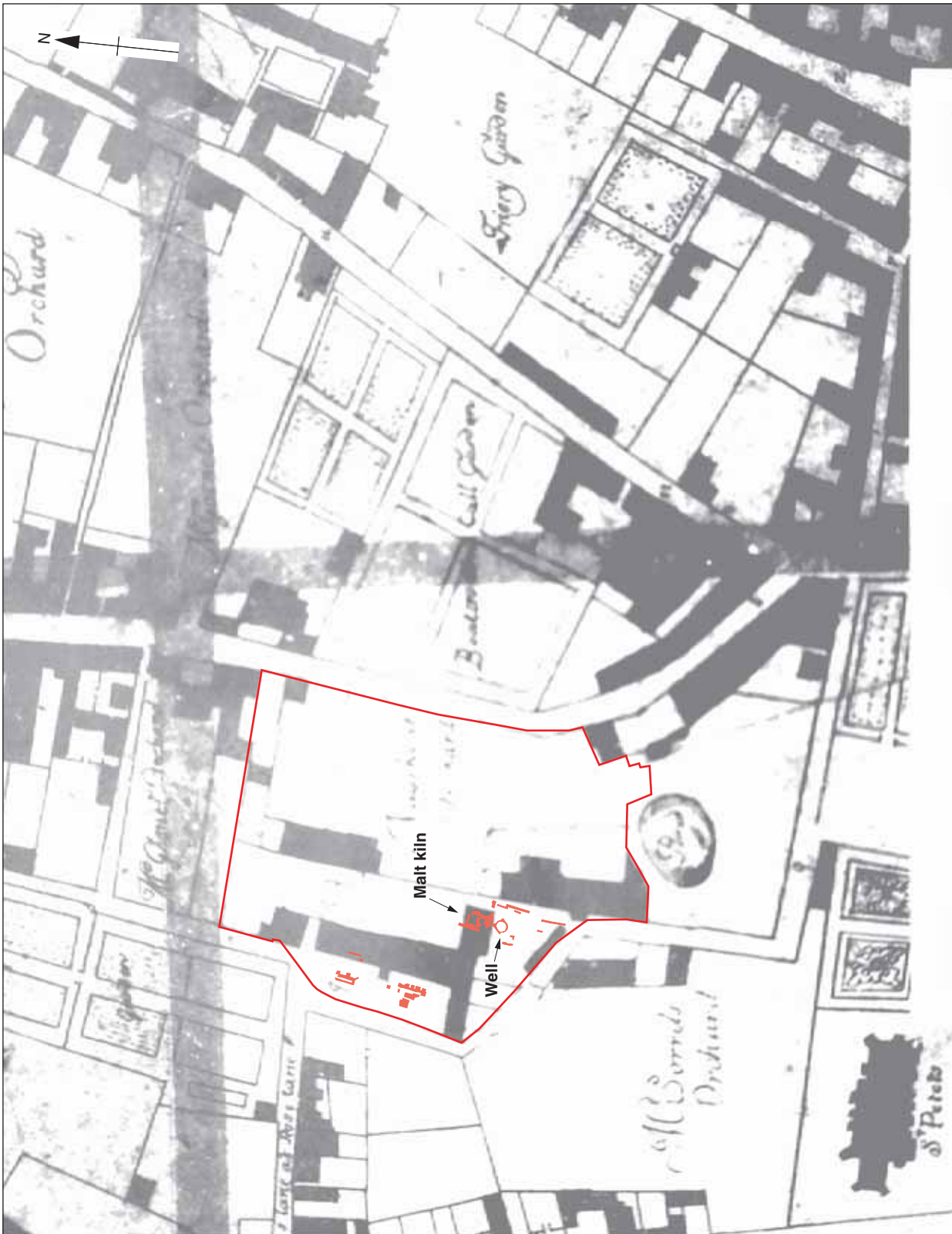


Figure 18: Period 4.1 remains overlaid on Ogilby's map of 1674

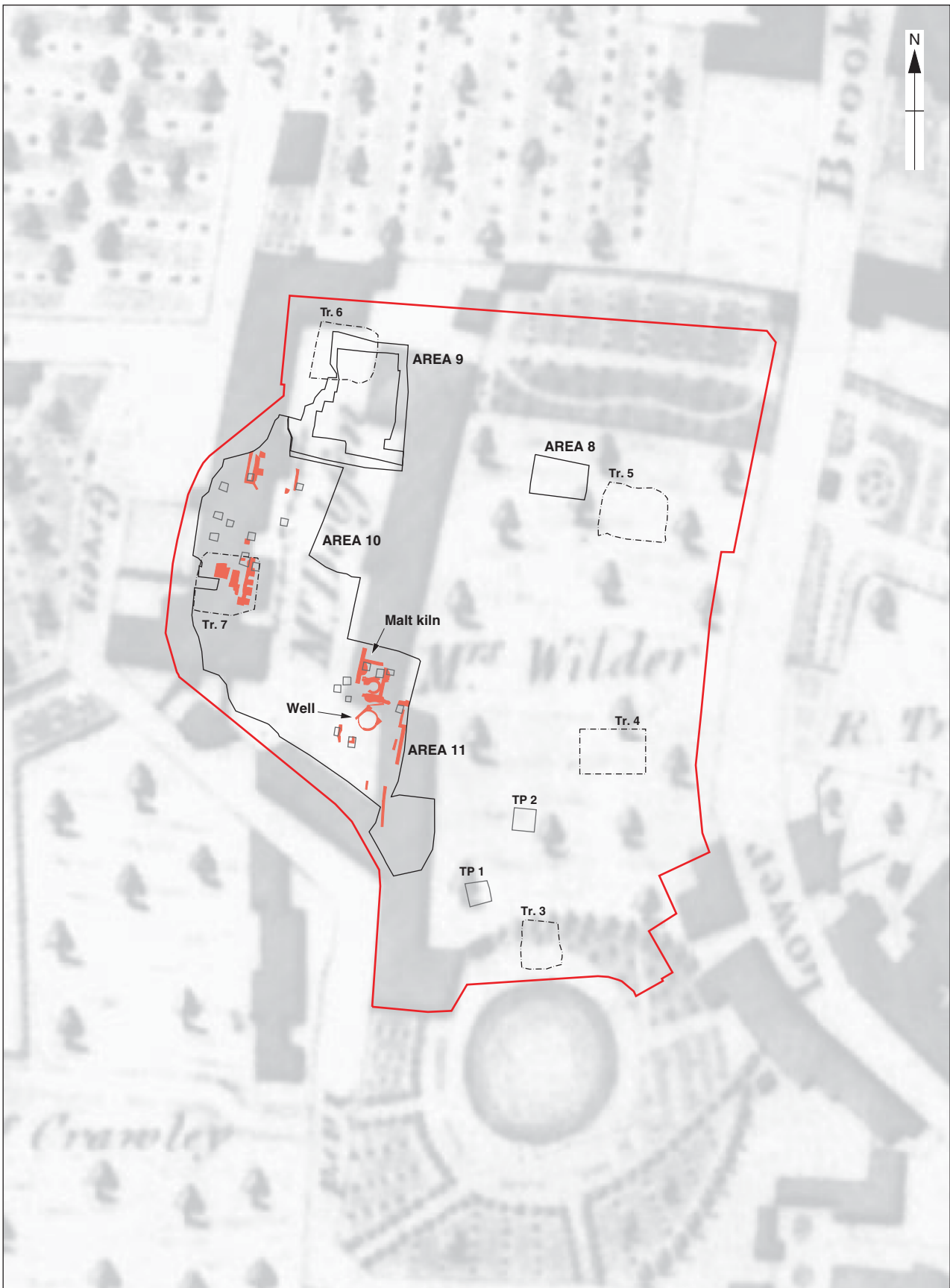


