Medieval flood deposits, a post-medieval structure and post-medieval groundlevelling at the Former Dairy Depot Austin Street King's Lynn

Archaeological Evaluation Report

oxfordarchaeology east east east

January 2010

Client: Thornalley Funeral Services Ltd

OA East Report No: 1153
OASIS No: oxfordar3-68748
NGR: TF 62126 20400

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Medieval flood deposits, a post-medieval structure and post-medieval ground levelling at the

Archaeological Evaluation

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Report Date: June 2010

Report Number:	1153
Site Name:	Former Dairy Depot
HER Event No:	NHER 53200 (Event No. ENF 123670)
Date of Works:	2/12/09-10/12/09
Client Name:	Thornalley Funeral Services Ltd
Client Ref:	N/A
Planning Ref:	09/01577/F
Grid Ref:	TF 62126 20400
Site Code:	ENF 123670
Finance Code:	XNF KLA09
Receiving Body:	Norfolk Museum and Archaeology Service
Accession No:	ENF 123670
Prepared by:	Rachel Clarke
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Summary

An archaeological evaluation was conducted between 2nd and 10th December 2009 by Oxford Archaeology East at the former Dairy Depot, Austin Street, within the historic core of King's Lynn. A single trench measuring approximately 4m x 4m was excavated within the footprint of a proposed new building, to a depth of c.2m.

The earliest identified deposits appear to be the result of flooding and suggest that this part of King's Lynn, which although situated within the medieval walled town, was located within a low-lying area of marshland. By the 15th/16th centuries reclamation of this marginal area was underway with the dumping of large quantities of soil and general refuse, presumably originating from a variety of sources within the nearby occupied parts of the town. The presence of moderate quantities of pottery, medieval bricks, roof and floor tiles in addition to a fragment of strap end from a book fitting could in part represent demolition from ecclesiastical institutions, perhaps the nearby Austin friary, following the Dissolution. The faunal assemblage includes evidence of industrial waste, perhaps leatherworking, in the vicinity and complements the results from the nearby Lidl site (NHER 31393) adjacent to Norfolk Street.

The sloping nature of many of the dumped deposits, combined with the rapid ingress of water in the lower parts of the trench, suggest that a former fleet or stream may once have flowed nearby. Early maps of the town show a fleet to the west of the site, roughly in the location of what is now Austin Fields. This joined Fisherfleet to the north, and another east-west fleet to the south; a bridged crossing also existed at the junction with Hopmans Way (now Austin Street). By the late 18th century this fleet had disappeared, having presumably been infilled or culverted.

The only clear evidence of occupation on the site comprises the remains of part of an insubstantial timber structure of unknown function and form that probably dates to the 17th or 18th centuries. Intermittent flooding may still have been an issue as further ground levelling continued through the 18th and into the 19th centuries, with no further evidence of structures or associated activity on this part of the site until the 20th century.

1 INTRODUCTION

1.1 Location and scope of work

1.1.1 An archaeological evaluation was conducted within the historic core of King's Lynn at the former Dairy Depot, Austin Street.

1.1.2 The proposed development includes the construction of a single building on behalf of Thornalley Funeral Services Ltd. The development encompasses a total area of 2000m^2, of which 455m^2 comprises the new build area.

1.1.3 This archaeological evaluation was undertaken in accordance with a Brief issued by Ken Hamilton of Norfolk Landscape Archaeology (NLA, Planning Application 09/01577/F), supplemented by a Specification prepared by OA East (formerly Cambridgeshire County Council's CAM ARC).

1.1.4 The work was designed to assist in defining the character and extent of any archaeological remains within the proposed redevelopment area, in accordance with the guidelines set out in *Planning and Policy Guidance 16 - Archaeology and Planning* (Department of the Environment 1990). The results will enable decisions to be made by NLA, on behalf of the Local Planning Authority, with regard to the treatment of any archaeological remains found.

1.1.5 The site archive is currently held by OA East and will be deposited with the appropriate county museum in due course.

1.2 Geology and topography

1.2.1 King's Lynn lies in an area of fluvial drift and alluvium that overlies the Kimmeridge Clay of the Fen Basin (BGS 1995, sheet 145).

1.2.2 The site is located in what appears to have been a somewhat marginal area within the later northern expansion of the medieval town known as 'New land'. Cartographic evidence indicates that this area remained relatively open throughout the medieval and post-medieval periods and was, until possibly the late 18th century, surrounded by a number of channels that linked to Fisherfleet to the north and another stream or fleet to the south (Fig. 2).

1.2.3 The current ground surface is relatively flat at around 5mOD; the site is bounded by Austin Street to the south, Austin Fields to the west and commercial properties to the north and east.

1.3 Archaeological and historical background

1.3.1 King's Lynn is a major medieval and post-medieval centre of the East Anglian region although relatively few archaeological investigations had taken place when the Regional Research Agendas for the Eastern Counties was published (Ayers 2000, 27). Since then a growing body of work has been undertaken and Ayers (unpublished, 61) includes a number of research areas that future work in the town can contribute towards. These include research into the impact of post-conquest foundations on the hinterland and the development of urbanism, particularly in relation to specialist centres and ports.

1.3.2 King's Lynn was founded originally as the settlement of Lynn sometime before 1086, and is listed in the Domesday book as a number of salt houses (Brown 1984). It later became Bishop's Lynn, when it was taken under the wing of the Bishop of Norwich in

the late 11th century. The town's importance as a centre of commerce steadily increased during the 13th century, especially after the diversion of the Great Ouse via Lynn which served to connect the port with all of the surrounding fenland (Parker 1971, 6-7).

1.3.3 By the 14th century, the town ranked as the third port of England. It still retains two buildings that were warehouses of the Hanseatic League that were in use between the 15th and 17th centuries. When Henry VIII took over the lordship of the town it was renamed King's Lynn (Alsford 2008).

1.3.4 The salt works on which Lynn was founded may also have contributed to the land reclamation which allowed Lynn to grow into a major urban centre and port. Numerous small and larger watercourses, known as fleets, formed part of the townscape (Alsford 2009).

1.3.5 The settlement was originally located between two tidal fleets, the Purfleet and Millfleet (Alsford 2009). By the middle of the 12th century settlement had spread north of the Purfleet to Fisherfleet and the settlement here was known as “Newland” (*ibid*). Other small fleets or streams sprang from the main fleets, the course of one of these appears to have run close to the site, and a mill was located in the vicinity (NHER 20415; Fig. 1). Records held in King's Lynn Borough Archive make reference to previous names of Austin Street, which forms the southern boundary to the site, as 'Hopmans Way alias Hokemannesgate alias Hokemanneslane, previously Millgate' (Catalogue reference KL/C 50/1-551).

1.3.6 Further to the south of the site is Damgate or Dampgate (Norfolk Street) which was a major east to west thoroughfare through the town and was built up by c.1200 (Richards 1990). Norfolk Street was developed on one of a series of natural banks that had been artificially heightened, and the causeway itself is referred to in 13th and 14th century documents, suggesting that this is a relatively important area of the early medieval town (Hamilton 2009).

1.3.7 The town defences are also based on a series of natural earthwork banks that were formed in the salt marsh that once surrounded the town; the eastern defences follow the line of an old sea bank. Stone walls were constructed in the late 13th and early 14th centuries. These were strengthened in the 16th century, and were replanned during the Civil War, largely following the medieval defences, the line of which is fossilised by modern streets and property boundaries. In the 18th century several sections of the walls were demolished, but some stretches of wall are still standing, as well as the town gates, including the South Gate (NHER 5486).

1.3.8 Excavations adjacent to Norfolk Street (now the Lidl supermarket; NHER 31393) to the south of the site revealed significant evidence of medieval occupation and industry (Cope-Faulkner 2000; 2005). Of national importance is the presence of a smithy and fish hook workshop; evidence of other industries including wood and bone working, copper working and perhaps brewing were also present. Well-defined plot boundaries were identified, which remained fairly static until the 19th century. A variety of structures and associated floor levels were recorded, some of which continued in use from the medieval (12th-14th century) into the post-medieval period. Various layers and a large number of pits (over 100) were also excavated; of particular importance is the presence of leather and wooden objects recovered from waterlogged deposits (Cope-Faulkner 2005, 1).

1.3.9 Other nearby sites include an evaluation at Austin Street (NHER 51102), where a late medieval or early post medieval domestic waste pit and a post medieval timber post-

built structure were recorded. A medieval kiln and post-medieval pottery (NHER 1158) were discovered adjacent to Norfolk Street to the south-west of the current site and there are numerous buildings of architectural or historical interest in the vicinity (*e.g.* NHERs 37138; 22988, not illustrated), most of which are located on or near Norfolk Street.

1.4 Acknowledgements

1.4.1 The archaeological evaluation was commissioned by Thornalley Funeral Services. Particular thanks are due to Richard Freezer (site manager), who ensured the smooth running of the site, and M. Bacon Plant Hire (especially Steve) who provided the JCB and shoring. Aileen Connor managed the project and edited this report; the fieldwork was undertaken by Mike 'Tam' Webster and the author. Additional metal-detecting was provided by Steve Critchley. Thanks are also due to Ken Hamilton (NLA) who produced the Brief, monitored the evaluation and commented on this report.

1.4.2 The finds were processed by Steve Morgan, digitising of drawings and production of report figures was undertaken by Andy Corrigan and Louise Bush, initial spot-dating was by Carole Fletcher. Pottery and CBM reports are by Sue Anderson, metalwork by Nina Crummy, tobacco pipes by Carole Fletcher, shell by Helen Stocks and animal bone by Chris Faine. The environmental samples were processed by Ross Lilley and appraised by Rachel Fosberry. An HER search was provided by Alice Cattermole and Heather Wallis kindly copied reports from the nearby Lidl site.

2 Aims and Methodology

2.1 Aims

2.1.1 The objective of this evaluation was to determine as far as reasonably possible the presence/absence, location, nature, extent, date, quality, condition and significance of any surviving archaeological deposits within the development area.

2.1.2 It was considered that the proposed development lay within an area of high archaeological potential given its location within the medieval town and proximity to known sites, in particular the Lidl site (NHER 31395) situated to the immediate south-west (see below).

2.2 Methodology

2.2.1 The Brief required that a single 4m x 4m trench be excavated within the footprint of the proposed building.

2.2.2 The size and location of the trench was dictated by the presence of substantial brick and concrete foundations, the removal of which would have potentially caused extensive damage to any buried remains in the vicinity.

2.2.3 Modern overburden was removed by mechanical excavator under constant archaeological supervision with a wheeled JCB-type excavator using a toothless ditching bucket to the level of archaeological deposits (*c*.0.5m). These were subsequently excavated largely by hand to a depth of *c*.2m below ground level.

2.2.4 Shoring was inserted once the trench had reached a depth of 1m, in accordance with current OA Health and Safety guidance. Ground water ingress below *c*.1.8m (Plate 5) necessitated the constant use of a pump to allow excavation to proceed. Once this became impractical a hand auger was employed to investigate the earliest deposits to a depth of *c*.3.25m (1.75mOD) below ground surface (*c*.5mOD).

2.2.5 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. Metal-detecting was hampered by both the metal shuttering and the presence of steel reinforcing and other modern metal on the site.

2.2.6 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 colour and monochrome photographs were taken of all relevant features and deposits, supplemented by digital images. A matrix was compiled on site, this has since been digitised and phased using Stratify v.1.5 (Appendix A2).

2.2.7 Bulk environmental samples were taken from a range of deposits for the retrieval of micro- and macro-botanical environmental remains.