Figure 19: Period 4.1 remains overlaid on Pennington's map of 1778



Figure 20: Period 4.1 remains overlaid on the 1884 Ordnance Survey map

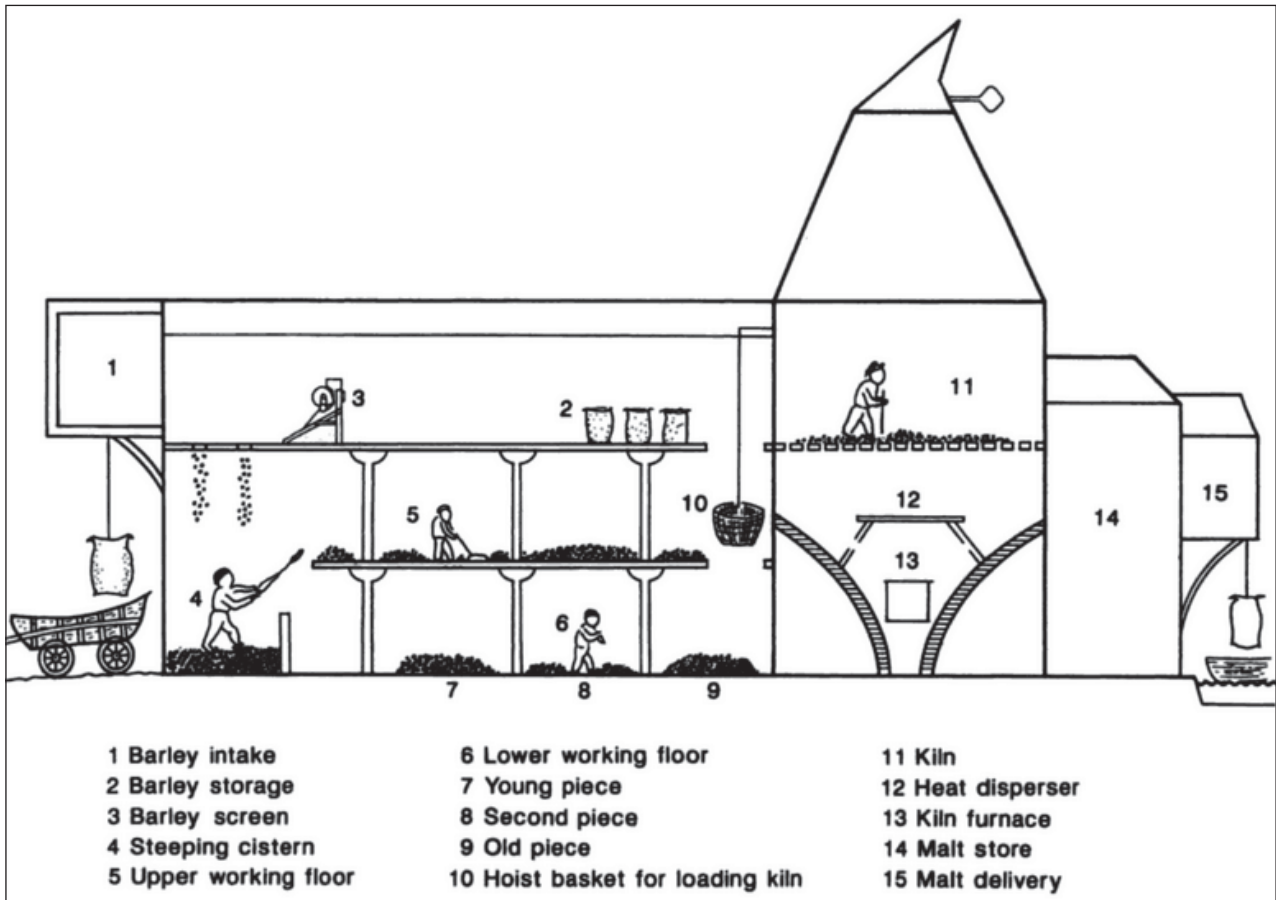


Figure 21: Diagram of a typical early 19th century two-floor malting (reproduced from Clark 1998, fig. 1.2)