2.2.8 Demolition of the former dairy building had largely been completed before the evaluation commenced, although breaking up and removal of a reinforced concrete slab and other ground clearance was still being undertaken. Poor weather, combined with ground water ingress, hampered excavation of the earliest/lowest deposits (Plate 5).

3 RESULTS

3.1 Introduction

3.1.1 A sequence of deposits spanning the medieval to modern periods was revealed within the trench. Five phases have been identified based on stratigraphic relationships, and integration with ceramic and other artefactual dating evidence. These broadly correspond to Clarke and Carter's Phases II to IV (1977, 3).

3.1.2 The results are outlined in chronological order below; a context list, phased matrix and full artefact and environmental reports are included within the appendices.

3.2 Phase 1: Medieval (Fig. 3, Plates 1 and 2)

3.2.1 The earliest identified layers comprise a series of probable flood deposits largely revealed by three hand-augered samples (Augers 1-3) at depths of between *c*.2 and 3m below ground level (*c*.3 to 2m OD). These fairly homogeneous deposits sloped gently from east to west and extended across the trench and, presumably, beyond its limits. Despite the use of a pump, all three auger samples were under water, resulting in the loss of the upper portions of the samples when they were removed.

3.2.2 Auger 1 (SE corner; Fig. 3, S.D):

64: very dark brown peaty deposit revealed at base of auger sample, *c*.5cm thick, possibly a peat layer or patch of organic material within a silt layer as it was not present in nearby auger 2. Earliest deposit in this auger.

63: mid orange brown sandy clay silt, 0.17m thick with rare small stones, very firm, similar to 60 in Auger 2.

62: dark grey slightly clayey silt, at least 0.3m thick, with occasional small stones, possibly a continuation of overlying deposit 58

3.2.3 Auger 2 (SE corner; Fig. 3, S.D):

61: dark grey silty clay, no inclusions, at least 0.3m thick (base not revealed). Earliest deposit in this auger sample

60: mid orange brown sandy clay, very compact but relatively thin (*c*.10cm)

3.2.4 Auger 3 (W edge; Fig. 3, S.A):

68: pale yellowish grey sandy clay, unknown thickness, under water. Earliest deposit in this sequence

67: orangey grey sandy silt with patches of organic matter/concretions, 0.2m thick, overlying 68; similar to 63 to east

66: mid greyish brown clay silt with orange striations, 0.15m thick. Possibly a continuation of 65.

3.2.5 Overlying the augered deposits was an extensive *c*.0.5m-thick layer (58/65; Fig. 3, S.A & D) of dark grey odorous clayey silt with common shells and patches of organic matter. This contained moderate quantities of animal bone, brick/tile and pottery and may also be a flood deposit or perhaps a dumped layer that subsequently became waterlogged.

Summary of finds and environmental remains

3.2.6 Two sherds of medieval glazed ware pottery, one of unidentified provenance, were recovered from layer 58 and are broadly datable to the late 12th to 14th centuries. Four fragments of 13th–15th-century roof tile were also present within this deposit, in addition to an iron clench bolt (SF10), two cattle bones and a small quantity of shells (oyster, cockle, whelk, mussel).

3.2.7 An environmental sample from this deposit was not dissimilar to those from later layers and contained small amounts of fish bone, fish scales, egg shell, elder seeds, charred wheat grain, saw-sedge leaf and hammerscale.

3.3 **Phase 2: 15th to 16th century** (Fig. 3, Plates 1 and 2)

3.3.1 A series of dumped deposits sealed the Phase 1 layers. Some of these were quite extensive (56, 53 and 48), whilst others were more localised (*e.g.* 49, 55). Most contained small to moderate quantities of finds, mainly pottery, animal bone, brick, tile and shell.

3.3.2 The earliest of these (57) was a 0.15m-thick mid greyish brown clay silt with occasional finds, charcoal, and small stones, that tipped slightly to the west. Two similar layers (56 and 59) of pale greyish brown and yellow silty clay, with a cumulative thickness of 0.3m, formed the next deposits in this sequence.

3.3.3 Overlapping 56 to the north was a 0.12m-thick dump of yellowish brown clay silt (49) with frequent mortar lumps/patches. This was confined to the north-east corner of the trench, extending over an area of *c*.1.5m.

3.3.4 Sealing 59 and 49 were two similar dumped layers of fairly dark greyish/yellowish brown silt clays/clay silts (53 and 55) containing relatively large amounts of general occupation debris including pottery, animal bone, shell, charcoal *etc*, and discarded building materials. The uppermost and most extensive of these (55) tipped towards the west, increasing in thickness from 0.1m to 0.3m, effectively levelling out the ground surface.

3.3.5 A 0.15m-thick dump of mixed pale yellow and mid brown silt clay (54) with rare small stones, chalk/shell pieces and fragments of brick and tile overlay 53. This deposit was very similar to 48 above and was confined to the south-east corner of the trench, tapering from east to west.

3.3.6 This was followed by two contemporary deposits comprising a 0.25m-thick layer of slightly reddish-brown clay silt (51) located within the western end of the trench and a mixed yellowish brown silty clay layer with pale yellow mottles (47) of similar thickness that extended to the east.

3.3.7 Overlying these was a 0.15m-thick layer of mixed pale greyish brown silt clay (48) with occasional small stones that extended across the trench, sealing earlier deposits and tipping towards the west. The similarity with 54 below may indicate a common source for this material.

3.3.8 The final deposit in this sequence comprised a 0.3m-thick layer of dark grey brown clay silt (50) with common brick and tile fragments and occasional mortar pieces that was confined to the western part of the trench. This layer dipped from from south-east to north-west, levelling up the surface of layer 48.

Summary of finds and environmental remains

3.3.9 Approximately a third of the pottery in this phase is residual, although some late medieval pottery is present, including German and Dutch products, as well as local and regional wares. All Bourne D vessels were recovered from this phase. The majority of both the early brick and the roof tile groups were collected from contexts in this phase; they also contained the single Roman tile, medieval ridge and medieval floor tile. Of note is a fragment of a 'horned' spinning top finial recovered from layer 57; this type of finial would have fitted into a socketed ridge tile. A small piece of slag and an iron nail (SFs 8 and 9) were also recovered from layer 53.

3.3.10 Bulk samples from four deposits (50, 53, 55 and 56) in this phase produced similar results. Remains include small quantities of fish scale, fish bone, mammal bone, egg shell, marine shell, charred sedge seed, charcoal, hammerscale, carbonised cereal grains, charred straw, wheat chaff, saw-sedge leaf and goosefoot seed (Appendix C1).

3.3.11 This phase produced the largest group of faunal remains, mostly deriving from layers 53 and 54, with sheep/goat comprising the largest component (Appendix C2); several frog bones were also present. Small quantities of shell were also recovered; an oyster and a cockle both had pierced central holes although it is not certain whether these were man-made or natural in origin.

3.4 Phase 3: 17th to 18th century (Figs 3 and 4, Plates 3 and 4)

Structure 1

3.4.1 The earliest evidence of occupation comprised a group of ten shallow post-holes located within the south-west corner of the trench. Most of these cut a thin (4cm) stoneless layer of dark yellowish brown slightly silty clay (52) that extended for *c*.2m north-south and 1.4m east-west. This may be the remnants of a floor or construction surface.

3.4.2 The post-holes (**28**, **30**, **32**, **34**, **36**, **38**, **40**, **42**, **44**, **46** and **48**) were generally poorly-defined but were mostly sub-circular or oval in plan with shallow, concave profiles. They varied in length from 0.15m to 0.4m and in depth from 9cm to 0.15m and all contained similar yellowish or greyish brown silt clay fills with rare inclusions of charcoal, shell, stones and small tile fragments; no post-pipes were present.

3.4.3 Too little was exposed to determine the size or function of this structure. The possible recutting/clipping of one of the post-holes (**32** by **34**) might indicate that it was repaired whilst the shallow depth of most of the features suggests that they were truncated. The westernmost group of post-holes (**30**, **36**, **38** and **40**) form an approximate north-south line and could represent a possible wall-line although how this relates to the other post-holes is difficult to determine.

Summary of finds and environmental remains

3.4.4 This phase produced very few finds, the majority of which are residual. A single medieval glazed ware pottery sherd was collected from post-hole **46**, whilst two small pieces of tile, broadly datable to the 13th to 15th centuries, were recovered from **28** and **34**. A stem piece from a clay tobacco pipe (from layer 50), and shell fragments were also collected.

3.4.5 Environmental samples from one of the post-holes (**28**) and the possible floor layer (52) produced similar results to Phase 2 and includes small quantities of fish scale, fish bone, burnt egg shell, wheat grains, charcoal and hammerscale. The small group of

faunal remains comprise elements of sheep/goat, cat, amphibian remains and fishbone (thornback ray).

3.5 Phase 4: 18th to 19th century (Fig. 3)

3.5.1 Overlying Structure 1 was a further series of sixteen dumped/levelling deposits (S. A and B) similar to those described under Phase 2.

3.5.2 An extensive 0.2m-thick layer of dark yellowish brown silty clay (26) with frequent tile, stones, brick and pottery, sealed the easternmost post-holes. Those to the west were covered by a thin spread of charcoal (25) that extended over an area of *c*.1m in the south-west corner of the trench. This deposit, which overlapped 26, contained frequent fragments of clay tobacco-pipe and was very similar to later dump 12.

3.5.3 Overlying 26 was a similar deposit (23) that was only present against the western edge of the trench. Probably contemporary with 23 was a further extensive yellowish brown silty clay layer (9) that was 0.15m thick; this and 23 were overlain by a spread of charcoal-rich material (12) with clay tobacco-pipe fragments, similar to 25. This deposit was up to 0.11m thick and was limited to the south-western part of the trench.

3.5.4 An isolated spread/dump of pale grey brown silty clay (10) with chalk and small pebble inclusions was located towards the centre of the trench, overlying 12. This was sealed beneath a mid orangey brown silty clay patch/dump (11, not illustrated) against the north edge of the trench; both are undated. A further dump (22), containing brick, tile and animal bone was also recorded against the north-east edge of the trench, overlying 9.

3.5.5 These dumped deposits were sealed by a more extensive layer (7) of mottled yellowish brown silty clay containing pottery and tile, similar to 26 and 9 below. This was 0.15m thick and tipped slightly from north-east to south-west across the trench.

3.5.6 A 0.12m-thick dark greyish brown slightly peaty soil layer (6) containing pottery and animal bone *etc* sealed 7 and was present only in the northern half of the trench. Overlying this was a thin (*c.* 5cm), mixed yellowish brown and dark grey brown silt clay (21) with frequent chalk/shell flecks, tile and mortar pieces.

3.5.7 Further ground levelling comprising deposits of silty clays (20, 18) interspersed with rubble layers (19, 17, and 16) containing brick, tile and slate fragments followed. These generally extended across the trench and varied in thickness from 6cm to 0.22m, cumulatively raising the ground by 0.4m.

Summary of finds and environmental remains

3.5.8 The main datable items comprise clay tobacco-pipe fragments, particularly from spreads 12 and 25, most of which are 18th century. The majority of pottery from this group is residual, with only eight sherds being contemporary with the phase (mid 18th- to mid 19th-century date). Similarly, none of the CBM from this phase post-dates the 16th century, apart from three fragments of 19th or 20th century transfer-printed tile from layer 7.

3.5.9 Most of the metal finds were recovered from this phase (layers 7, 25 and 26). these include a farthing of George II (SF1) datable to 1730-9, a machine-made clasp or buckle (SF2), a shoe or boot buckle (SF3), a fragment of strap-end from a medieval book (SF4), a button (SF5) and a curtain ring (SF6).

3.5.10 An environmental sample from layer 26 produced very similar remains to the preceding phases (fish scale, fish bone, egg shell, fired clay fragments, small bone, wheat grain,

charcoal). Faunal remains included a number of butchered sheep/goat metapodia, along with a mandible from an animal around 2-3 years old at death. Small numbers of butchered cattle long bones were recovered, along with an adult goose humerus and further amphibian remains.

3.6 Phase 5: Modern (Fig. 3, Plate 4)

3.6.1 Modern activity comprised brick and concrete foundations (**3**, 4 and 5) *c.*1m deep, in addition to demolition cuts (**15**) and rubble layers (14 and 13) over 0.5m thick.

4 Discussion and Conclusions

4.1 Medieval

4.1.1 The earliest recorded deposits appear to be the result of flooding and indicate that this part of King's Lynn, which although situated within the medieval walled town (New land), was a fairly low-lying area of wasteland, marshland, that may have been seasonally used as meadow..

4.1.2 The general paucity of finds from these deposits and absence of features (albeit limited to a very small sample) in this period reiterates the site's peripheral nature in relation to the main settlement foci. Dating of the deposits is uncertain although the small quantity of pottery and tile indicates that they are probably medieval. They clearly pre-date the Phase 2 dumped layers, which are early post-medieval (15th to 16th century, see below), but could conceivably be later medieval.

4.1.3 Extensive flood deposits were also identified in one of the trenches at what is now the Lidl site (NHER 31393, Fig.1), adjacent to Norfolk Street to the south-east of this evaluation. These were interpreted as representing a single major flood event, probably of the Ouse and surrounding fleets (Cope-Faulkner 2000, 9) during the late medieval period (1350-1500). Below the flood deposits were a series of Phase II (1250-1350) layers comprising black organic sandy silts, bluish grey and greenish grey clays, one of which was thought to represent a turf line (*ibid*, 5). These clay layers are perhaps more similar in nature to those encountered during this evaluation and were observed at a height of *c.*3.3m OD, which although higher than those at Austin Street (between 2 and 3m OD), is a more comparable level.

4.1.4 Clarke and Carter (1977, 413) noted that at the time of writing there was no evidence to suggest that 'what was to become the New Land was any marshier than the vicinity of the market place...yet it was not settled until the mid 12th century' despite the presence of the major east to west route, Damgate (Norfolk Street). The results of this evaluation suggest that this area was in fact probably fairly uninhabitable in the medieval period. Parker's map (1971, fig. 5) of 13th century Lynn incorporating the Survey of the Newland shows tenements along both sides of Hopmans Way (now Austin Street). These are all to the west of the bridge crossing Hopmans Way (see Fig. 2), and there are no properties shown to the east of the bridge in the area of the current site. A corn (water) mill is depicted to the east of the site, where there is another fleet and the road bends southwards to join with Damgate.

4.1.5 The presence of very small quantities of cattle bones, shell and other environmental remains (fish scale, fish bones, egg shell, seeds, charred wheat grain, saw-sedge leaf, hammerscale) does, however, suggest that some midden or industrial waste was either dumped or washed into these deposits.

4.2 Early post-medieval

4.2.1 By the 15th or (more likely) 16th centuries, reclamation of this marginal area was underway with the dumping of large quantities of soil and general waste, presumably originating from a variety of sources within the nearby occupied parts of the town. As with later phases, some of the thicker and more extensive loamy deposits, such as 47 which is also noticeably level compared with underlying dumped deposits, could be cultivation layers, indicating that this area was turned over to agriculture towards the end of this phase.

4.2.2 The presence of moderate quantities of medieval bricks, roof and floor tiles within the various dumped deposits could feasibly represent demolition material from ecclesiastical institutions, such as the nearby Austin friary (Fig. 1), following the Dissolution. Another possible source for some of this material might be the Hospital of St John located *c.*120m to the south-east, and perhaps the recently-excavated occupation/industrial site adjacent to Norfolk Street.

4.2.3 Some of the finds have parallels with objects from Dissolution deposits from elsewhere. These include a sherd from an unusual vessel which may be a puzzle jug or mug that was pierced at the neck and decorated with fine combing; the latter a feature of several jugs from Dissolution contexts at Binham Priory (Appendix B1). Of note also in the ceramic assemblage was a rimsherd from a 'Tudor Green' lobed cup, which is a fairly unusual find from the town.

4.2.4 Other recently excavated sites in King's Lynn have also produced large quantities of estuarine tiles similar to those from this site. These include Paradise Road (located close to the site of the Dominican Friary), Friars Street (close to Whitefriars) and Hextable Road (close to Austin Fields). The foundation of several friaries in 13th-century Lynn coincided with an upsurge in brick and tile use in East Anglia, and it is likely that much of the tile found at Austin Street and these other sites was commissioned or produced by the builders of these religious houses. Its deposition in late medieval contexts across the town is likewise, at least in part, related to their Dissolution and demolition.

4.2.5 Although only one floor tile was recovered, a Flemish type of 14th/15th-century date from a Phase 2 layer, it was a corner piece, covered in white slip under a yellow glaze. Two other interesting items within the CBM assemblage are part of a 'horned' spinning top finial and a decorative ridge tile or louvre fragment. Strap-ends similar to the (residual) strap-end fragment from a medieval book (SF4) recovered from a Phase 4 layer occur widely, many coming from pre-Dissolution contexts on monastic sites.

4.2.6 If the Phase 2 layers originate, at least in part, from post-Dissolution deposits it suggests that they represent mid-16th century or later activity on the site. This is perhaps supported by the fact that Bourne D pottery only appears in this phase; this has a date range of 15th to early 17th century. This was found in association with sherds of Glazed Red Earthenwares, with a date range of 1600-1800; which combined suggests that these deposits are more likely to date to the later 16th or perhaps early 17th centuries.

4.2.7 Clarke and Carter (1977, fig. 194) indicate that during the mid-16th to mid-18th centuries settlement had expanded along the southern side of Austin Street. It is possible that some of the material dumped to the north of Austin Street also originates from here, being the closest area of open ground; disposal of waste here may also have resulted in making this area more habitable or at least less likely to flood.

4.2.8 The low-lying area of the site would have provided a convenient location for the disposal of some of the town's waste, despite there being legislation in place to prevent this activity. The Hall Books in the King's Lynn archives contain numerous references to this: in the early 15th century there were four orders within 25 years attempting to restrain it. These appear to have been largely ineffectual for in 1450 'no-one was to throw filth into any fleet or into the haven; 4d for the first offence, 8d for the second and imprisonment for the third' (Clarke and Carter 1977, 424).

4.2.9 Clarke and Carter suggest that the relative paucity of material from excavations in medieval King's Lynn, when compared with that from other medieval towns, might in part be explained by the tendency to use the river (and presumably fleets), as a 'dumping ground for domestic refuse' (*ibid*). Communal muckhills were also often situated beside the rivers or fleets, for example in the 16th century the college muckhills lay near Thoresby College.

4.2.10 Eventually, the numerous streams and fleets that once served the medieval town became used as drainage channels, sewers and water sources. The fleets appear to have largely fallen out of use at some point after Chamberlain's survey of *c*.1557, when shipping became focused on the main riverfront (*ibid*, 421-2).

4.2.11 This picture is perhaps supported by the results of this evaluation. The sloping nature of the dumped deposits (possibly over a bank?), combined with the rapid and constant ingress of water in the lower parts of the trench, suggest that a former fleet or stream flowed nearby. The presence of amphibian (probably frog) bones in samples from deposits in this and later phases perhaps provide further evidence that this was a somewhat damp environment.

4.2.12 Early maps of the town, including one dating to the mid-16th century (Fig. 2), show a fleet running along the western boundary of the site, roughly in the location of what is now Austin Fields, with a bridged crossing where it meets Hopmans Way (now Austin Street). Another fleet or stream flowed to the south between Austin Street and Norfolk Street, linking with a further one to the east, which joined with the major fleet to the north (Fisher fleet), and was the site of the corn mill and a public wharfe. A conduit is also indicated on this map, running along the centre of Hopmans Way from Kettlemill to the north-east towards the Tuesday market place to the west.

4.2.13 This phase produced the largest faunal assemblage, within which the sheep/goat remains form the most significant component. These elements probably represent industrial waste, perhaps from leather working, although it is not possible to ascertain where this material may have originated from (Appendix C2). Equally, appraisal of the environmental remains indicates that the material used for levelling this area probably derived from midden or industrial waste (small quantities of hammerscale) from somewhere within the town.

4.2.14 The nearest occupied areas (not including the religious houses) are likely to have been the Damgate/Norfolk Street tenements where evidence of medieval industry, including a blacksmiths, has been found (NHER 31393). Evidence of other trades at this site includes possible woodworking and hornworking, the latter dating to the 14th-15th centuries (Cope-Faulkner 2000, 9). Research into medieval street names and occupations indicate that tenants on the south side of Hopmans way (now Austin Street) to the west of the fleet included a plumber, barker, skinner, tanner, dyer and tailor, suggesting that this was a fairly industrial area of the town.

4.2.15 The only direct evidence of occupation on the site comprises the remains of part of an insubstantial timber structure with a clay floor or construction layer (Structure 1, Phase

3). The function and form of this building, which was revealed at *c*.1.4m below ground level (3.6m OD), is unknown. Its date is also uncertain; the few finds that were recovered are all medieval but are very small, abraded and clearly residual. Based on stratigraphic evidence it is probable that this structure dates to the 17th or possibly 18th centuries at the latest. A single clay pipe stem was recovered from the uppermost layer below the clay floor, which could be intrusive; it is unfortunately not closely datable.

4.2.16 Environmental samples from Structure 1 produced similar results to Phase 2, whilst the small group of faunal remains comprise elements of sheep/goat and cat; amphibian and fishbone (thornback ray) are also present.

4.3 Later post-medieval

4.3.1 Intermittent flooding may have continued to be an issue as further ground levelling/waste disposal continued through the 18th and 19th centuries, with no evidence of structures or associated activity on this part of the site until the 20th century. Some of the more extensive loamy deposits (*e.g.* 7) could conceivably represent cultivation/agricultural layers rather than levelling dumps.

4.3.2 Although the finds assemblage from this phase includes a high proportion of reworked material, the presence of some more fragile finds, notably the clay tobacco pipes, may indicate that some of the dumped material originated from close-by. Several bowls were present in two distinctive ashy deposits that overlay the demolished Structure 1 and are unlikely to have travelled far. These all appear to be of local manufacture and are datable to the 18th century. The small quantity of contemporary pottery sherds from layers in this phase comprise creamwares and white and brown stonewares which were of moderately high status in this period. Environmental and faunal remains are generally similar in character to Phase 2, although in lower quantities.

4.3.3 This reiterates to a certain extent the results of recent excavations in the vicinity particularly the northern edge of the Lidl site (MNF31393). Here post-medieval layers and a cellared building were recorded close to Austin Street (Cope-Faulkner 2000, 6). The relative proximity of this site is shown on Fig.1 and Plate 6.

4.3.4 Cartographic evidence indicates that by the late 18th century the fleets surrounding the site had disappeared, having presumably been culverted, or infilled as a result of the successive dumping of waste/levelling. The area around this end of Austin Street is shown as largely open ground throughout the later post-medieval period. The 1888 Ordnance Survey Map, however, includes the annotation 'Rope walk' across the northern part of the site, and it is possible that this may have left some trace in the form of post-holes or other structural features that would lie beyond the area of the trench.

4.4 Significance

4.4.1 Despite its limited nature, this evaluation has provided a useful sequence through medieval to later post-medieval deposits and enabled some reconstruction of the immediate topography and development of this part of King's Lynn.