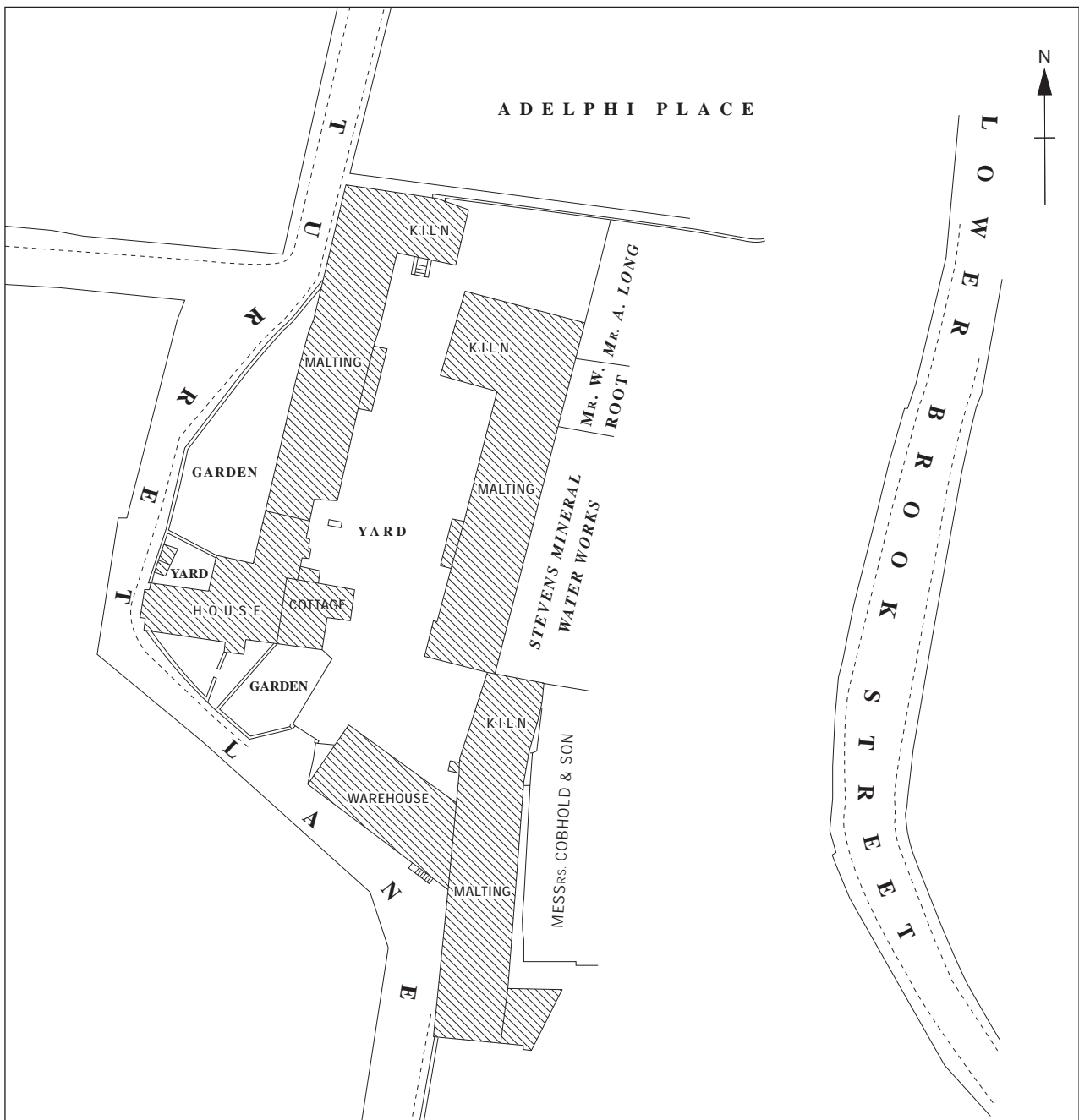


Figure 22: Plan of Turret Lane maltings in 1895 (Based on Suffolk Archives ref: HE402/1/1895/56)