4.4.2 This evidence, combined with that from nearby sites/previous investigations and cartographic sources indicates that this part of the town may have been largely uninhabited, with the main focus of medieval and later settlement being to the south, along Norfolk Street, and to the west. It is, however, feasible that there was occupation closer to the frontage with Austin Street, where there was a bridge crossing the fleet that ran to the west of the site, or to the east in the vicinity of the site of the corn mill (Fig. 2).

4.4.3 The finds and environmental assemblages, although largely deriving from dumped deposits, are on the whole fairly typical for the town, and (indirectly) provide further evidence for local industry as well as tentative information on the fate of the town's religious houses following the Dissolution.

4.5 Recommendations

4.5.1 Recommendations for any future work based upon this report will be made by Norfolk Landscape Archaeology.

Appendix A. Context Summary and Phased Matrix

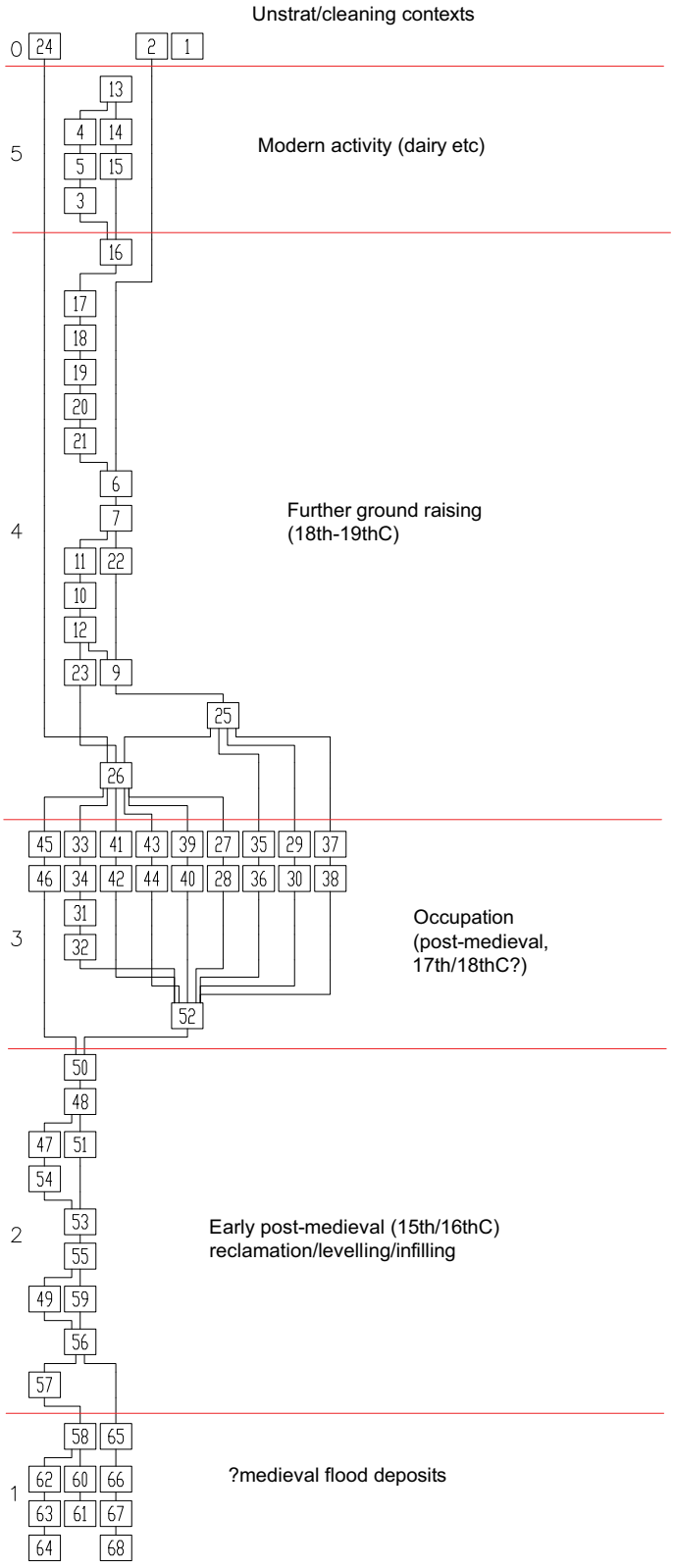
A.1 Context Summary

Context	Cut	Category	Feature Type	Other Comments/Finds	Phase
1	0	finds unit	machining	General number for machining top 0.5m of overburden. Clay pipe, pottery, bone	0
2	0	finds unit	cleaning	Number for finds from cleaning over layers 6 & 7 etc after removal of overburden. Shell, clay-pipe	0
3	3	cut	foundation trench	Vertical 1m-deep cut for modern wall foundation 5	5
4	3	fill	foundation trench	Backfill of modern foundation cut	5
5	3	fill	wall	Modern brick wall foundation surrounding trench - machine cut red bricks, once supported reinforced concrete slab	5
6	0	layer	levelling	dark greyish brown slightly peaty soil layer containing stones, with bone, clay-pipe, cbm, shell , 0.24m thick	4
7	0	layer	levelling	mottled yellowish brown silty clay with tile, pot, bone , SF 3: 18thC shoe buckle; SF5 18thC button; SF6 Cua ring; SF7 lead blob; SF8 Fe nail. 0.15m thick	4
9	0	layer	levelling	Brown clay silt layer, extends across trench, contains pottery, tobacco-pipe, bone, cbm, shell. 0.15m thick	4
10	0	layer	dump	Patch/dump of pale grey brown silty clay with chalk and small pebble inclusions, with bone and pottery. 0.1m thick	4
11	0	layer	dump	Mid orangey brown silty clay patch/dump against N edge of trench. Undated . 0.1m thick	4
12	0	layer	dump	Very dark grey clay silt with frequent charcoal and many clay pipe fragments, largely in SW corner of trench. Also bone, shell & pot. . 0.11m thick	4
13	0	layer	rubble	Loose rubbly layer containing frequent bricks, mortar, tile etc (not kept) relating to recent demolition of the dairy building. 0.25m thick	5
14	15	fill	demolition cut	General rubble/soil deposit containing frequent bricks, tile, pot, slate, rounded pebbles etc. Most finds probably under context 1. Removed by machine. 0.4m thick	5
15	0	cut	demolition	Recent demolition cut/truncation filled by 14	5
16	0	layer	levelling	Mid yellowish grey sandy clay with gravel, only in E-facing section. Modern construction layer. 0.1m thick	4
17	0	layer	levelling	Dark brownish grey sandy silt clay with stones and tile fragments. More soily layer below 16. Possibly ground levelling or cultivation? . 0.2m thick	4
18	0	layer	levelling	Dark greyish brown silty clay similar to 20. Only in E-facing section. 0.1m thick	4
19	0	layer	levelling	Dark greyish brown sandy silt layer with occasional brick & tile fragments, tipping from N-S. . 0.15m thick	4
20	0	layer	levelling	Dark greyish brown peaty silty clay with no inclusions/finds. 0.2m thick	4
21	0	layer	levelling	Mixed yellowish brown and dark grey brown silt clay with frequent chalk/shell flecks, some lumps of tile & mortar. 0.1m thick	4
22	0	layer	dump	Dark greyish brown silty clay with several large bricks, pottery, bone in NE corner of trench next to temporary baulk. . 0.15m thick	4
23	0	layer	levelling	Dark yellowish brown clay silt layer with tile, pot etc. against W edge of trench. Post-medieval, poss below 12 but peters out at this point . 0.25m thick	4
24	0	finds unit	cleaning	Cleaning over deposits recorded on plan 3 (26 etc.),	0

Context	Cut	Category	Feature Type	Other Comments/Finds	Phase
25	0	layer	dump	Very similar to 12 - Thin spread/dump of charcoal with clay pipe fragments in SW corner overlying some of post-holes. Clay pipes 18thC? 0.05m thick	4
26	0	layer	levelling	Dark yellowish brown silty clay layer with frequent tile, stones, brick, pot , shell, bone etc., covers most of trench, overlies some of post holes. . 0.2m thick	4
27	28	fill	post hole	Dark greyish brown silty clay fill of post-hole, tile	3
28	28	cut	post hole	Sub circular post-hole with concave profile cutting clay 52. (0.33 x 0.36 x 0.15m)	3
29	30	fill	post hole	Dark greyish brown silty clay fill of post-medieval post-hole	3
30	30	cut	post hole	Shallow circular post-hole cutting 52. (0.15 x 0.1m)	3
31	32	fill	post hole	Mid yellowish brown silty clay fill of post-hole, occasional chalk flecks, coal/charcoal, truncated slightly by 34	3
32	32	cut	post hole	Sub-circular post-hole with shallow concave profile cutting clay 52. (0.25 x 0.2 x 0.07m)	3
33	34	fill	post hole	Mid greyish brown silty clay with chalk flecks. CBM & bone	3
34	34	cut	post hole	Sub-circular post-hole with fairly shallow concave profile cutting ph 32 (0.34 x 0.4 x 0.13)	3
35	36	fill	post hole	Mid yellowish brown and grey silty clay with occasional shell & charcoal	3
36	36	cut	post hole	Sub-circular post-hole with shallow concave profile cutting clay 52 (0.3 x 0.38 x 0.07)	3
37	38	fill	post hole	Dark greyish brown clay silt with rare charcoal	3
38	38	cut	post hole	Small sub-circular post-hole with shallow concave profile cutting clay 52, appears to align with 30 & 40? (0.25 x 0.2 x 0.13)	3
39	40	fill	post hole	Dark yellowish brown clay silt with rare mortar flecks/fragments	3
40	40	cut	post hole	Sub-circular post-hole with shallow concave profile cutting clay 52 (0.4 x 0.22 x 0.1)	3
41	42	fill	post hole	Dark grey brown silty clay	3
42	42	cut	post hole	Slightly larger sub-circular post-hole with concave profile cutting clay 52 (0.4 x 0.41 x 0.15)	3
43	43	fill	post hole	Mid yellowish brown and grey silty clay with occasional shell & charcoal	3
44	44	cut	post hole	Sub-circular post-hole with concave profile cutting clay 52 (0.25 x 0.23 x 0.13)	3
45	46	fill	post hole	Dark greyish brown clay silt with rare charcoal, cbm	3
46	46	cut	post hole	Slightly sub-rectangular cut with moderately steep sides and flat base. Sides not well-defined, may not be real. (0.4 x 0.35 x 0.13)	3
47	0	layer	levelling	Mixed yellowish brown silty clay layer with pale yellow mottles, occasional small stones, tile, brick, pot , bone, charcoal etc. 0.25m thick	2
48	0	layer	levelling	Mixed pale greyish brown silt clay with occasional small stones, cbm, bone, shell, pot. . 0.15m thick	2
49	0	layer	dump	Mid yellowish brown clay silt with frequent mortar lumps/patches dump in NE corner, overlapped by 55? Cbm & pot . 0.12m thick	2
50	0	layer	levelling	Dark grey brown clay silt with common brick and tile fragments, mortar pieces, tips from SE to NW. Clay pipe, cbm, pot. 0.3m thick	2
51	0	layer	levelling	Mid reddish brown clay silt with occasional charcoal, thick deposit at W end of trench, finds probably under 47 as initially thought to be same deposit 0.25m thick	2
52	0	layer	floor	Dark yellowish brown slightly silty clay, located in SW corner of trench & cut by a number of post-holes. Possible floor? Cbm, bone, shell. 0.04m thick	3

Context	Cut	Category	Feature Type	Other Comments/Finds	Phase
53	0	layer	levelling	Mid grey brown clay silt with frequent pot, bone, tile, brick, shell charcoal, coal etc. Late medieval/post-medieval dump/levelling layer. . 0.1m thick	2
54	0	layer	levelling	Mixed pale yellow and mid brown silt clay, rare small stones, chalk/shell, brick, tile etc. Similar to 48 - poss from similar source? CBM, pot. 0.15m thick	2
55	0	layer	levelling	Very dark grey clay silt with frequent finds (pot, tile, oyster, stones, chalk, charcoal etc.). Similar to 53 above but darker and limited to SE corner. 0.3m thick	2
56	0	layer	levelling	pale greyish brown silty clay with yellow mottles, some pot, bone, tile. Fairly extensive layer/dump. 0.3m thick	2
57	0	layer	levelling	Mid greyish brown clay silt with occasional finds, charcoal, stones, tips slightly to W. Ground water a problem. Slightly cleaner/less finds-rich – pottery, cbm, bone. . 0.15m thick	2
58	0	layer	natural	Dark grey clayey silt with common shells, organic matter, bones, pot, tile etc., quite organic/odorous. Possibly a flood deposit or part-waterlogged dumped layer? Over0.5m thick? Bone, shell, pot, Fe nail	1
59	0	layer	levelling	pale/mixed greyish brown silty clay with yellow mottles, very similar to 56 but paler. Finds under 56. Flood deposit. 0.4m thick	2
60	0	layer	natural	Mid orange brown sandy clay, very compact but thin layer revealed in auger 2. Probable ?late medieval flood deposit. 0.1m thick	1
61	0	layer	natural	Dark grey silty clay, probable flood deposit revealed in auger 2. Earliest deposit in this auger. 0.3m thick	1
62	0	layer	natural	Dark grey slightly clayey silt with occasional small stones recorded by auger - may be continuation of thick deposit 58 in auger 1. 0.25m thick	1
63	0	layer	natural	Mid orange brown sandy clay silt, rare small stones, very firm & probably same as 60 in Auger 2. Late med flood deposit. 0.17m thick	1
64	0	layer	natural	Very dark brown peaty deposit revealed at base of auger 1, may be a peat layer or patch of organic material within a silt layer (didn't appear in auger 2), c. 5cm thick	1
65	0	layer	natural	Dark grey silt with patches of organic matter, probably same as 58 to the E; 66 may be part of same deposit. In auger 3 (base of sump & difficult to further investigate)	1
66	0	layer	natural	Mid greyish brown clay silt with orange striations, unknown extent revealed in auger 3 at W end of trench. May just be continuation of 65. Ground water a problem. 0.15m thick	1
67	0	layer	natural	Orangey grey sandy silt with patches of organic matter/ concretions revealed at base of auger 3, similar to 63 to E? 0.2m thick	1
68	0	layer	natural	Pale yellowish grey sandy clay, unknown extent, revealed in auger 3 (under water). Medieval/late medieval? Earliest deposit in this sequence, over 0.1m thick	1

A.2 **Phased Matrix**



Appendix B. Finds Reports

B.1 Pottery

By Sue Anderson

Introduction

B.1.1 A total of 160 sherds of pottery weighing 3118g was collected from 22 contexts. The eve (estimated vessel equivalent) for the whole assemblage, based on measurable rims from 14 vessels, was 1.30. The assemblage ranged in date from the 11th to the 19th centuries, deriving from site phases 1 to 4. Table 1 shows the quantification by fabric; a full catalogue by context can be found in the site archive.

Description	Fabric	Code	No	Wt(g)	Eve	MNV
Thetford Ware (Grimston)	THETG	2.57	1	74		1
Early medieval ware	EMW	3.10	3	4		2
Medieval coarseware	MCW	3.20	5	76		5
Grimston coarseware	GRCW	3.22	3	78	0.13	3
Local medieval unglazed	LMU	3.23	1	29		1
Medieval coarseware micaceous	MCWM	3.24	1	58		1
Unprovenanced glazed	UPG	4.00	3	14		3
Grimston-type ware	GRIM	4.10	43	561	0.10	40
Yarmouth-type glazed wares	YARG	4.11	4	44		4
Yorkshire glazed wares	YORK	4.43	1	3		1
Bourne Ware Type A, B & C	BOUA	4.72	2	11		1
Ely Glazed Ware	ELYG	4.81	3	34		3
Siegburg Stoneware	GSW1	7.11	1	3		1
French Wares	FREN	7.30	1	3		1
Saintonge	SAIN	7.31	2	9		1
Total medieval			74	1001	0.23	68
Late medieval and transitional	LMT	5.10	5	61	0.10	4
Cistercian type Ware	CTW	5.20	1	7		1
Bourne Ware Type D	BOUD	5.24	12	305		4
Late Grimston-type ware	GRIL	5.30	9	244	0.11	9
Surrey Whiteware transitional ‘Tudor Green’	SWWT	5.40	1	6		1
Raeran/Aachen Stoneware	GSW3	7.13	9	145	0.24	9
Dutch-type redwares	DUTR	7.21	4	155		2
Total late medieval			41	923	0.45	30
Glazed red earthenware	GRE	6.12	21	797	0.07	15
Staffordshire-type manganese glazed	STMG	6.21	2	8		2
Tin glazed earthenwares	TGE	6.30	6	33	0.25	4
Post-medieval slipwares	PMSW	6.40	2	26	0.21	2
Cologne/Frechen Stoneware	GSW4	7.14	1	12		1
Dutch-type slipwares	DUTS	7.28	2	38		1
Total post-medieval			34	914	0.53	25
Refined white earthenwares	REFW	8.03	3	24		2
Refined red earthenwares	REFR	8.04	2	58		1
English Stoneware	ESW	8.20	1	2		1
English Stoneware Nottingham-type	ESWN	8.22	1	17		1
Staffordshire white salt-glazed stonewares	SWSW	8.41	2	30		2
Late blackwares	LBW	8.52	1	146	0.09	1
Total modern			10	277	0.09	8
Unidentified	UNID	0.001	1	3		1
Total			160	3118	1.30	132

Table 1. Pottery quantification by fabric.

Methodology

B.1.2 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 archive. All fabric codes were assigned from the author's post-Roman fabric series, which includes East Anglian and Midlands fabrics, as well as imported wares. Form terminology for medieval pottery is based on MPRG (1998). Recording uses a system of letters for fabric codes together with number codes for ease of sorting in database format. The results were input directly onto an Access database.

B.1.3 A small quantity of pottery (13 sherds) was recovered from the environmental residues from contexts 26, 50, 52, 53, 55, 56 and 58, all of which are small and the majority are GRIM. These have been added to the database but are not included in this report.

Pottery by period

Medieval

B.1.4 The medieval group forms almost half the assemblage by sherd count.

B.1.5 Four sherds (THETG, EMW) belonged to the earliest part of the phase (11th/12th-century), all body fragments.

B.1.6 There were ten unglazed sandy coarsewares, most of uncertain provenance but including some Grimston coarseware vessels. The latter included two rims, one from a bowl (Phase 2 layer 56) and the other from a jar (Phase 4 layer 22), in typical everted forms comparable with vessels from the production site (Leah 1994, figs 64 & 67). All other coarseware fragments were pieces of body or base.

B.1.7 English glazed wares made up approximately 76% of the group, a high proportion which is largely due to the number of sherds of glazed Grimston Ware. This is typical of King's Lynn and reflects the proximity of the production site to the town. Only one rim was present in this ware, an upright thickened jug rim, but several handles attested were also present, and there were several body sherds with vertical brown slip lines, and several bases were thumbed, all typical features of Grimston jugs. Most sherds were fully or partially green glazed. Other English wares included 'Yarmouth-type' yellow glazed wares, Ely glazed wares, two sherds from a Bourne A vessel with a thumbed base, and a possible Yorkshire glazed ware body sherd. Three sherds were unprovenanced, but all could be variants of Grimston.

B.1.8 Imported wares were identified: one narrow neck sherd of Siegburg (or possibly Beauvais) stoneware; a possible French whiteware handle with copper green glaze; and two sherds of a Saintonge Ware vessel with a curving applied strip.

Late medieval

B.1.9 Approximately a quarter of the assemblage belonged to this period. Late Grimston wares and Raeren stonewares were the most common vessels, although in terms of sherd count and weight, Bourne D ware was more frequent.

B.1.10 Grimston products included a jar with everted rim, and an unusual vessel which may be a puzzle jug or mug. The latter was pierced at the neck and decorated with fine combing. This type of combing was a feature of several jugs from Dissolution contexts at Binham Priory (Anderson forthcoming).

B.1.11 Late medieval and transitional wares were present (although these were not typical of the Suffolk LMT industry and may have been made more locally to King's Lynn), including a pipkin or skillet with a flaring rim. One sherd of Cistercian-type ware was a body fragment of a small globular vessel; the closest known source of this ware is currently Ely. The Bourne D group included at least one jug represented by a large strap handle, but other sherds were all body fragments (including several from a green-glazed vessel). A rimsherd from a 'Tudor Green' lobed cup was a fairly unusual find from the town (cf Pearce and Vince 1988, fig. 38).

B.1.12 Dutch redwares included three fragments from a tripod cauldron with thick internal lime. The Raeren sherds included one mug rim, but most of these sherds were probably from mugs or jugs. Several body sherds with girth-grooving were present, and the vessels varied in colour from grey to brown.

Post-medieval

B.1.13 The majority of post-medieval wares comprised glazed red earthenwares. Some of these were probably of 16th-century date and overlapped with the late medieval wares with which they were associated, but they are not closely datable and span the 16th–18th centuries. Identifiable vessels included a dish and a jug.

B.1.14 Three redware slip-decorated vessels were also present. One was a press-moulded flatware with white all-over slip internally and brown slip line decoration (a Staffordshire copy), and another was a small jar with internal white slip. Both were probably local or regional products. Two sherds from a bowl with internal concentric trailed white slip are likely to be from a Dutch slipware bowl (Phase 4 layer 7).

B.1.15 Tin-glazed earthenwares included a ?bowl with a cavetto rim (7), a small fragment of finely painted scalloped rim of unidentified form (10), a body sherd with fine blue painted decoration (10), and a plate with blueish glaze and a finely painted lattice border (12). The plate was probably English and of 18th-century date.

B.1.16 Other post-medieval wares comprised two body sherds of Staffordshire manganese glazed ware, and a body sherd of Frechen stoneware.

Modern

B.1.17 Small quantities of pottery of mid 18th to 19th-century date were recovered. These included two fragments of a creamware teapot with applied floral decoration and brown mottling, a fragment of a large blackware bowl, two sherds from the base of a redware vessel, a body sherd from a Nottingham stoneware jar, a base and a body sherd from two Staffordshire white salt-glazed stoneware vessels, and a rim from a brown stoneware mug.

Unidentified

B.1.18 One hard unglazed orange sherd from Phase 2 layer 53, containing abundant medium quartz, was of uncertain date and provenance. It was similar in appearance to some early Flemish wares.

Pottery by site phase

B.1.19 A summary of the pottery by phase is provided in Table 2. Dumps and levelling layers of Phases 2 and 4 produced the largest quantities of pottery, with very few sherds from medieval Phase 1 and post-medieval Phase 3. A slight decrease in average sherd weight between Phases 2 and 4 reflects the redeposition of material over several centuries.

Phase	No	Wt/g	ave sherd wt	MNV	eve
1	2	9	4.5	2	0.10
2	62	1285	20.7	51	0.51
3	1	3	3.0	1	
4	74	1303	17.6	60	0.60
Unphased	21	518	24.7	18	0.09

Table 2. Pottery quantities by phase.