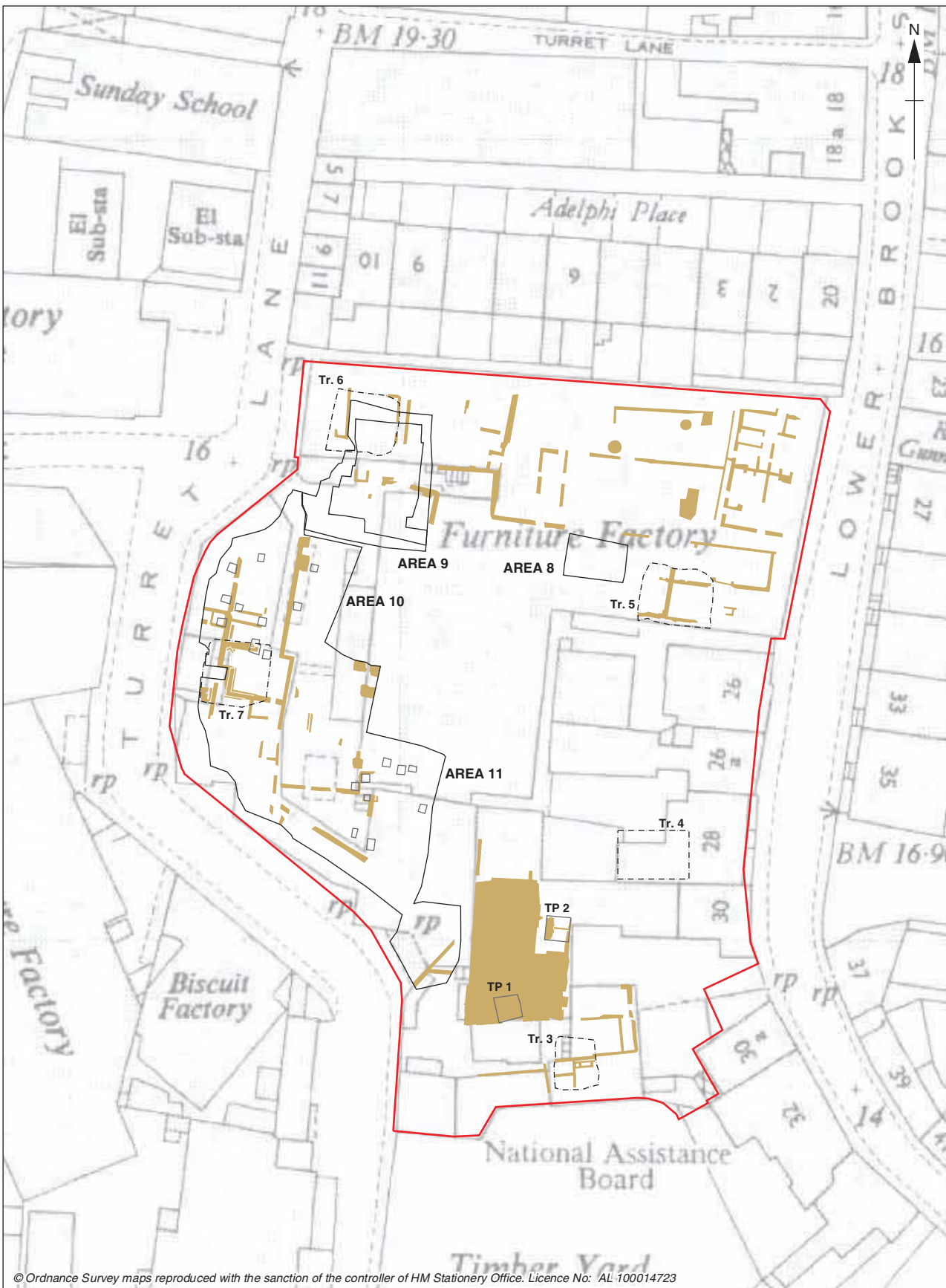


Figure 23: Period 4.2 remains overlaid on 1950 Ordnance Survey map



Plate 1: North-western extent of the development site, looking north-west



Plate 2: South-western extent of the development site, looking south-west towards St Peter's Church



Plate 3: Northern extent of the development site, looking east towards Lower Brook Street



Plate 4: Central part of the development site, looking south



Plate 5: Area 9: Period 1 Ditch 1154 (cut 1194) and Ditch 1158 (cut 1190), looking west



Plate 6: Area 9: Period 1 ditch 1208, looking north



Plate 7: Area 9: Period 1 posthole **1188** with *in situ* post, looking north



Plate 8: Area 9: Period 1 pit **1061**, looking east



Plate 9: Area 10, Test Pit F: Period 4.1 walls **1237** and **1238**, looking west



Plate 10: Area 10, Test Pit M: Period 4.1 walls **1238** and **1239**, looking east



Plate 11: Area 11, Test Pit S: Period 4.1 walls **1433** and **1434**, looking east



Plate 12: Area 11, Test Pit Q: Period 4.1 wall **1420**, looking east



Plate 13: Area 11, Test Pit P: Period 4.1 well 1410, looking east



Plate 14: Area 10, Test Pit C: Period 4.1 possible road or yard surfaces 1314-7, looking north



Plate 15: Area 10, Test Pit B: Period 4.1 walls **1248-50**, looking south



Plate 16: Area 10: Period 4.2 walls **1268, 1273, 1347**, etc, looking south



Plate 17: Area 10: Period 4.2 walls 1245=1261, etc, looking north-east



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