B.1.20 Fabric quantities by phase are shown in Table 3. Unphased/unstratified material will not be considered further.

Fabric	Phase 1	Phase 2	Phase 3	Phase 4	Unph.
THETG		1			
EMW				2	1
MCW				5	
GRCW		2		1	
LMU					1
MCWM		1			
UPG	1		1		1
GRIM	1	14		17	11
YARG		3			1
YORK					1
BOUA				2	
ELYG		3			
FREN				1	
SAIN				2	
GSW1		1			
LMT		3		2	
CTW					1
BOUD		12			
GRIL		7		2	
SWWT		1			
GSW3		6		2	1
DUTR		3		1	
GRE		4		16	1
STMG				2	
TGE				6	
PMSW				2	
GSW4				1	
DUTS				2	
REFW				2	1
REFR				2	
ESW				1	
ESWN				1	
SWSW				2	
LBW					1
UNID		1			

Table 3. Pottery fabrics by period (count). Shading shows residual fabrics.

Phase 1 - Medieval

B.1.21 Two sherds of medieval glazed wares, one of unidentified provenance, were recovered from the flooding deposits assigned to this phase.

Phase 2 - 15th-16th centuries

B.1.22 Approximately a third of this group was residual, but some late medieval pottery was present, including German and Dutch products, as well as local and regional wares. All Bourne D vessels were recovered from this phase.

Phase 3 – 17th-18th centuries

B.1.23 A single medieval glazed ware sherd was collected from post-hole **46**.

Phase 4 – 18th-19th centuries

B.1.24 The majority of this group was residual, only eight sherds being contemporary with the phase. These sherds were generally of mid 18th- to mid 19th-century date and included creamwares and white and brown stonewares which were of moderately high status in this period.

Discussion

B.1.25 The earliest pottery from the site consists of a few body fragments of probable 11th-century date, but these were redeposited in later contexts. High medieval wares were relatively common, but again most had been redeposited in Phases 2 and 4. The range of medieval fabrics is typical of the town, with Grimston predominating but with regional and foreign imports also present. The late medieval period is also well represented, with local wares being supplemented by material from the east Midlands, the Low Countries and the Rhineland. The post-medieval assemblage is relatively small but is dominated by local redwares with the addition of some English and Dutch tin-glazed wares and slipwares but unusually small quantities of later German wares. Deposition of pottery appears to have ended in the 19th century, with the majority of modern wares belonging to the early phase of factory production.

B.1.26 As much of this material has clearly been redeposited, it is difficult to relate it to any activity on the site. Like the CBM, there is a possibility that it might have been imported to site accidentally for use in levelling layers, although it seems more likely that it was probably disturbed from earlier features on the site during these operations. The range of wares can be paralleled on other sites in the town and reflects the main trade links of this important port in the medieval and later periods.

Context	Fabric	Form name	Rim	No	Wt/g	Fabric date range
1	EMW			1	1	11th-12th c.
1	LMU			1	29	11th-14th c.
1	GRIM			2	8	L.12th-14th c.
1	GRIM			1	8	L.12th-14th c.
1	GRIM			1	56	L.12th-14th c.
1	UPG			1	7	L.12th-14th c.
1	GSW3			1	12	L.15th-16th c.
1	GRE			1	95	16th-18th c.
1	LBW	bowl	EV	1	146	18th-E.20th c.
1	REFW	teapot?		1	19	M-L 18th c.
7	GRIM			1	3	L.12th-14th c.
7	GRIM			1	31	L.12th-14th c.
7	GRIM			1	34	L.12th-14th c.
7	GRE			1	203	16th-18th c.
7	GRE	jug	UPPL	1	5	16th-18th c.
7	GSW3			1	21	L.15th-16th c.
7	GSW3			1	4	L.15th-16th c.
7	GRE			3	49	16th-18th c.
7	GRE			2	11	16th-18th c.
7	PMSW	jar	FLAR	1	13	17th-19th c.
7	DUTS	bowl?		2	38	L.16th-17th c.
7	TGE	bowl?	CAV	1	8	16th-18th c.
7	STMG			1	5	L.17th-18th c.
9	MCW			1	15	L.12th-14th c.
9	GRIM			1	3	L.12th-14th c.
9	GRE			1	5	16th-18th c.
9	GRE			1	7	16th-18th c.
9	LMT			1	9	15th-16th c.
10	TGE			1	2	16th-18th c.
10	TGE	dish?	FLAR	1	1	16th-18th c.
10	ESW	mug	UPPL	1	2	17th-19th c.
12	PMSW	press-moulded flatware	PL	1	13	17th-19th c.
12	TGE	plate	EV	3	22	18th c.
12	STMG			1	3	L.17th-18th c.
12	ESWN			1	17	L.17th-L.18th c.
12	SWSW			1	3	18th c.
12	SWSW	bowl		1	27	18th c.
12	REFW	teapot?		1	3	M-L 18th c.
12	REFW			1	2	L.18th-20th c.
22	MCW			1	42	L.12th-14th c.
22	GRCW	jar	FTEV	1	23	11th-M.13th c.
22	GRIM			2	13	L.12th-14th c.
22	GRIL			1	10	14th-15th c.?
22	SAIN			2	9	12th-13th c.
22	GRIL			1	11	14th-15th c.?
22	LMT			1	15	15th-16th c.
22	DUTR			1	10	15th-17th c.

Context	Fabric	Form name	Rim	No	Wt/g	Fabric date range
23	GRIM			1	8	L.12th-14th c.
23	GSW4			1	12	16th-17th c.
23	GRE			3	249	16th-18th c.
23	GRE			1	68	16th-18th c.
23	GRE			3	23	16th-18th c.
23	REFR			2	58	L.18th-20th c.
24	GRIM			1	30	L.12th-14th c.
24	GRIM			3	49	L.12th-14th c.
24	GRIM			3	17	L.12th-14th c.
24	YARG			1	31	13th-15th c.
24	YORK			1	3	Medieval
24	CTW			1	7	16th c.
25	GRIM			1	83	L.12th-14th c.
26	EMW			2	3	11th-12th c.
26	MCW			2	9	L.12th-14th c.
26	MCW			1	10	L.12th-14th c.
26	BOUA			2	11	12th-14th c.
26	GRIM			3	13	L.12th-14th c.
26	GRIM			1	4	L.12th-14th c.
26	GRIM			2	6	L.12th-14th c.
26	GRIM			1	13	L.12th-14th c.
26	GRIM			1	20	L.12th-14th c.
26	GRIM			1	18	L.12th-14th c.
26	FREN			1	3	
45	UPG			1	3	L.12th-14th c.
47	BOUD			3	65	15th-E.17th c.
48	MCWM			1	58	12th-14th c.
48	GRIM			2	6	L.12th-14th c.
48	YARG			2	5	13th-15th c.
48	GSW1			1	3	E.14th-17th c.
49	GRIM			4	14	L.12th-14th c.
49	ELYG			1	22	Med-LMed
49	GRIL			1	20	14th-15th c.?
49	GRIL	jar	EV	1	11	14th-15th c.?
49	GSW3			1	15	L.15th-16th c.
50	GRIM			1	11	L.12th-14th c.
50	GRIM			1	33	L.12th-14th c.
51	BOUD			2	18	15th-E.17th c.
53	THETG	large storage vessel		1	74	10th-11th c.
53	GRIL			2	166	14th-15th c.?
53	YARG			1	8	13th-15th c.
53	ELYG			1	5	Med-LMed
53	UNID			1	3	
53	BOUD			6	126	15th-E.17th c.
53	BOUD			1	96	15th-E.17th c.
53	DUTR			2	115	15th-17th c.
53	GSW3			1	5	L.15th-16th c.
53	GSW3			1	32	L.15th-16th c.

Context	Fabric	Form name	Rim	No	Wt/g	Fabric date range
53	LMT	pipkin?	FLAR	1	24	15th-16th c.
53	GRE	dish	EV	1	12	16th-18th c.
53	GRE			1	63	16th-18th c.
54	GRIM			1	14	L.12th-14th c.
54	GRIL			1	16	14th-15th c.?
54	GSW3			1	36	L.15th-16th c.
54	LMT			1	6	15th-16th c.
55	GRCW			1	30	11th-M.13th c.
55	GRIM			1	12	L.12th-14th c.
55	GRIM			1	10	L.12th-14th c.
55	GRIL		FLAR	1	7	14th-15th c.?
55	LMT			1	7	15th-16th c.
55	DUTR			1	30	15th-17th c.
55	GSW3	mug	UPPL	1	18	L.15th-16th c.
55	GRE			1	5	16th-18th c.
56	GRCW	bowl	FTEV	1	25	11th-M.13th c.
56	GRIM			1	4	L.12th-14th c.
56	ELYG			1	7	Med-LMed
56	GRIL			1	3	14th-15th c.?
56	GSW3			1	2	L.15th-16th c.
57	GRIM			1	27	L.12th-14th c.
57	GRIM			1	8	L.12th-14th c.
57	SWWT	cup	UPPL	1	6	15th-16th c.
57	GRE			1	2	16th-18th c.
58	UPG			1	4	L.12th-14th c.
58	GRIM	jug	UPTH	1	5	L.12th-14th c.

Table 4. Pottery catalogue

Notes:
Rim: INT – inturned; UP – upright; BD – beaded; TR – triangular; SQ – square; TH – thickened; S – simple; PL – plain; FT – flat-topped; EV – everted; FLAR – flaring; COLL – collared; CAV – cavetto; COMP – complex LMed types; LS – lid-seated; 1-7 – Thetford ware types.

B.2 Ceramic building material

By Sue Anderson

Introduction

B.2.1 A total of 192 fragments of CBM (16,945g) was collected from 22 contexts. Table 5 presents the count and weight quantification by form. A full catalogue by context is included in the archive.

Type	Form	Code	No	Wt(g)
Roman	Roman tile?	RBT?	1	51
Roofing	Plain roof tile	RT	157	9302
	Ridge tile	RID	1	201
	Finial	FIN	1	7
	Uncertain	UN	1	24
Walling	Early brick	EB	27	7177
Flooring	Flemish floor tile	FFT	1	140
Miscellaneous	Wall tile	WT	3	43

Table 5. CBM quantities by form.

Methodology

B.2.2 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 from work in Norwich (Drury 1993), based on measurements. Other form terminology follows Brunskill's glossary (1990).

The assemblage

B.2.3 Table 6 shows the quantification by fabric and form.

Fabric group	Code	RBT	RT	RID	FIN	UN	EB	FFT	WT
estuarine clays	est		156				27		
coarse sandy estuarine	est(cs)		1						
fine sandy	fs	1		1		1			
fine sand, grog	fsg							1	
medium sandy	ms				1				
white-firing fine	wfs								3

Table 6. CBM quantities (fragment count) by fabric and form.

Roman

B.2.4 One fragment in a fine sandy fabric from layer 47 may be of Roman date. It was 27mm thick.

Roof tiles

B.2.5 A total of 159 roof tile fragments (9527g) was collected. These comprised plain peg tiles (156 fragments), and two possible ridge tiles (one of uncertain form). Table 6 shows the quantities of roof tile by fabric.

B.2.6 All plain tiles were in estuarine fabrics of varying colours and coarseness. These fabrics were commonly used in East Anglia during the 13th-15th centuries, although the coarse sandy fabric 'est(cs)' appears to be slightly earlier. Only one fragment of the latter was found, an abraded piece in layer 57. There were no examples of nib tiles, and only five fragments had peg holes (four round, one square). In general the holes appeared to be in the centre axis of the tile, indicating that these tiles were suspended with single pegs or nails. Only one fragment, in cleaning context 24, showed signs of glazing with spots of green lead glaze.

B.2.7 Several fragments had thick deposits of white mortar on the surfaces. The mortar aggregates included coarse quartz, flint and shell and the material may be of late medieval or early post-medieval date, suggesting that the tiles may have been re-used in later walling. A few showed signs of sooting or burning and may have been used in hearths.

B.2.8 The possible ridge tile was in a fine sandy fabric and measured 20mm thick. It was found in late medieval layer 49. The tile was unglazed, which would be unusual for a medieval ridge tile. However, an unglazed example of a socketed ridge tile was found at Baker Lane (Clarke and Carter 1977, fig. 136.6), and is certainly medieval.

B.2.9 A fragment of a 'horned' spinning top finial was recovered from layer 57; this type of finial would have fitted into a socketed ridge tile. The fragment was a coil of clay in a Grimston-like fabric with green glaze on both sides (Fig. 1). Similar pieces have been found at Sedgeford Lane and 40-41 High Street (Clarke and Carter 1977, fig. 136.1-2).

B.2.10 One other small, glazed piece may be a decorative ridge tile or louvre fragment similar to types found elsewhere in the town (e.g. Clarke and Carter 1977, figs 138-9, particularly no. 17). It was in a fine red sandy fabric and had a raised bar on the outer surface, with the beginnings of a diagonal indentation at the break. Unfortunately the fragment is too small to determine its exact nature.

Bricks

B.2.11 All 27 fragments (7177g) of brick were 'early bricks' in estuarine fabrics, as described by Drury (1993). Most showed signs of abrasion and almost all were recovered from late medieval contexts. Seventeen bricks had one or more measurable dimensions, and of these 14 could be assigned to Drury's forms, as shown in Table 7.

Sanded base		**Strawed base**	
Form	**No.**	**Form**	**No.**
EB1	1	EB6/9	1
EB2	5	EB7	1
EB3	1	EB9	1
EB4	4		
Total	**11**		**3**

Table 7. Early brick forms.

B.2.12 Drury has suggested that the bricks with sanded bases are earlier than those which have straw impressions. In this group there were more sanded forms, which may indicate that brick use on or near the site began in the 13th century.

Flooring

B.2.13 Only one floor tile was recovered, a Flemish type of 14th/15th-century date from layer 53. It was a corner piece, unworn and 27mm thick, and was covered in white slip under a yellow glaze.

Miscellaneous

B.2.14 Three fragments of a white earthenware wall or fireplace tile, with a brown transfer-print geometric and floral design on a cream background, were recovered from layer 7.

CBM and fired clay by site period

B.2.15 Table 8 shows the distribution of forms by period, based on fragment count. This shows that the majority of CBM of medieval date was recovered from late medieval or later contexts and represents either re-use of earlier material or, perhaps more likely in Phase 2, demolition.

Phase	Date	RBT	RT	RID	UN	EB	FFT	WT
1	Med		4					
2	LMed	1	104	1		23	1	
3	PMed		8					
4	Modern		40		1	4		3
0	Un		1					

Table 8. Forms by phase.

Phase 1 : Medieval

B.2.16 Four fragments of 13th–15th-century roof tile were recovered from flood deposit 58.

Phase 2 :15th-16th century

B.2.17 The majority of the assemblage came for levelling and dump layers in this phase. The majority of both the early brick and the roof tile groups were collected from these contexts, and they also contained the single examples of Roman, ridge and floor tiles.

Phase 3 :17th-18th century

B.2.18 Eight fragments of medieval roof tile were recovered from ?floor 52 and post-holes **28**, **34** and **46**.

Phase 4 :18th -19th century

B.2.19 Again, all material from this phase was collected from levelling and dump layers. The only fragments of CBM which post-dated the 16th century were the three pieces of factory-made white tile from layer 7.

Discussion

B.2.20 The majority of stratified CBM from this site was collected from levelling layers (159 fragments) and dump layers (19 fragments), with smaller quantities from flood deposits (4 fragments), a possible floor (3 fragments), and post-holes (5 fragments). One fragment was unstratified. Much of this assemblage therefore represents hardcore, whether intentionally or unintentionally used, and demolition rubble. It can, however, provide some clues to buildings and structures which once stood on or near the site.

B.2.21 The largest component of this assemblage was medieval roof tile. The variety of fabrics within the overall ‘estuarine’ group indicates that the assemblage probably came from several kiln batches and may represent more than one structure, or more than one phase of construction. The same is true of the ‘early bricks’, which occur in both purple/yellow hard-fired types and softer orange types, as well as being made in both sanded and strawed forms. Although it is possible that the material represents buildings which once stood on the site, it is more likely that fragments were sourced from easily

available demolition rubble for incorporation into levelling and make-up layers during re-development of the site in Phase 2. Fragments recovered from Phases 3-4 were probably redeposited from the Phase 2 group.

B.2.22 Other recently excavated sites in King's Lynn have also produced large quantities of estuarine tiles. These include Paradise Road (located close to the site of the Dominican Friary), Friars Street (close to Whitefriars) and Hextable Road (close to Austin Fields) (Anderson 2005a; 2005b; 2006). The foundation of several friaries in 13th-century Lynn coincided with an upsurge in brick and tile use in East Anglia, and it is likely that much of the tile found at Austin Street and these other sites was commissioned or produced by the builders of these religious Houses. Its deposition in late medieval contexts across the town is likewise, at least in part, related to their Dissolution and demolition.

B.3 Clay tobacco-pipe

By Carole Fletcher

Introduction

B.3.1 A total of 75 fragments of clay smoking pipe was recovered from the evaluation. The majority of the diagnostic fragments date from the early to late 18th century. A small number of earlier pipes were also identified.

Methodology

B.3.2 Terminology used in this assessment was taken from Oswald's 'Clay pipes for the archaeologist' (1975). The pipe bowls, considered the most diagnostic part of the assemblage, were identified and dated using the standard typology for English pipe bowls.

Quantification and Fabrics

B.3.3 A full quantification table for the clay pipes, including separate counts for complete bowls, bowl fragments and stems, and noting the presence or absence of marked fragments is presented in Table 9. The clay pipes are all made from white ball clay.

Marks, Decorations and Provenance

Marks and Decoration

B.3.4 Three pipes, all from context 12 (Phase 4), were marked with the makers initials in moulded relief on the spur. Two are clearly marked IA the third, a broken heal and spur, bears only the base of the letter A, however it seems probable that the missing initial is I. Only one of these pipes has a complete bowl: an Oswald type 12 form (*c.*1730-1780). All three pipes appear to be from the same maker identified in Oswald as Joseph Alderson, operating between 1708-31 (Oswald 1975, 187). No other makers marks were present in the assemblage.

B.3.5 There were very few decorated bowls in this group, the majority being plain. Only one example of simple rouletting around the mouth of the bowl was present on an Oswald type 7 pipe (*c*1660-1680) from context 1 (unstratified). The single example of a highly decorated pipe bowl dates to the 18th century. An Oswald type 22 (*c.*1730-1780) minus spur, was recovered from context 12. On one side of the bowl is the Coat of Arms of the City or Town of Lynn and on the other side the words TAYLOR LYNN. A similar pipe is

illustrated by Atkin (1985, 138-139, fig. 7.110), her example is complete with spur which bears the initials IA, those of Joseph Alderson 1708-31, the apparent maker of the Oswald type 12 forms also found in context 12. It seems very probable that the decorated pipe recovered from the excavation would also have been marked IA.

B.3.6 The date of the undecorated Oswald type 12 and the decorated type 22 extends beyond the date range given for Joseph Alderson, although his son, Thomas Alderson (1731-32) also his apprentice, appears to have succeeded him (Oswald 1975, 187). Atkin when describing the decorated pipe states that the "shape of bowl suggests a later maker" (Atkin 1985, 139) dating the pipe to *c.*1770 (Atkin 1985, 137), however the undecorated Oswald type 12 pipes could have been manufactured by Joseph or his son in the very early 1730s.

Provenance

B.3.7 The three initialled pipes having been identified to a specific pipe maker Joseph Alderson, or his son, Thomas Alderson both Norfolk pipemakers suggests that the remaining clay pipes including decorated pipe, which may have been manufactured after 1732, also represent local production.

Research Potential and Further Work Statement

B.3.8 The clay pipe assemblage offers the opportunity to understand the material culture of the area and more closely date certain contexts in addition to understanding the early development of the local clay pipe industry. However no further work is recommended unless further excavation is undertaken. Any future clay pipe analysis for this site should be integrated with the analysis of the post-medieval ceramics.

Context	Phase	Weight kg	Number of complete or near complete pipe bowls	Number of bowl/heel Fragments	Heel Mark	Number of pipe stem fragments	Decoration	Form	Earliest Date	Latest Date
1	**0**	0.024	1				Rouletted	Oswald type 7	*c.*1660	1680
2	**0**	0.005				1				
9	**4**	0.011	1					Most likely Oswald type 5	*c.*1640	1660
12	**4**	0.011	1				Moulded: TAYLOR LYNN, King's Lynn crest lacking spur but likely to have been marked IA. Identified as Joseph Alderson 1708-31 (Farther of his apprentice Thomas Alderson 1731-2) (listed by H.Oak Rhind in Oswald 1975, p187)	Oswald type 22	*c.*1730	1780
		0.010	1		IA		Identified as Joseph Alderson 1708-31 (Farther of his apprentice Thomas Alderson 1731-2) (listed by H.Oak Rhind in Oswald 1975, p187)	Oswald type 12	*c.*1730	1780
		0.010	1					Oswald type 12	*c.*1730	1780
		0.007	2					Oswald type 12	*c.*1730	1780
		0.004		2						
		0.003		1	IA		Identified as Joseph Alderson 1708-31 (Farther of his apprentice Thomas Alderson 1731-2) (listed by H.Oak Rhind in Oswald 1975, p187)			
		0.003		1	A (base of letter survives) The missing initial is most likely I		Identified as Joseph Alderson 1708-31 (Farther of his apprentice Thomas Alderson 1731-2) (listed by H.Oak Rhind in Oswald 1975, p187)			
		0.105				58				
25	**4**	0.009	1					Oswald type 12	*c.*1730	1780
		0.004		1		2	I			
50	**2**	0.003				1				

Table 9. Clay pipe catalogue

B.4 Metalwork

By Nina Crummy

Introduction

B.4.1 This small assemblage ranges in date from medieval to modern and derives from site Phases 1, 2, 4 and 5.

The assemblage

B.4.2 The earliest items are an iron clench-bolt (SF10), from a building or possibly a ship, an iron nail and a fragment of iron-working slag (SF9, SF8). The only coin from the site is a farthing of George II, dated *c*.1730-9, from a Phase 4 layer (7, SF1). A single drawn copper alloy wire pin was also recovered from Phase 2 layer 56 (SF11).

B.4.3 Context 7 also contained a machine-made buckle or strap-clasp (SF2) and a residual fragment of a strap-end from a medieval book (SF4). Similar strap-ends occur widely, many coming from pre-Dissolution contexts on monastic sites. Examples from London, Canterbury, Battle Abbey and Norwich came from mid 14th to early 16th century contexts, while one from Norwich in a 17th century layer is residual, as is this example from King's Lynn (Egan & Pritchard 1991, 101-2; Henig 1988, fig. 54, 9-11; Geddes 1985, 158, fig. 50, 37; Huddle 2007, no. 787; Margeson 1993, 36, fig. 20, 239;).

B.4.4 A Phase 4 context also produced a late post-medieval or modern buckle and button and some lead-working scrap, the latter possibly residual or perhaps associated with minor building works.

Catalogue

SF1. (25). Phase 4 layer. Very worn copper-alloy farthing of George II; young bust portrait, 1730-9. Diameter 23 mm.

SF2. (25). Phase 4 layer. Late post-medieval or modern machine-made rectangular copper-alloy double strap-clasp or buckle with circular open centre, hinged on one side. There are traces of leather around the central bar. Length 28 mm, width 20 mm; total length with ?hinge 38 mm.

SF3. (7). Phase 4 layer. Fragment of the frame from a large shoe or boot buckle with elaborate vegetal decoration, curved on the long axis. The stump of the central iron bar for the tongue remains. Length (incomplete) 45 mm, width (incomplete) 25 mm. Similar buckles from Norwich, Battle Abbey and Winchester come from contexts dated to the 18th and 19th century (Margeson 1993, 28, fig. 17, 180; Geddes 1985, fig. 49, 23; Hinton 1990, fig. 135, 1255).

SF4. (26). Phase 4 layer. Pierced terminal from a two-piece copper-alloy strap-end from a narrow leather book-strap. Length 15 mm, width 9 mm.

SF5. (7). Phase 4 layer. Flat copper-alloy button with inserted attachment loop. Diameter 18 mm, length 10 mm.

SF6. (7). Phase 4 layer. Copper-alloy curtain ring with flattened oval section. Diameter 26 mm, section 2.5 by 2 mm.

SF7. (7). Phase 4 layer. Folded and crumpled pieces of sheet lead, probably offcuts from lead-working. Maximum dimensions 34 by 25 by 6 mm.

SF8. (53). Phase 2 layer. Amorphous iron fragment, possibly slag. Weight 19 g.

SF9. (53). Phase 2 layer. Iron nail with round head; most of the shank is missing. Length 26 mm.

SF10. (58). Phase 1 layer. Iron clench-bolt with large square head and smaller damaged ? square rove. Length 50 mm. Large bolts or this type were used to secure heavy planks timbers together, both in buildings and on boats (Ottaway & Rogers 2002, 2830).

SF11 (56, sample 6). Phase 2 layer. Drawn copper alloy wire pin, with wire round spherical head. Length 23mm. Although thought to be post-1543, recent work has shown that this type were known in medieval England although the smaller pins with thinner shafts and simpler heads tend to be 16th-17th century (Margeson 1993, type 1 fig 31-33; Crummy 1988 type 2, fig. 4, 452).

Conclusion and Recommendations

B.4.5 The assemblage is small, reflecting the limited scope of the work, but provides additional (tentative) evidence (SF4) to suggest a possible ecclesiastical source for some of the material dumped on the site.

B.4.6 The metal finds are in a stable condition and packaged to a high standard. No further work is needed on this assemblage at present. Nevertheless, should a larger group of material from the same area be excavated in the future it might be worth integrating these objects with it to augment the data.

Appendix C. Environmental Reports

C.1 Environmental samples

By Rachel Fosberry

Introduction and Methodology

C.1.1 Eight bulk samples were taken from features within the evaluated areas of the site in order to assess the quality of preservation of plant remains, small bones and artefacts and their potential to provide useful data as part of any further archaeological investigations.

C.1.2 Ten litres of each sample were processed by tank flotation for the recovery of charred plant remains, dating evidence and any other artefactual evidence that might be present. The flot was collected in a 0.3mm nylon mesh and the residue was washed through a 0.5mm sieve. Both flot and residue were allowed to air dry. The flot was examined under a binocular microscope at x16 magnification; the presence of any plant remains or other artefacts are noted on Table 10.

Results

Sample No.	Context No.	Feature type	Flot Contents	Phase
1	26	Levelling layer	Fish scale, fish bone, egg shell, fired clay fragments, small bone, wheat grain, charcoal	4
2	50	Levelling layer	Fish scale, fish bone, egg shell, charred sedge seed, charcoal, hammerscale	2
3	52	Floor layer	Fish scale, fish bone, burnt egg shell, wheat grains, charcoal	3
4	53	Levelling layer	Fish scale, fish bone, mammal bone, wheat, oat, barley grains, charcoal	2
5	55	Levelling layer	Fish scale, fish bone, egg shell, charred straw, wheat chaff, sedge seed, saw-sedge leaf , goosefoot seed, barley, oat grain, charcoal	2
6	56	Levelling layer	Fish scale, fish bone, uncharred elder seeds, charcoal	2
7	27	Post hole fill	Fish scale, fish bones, charcoal, hammerscale	3
8	58	natural	Fish scale, fish bones, egg shell, uncharred elder seeds, charred wheat grain, saw-sedge leaf, hammerscale	1

Table 10. Contents of flots

Preservation

C.1.3 All of the samples contain plant remains preserved by carbonisation. Charcoal fragments are abundant and include vitrified charcoal, coal and black tarry globules.

Plant Remains

Cereals

C.1.4 Charred cereal grains occur rarely in five of the samples. Wheat (Triticum sp.), barley (Hordeum sp.) and oats (Avena sp) are present. Wheat chaff is extremely rare occurring only as a single wheat rachis fragment in Sample 5, layer 55.

Weed seeds

C.1.5 Charred weed seeds are rare; Sedge (Carex sp.) seeds were noted in Samples 2 and 5 and a single goosefoot (Chenopodium sp.) seed is present in Sample 5. Charred leaf fragments of Saw-sedge (Cladium mariscus) occur in Samples 8 and 5.

C.1.6 Untransformed seeds of elder (Sambucus sp.) occur in Samples 6 and 8.

Ecofacts and Artefacts

C.1.7 Hammerscale in the form of spheroidal hammerslag droplets and flakes were noted in Samples 2, 7 and 8

C.1.8 Cockles (Cerastoderma edule), oyster (Ostrea edulis), mussel (Mytilus edulis) and common whelk (Buccinum undatum) shells are present in most of the samples. Animal bone and pottery fragments occur occasionally.

C.1.9 Fish bones are common in all of the samples. Fish scales are present in all of the samples in low quantities.

Discussion

C.1.10 This assemblage is extremely uniform in content despite originating from different features and phases. It is probable that the material used for levelling this area derived from midden or industrial waste from within the town. The vitrified nature of the charcoal is consistent with high temperature and/or repeated burning which may be indicative of industrial activity.

C.1.11 The presence of hammerscale is indicative of blacksmithing activity in the close vicinity. Although evidence of a smithy was discovered during excavations at Norfolk Street (NHER 31393), it is not likely that material from the smithy area was used in the levelling of this area of the site as the quantities of hammerscale would have been much greater.

C.1.12 Cereal grains are extremely rare in this assemblage, usually occurring as single grains of each species in each sample. Wheat, barley and oats were all commonly consumed in the medieval and post-medieval period and would have been expected in samples from these dates.

C.1.13 The untransformed elder seeds are not unusual is deposits of medieval date as the seeds have a tough outer coat (testa) that is extremely durable.

C.1.14 Saw sedge was one of the major vegetation types of the Fen and was commonly used as fuel.

C.1.15 Shell fish was an important dietary constituent in the medieval and post-medieval period. Cockle shells predominate in the samples and would most likely have been sourced from the local coast.

C.1.16 Fish bones and, to a lesser extent, fish scales occur in all of the samples. Their presence, along with the remains of shell fish, indicate that estuarine and marine resources were being exploited.

Further Work and Methods Statement

C.1.17 The low densities of plant remains from the site are not considered to merit full analysis. If further excavations are planned for this area, it is recommended that a schedule for environmental sampling should be appended to the updated project design and would include targeted sampling for metalworking residues and fish bone.

C.2 Animal bones

By Chris Faine

Introduction

C.2.1 A total of 3.9 kg of faunal material was recovered from the evaluation at Austin Street, King's Lynn, yielding 75 “countable” bones (see below). A further 50 fragments were not identifiable to species but classed as coming from large/medium mammals. Faunal remains were largely recovered from both hand-collected and bulk samples from layers and flood deposits dating from the medieval to Early Modern periods. The archaeology was heavily truncated by modern foundations, with residuality being common in many contexts.

Methodology

C.2.2 All data was initially recorded using a specially written MS Access database. Bones were recorded using a version of the criteria described in Davis (1992) and Albarella & Davis (1994). Initially all elements were assessed in terms of siding (where appropriate), completeness, tooth wear stages (also where applicable) and epiphyseal fusion. Completeness was assessed in terms of percentage and zones present (after Dobney & Reilly, 1988).

C.2.3 Initially the whole identifiable assemblage was quantified in terms of number of individual fragments (NISP) and minimum numbers of individuals MNI. The ageing of the population was largely achieved by examining the wear stages of cheek teeth of cattle, sheep/goat and pig (after Grant 1982). Wear stages were recorded for lower molars of cattle, sheep/goat and pig, both isolated and in mandibles. The states of epiphyseal fusion for all relevant bones were recorded to give a broad age range for the major domesticates (after Getty 1975). Measurements were largely carried out according to the conventions of von den Driesch (1976). Measurements were either carried out using a 150mm sliding calliper or an osteometric board in the case of larger bones.

The Assemblage

C.2.4 Table 11 shows the species distribution for the entire assemblage, with tables 2-5 showing the distributions for the individual phases. The assemblage is dominated by sheep/goat remains, with cattle being the next most prevalent taxon, along with smaller numbers of amphibian and commensal mammal remains. Few identifiable fragments were recovered from Phase 1 contexts (Table 12), consisting entirely of butchered cattle remains.

C.2.5 The faunal material from Phase 2 (Table 13) was largely recovered from two layers (53 and 54). Sheep/Goat remains are by far the most common taxon, making up 70% of the total sample. The majority of this consisted of adult metapodia, none of which showed evidence of butchery. Analysis of these gives an average withers height for the

population of around 56.9cm, which is comparable with contemporary assemblages from the area (Noddle, 1977). The remaining sheep/goat elements consist largely of butchered upper limb elements, along with 3 juvenile metapodia. A single ageable mandible was recovered from an animal around 3-4 years old at death. Evidence for other domesticates is limited, consisting of butchered cattle cranial elements and humeri, along with a dog humerus from an animal around 41.5cm high at the shoulder. Material from environmental samples included a single domestic fowl carpometacarpal and a number of small mammal and anuran amphibian (most likely common frog) remains.

C.2.6 Limited material was recovered from Phase 3 contexts (Table 14), consisting of sheep/goat, cat and amphibian remains, along with a single dermal denticle from a thornback ray. Material from Phase 4 contexts (Table 15) included a number of butchered sheep/goat metapodia, along with mandible from an animal around 2-3 years old at death. Small numbers of butchered cattle long bones were recovered, along with an adult goose humerus and further amphibian remains.

Conclusion

C.2.7 With the exception of Phase 2 the faunal sample is relatively small, being indicative of general occupation rather than any particular husbandry strategy, with the range of species and elements commonly seen in contemporary urban sites. The sheep/goat remains from Phase 2 most likely represent industrial waste of some kind, most likely from leather working given the type of elements represented (Albarella 2002). The remainder of the domestic mammal and bird remains from all Phases most likely represent butchery debris. Dog and cat remains are most likely from commensal species. Thornback ray were commonly caught off the East Anglian coast using lines (Albarella *et al*, forthcoming).

	NISP	NISP%	MNI	MNI%
Sheep/Goat (*Ovis/Capra*)	33	44	18	42
Sheep (*Ovis aries*)	15	20	8	17.9
Cattle (*Bos*)	11	14.6	8	17.9
Dog (*Canis familiaris*)	2	2.6	1	2.2
Cat (*Felis sylvestris*)	1	1.3	1	2.2
Domestic fowl (*Gallus sp.*)	1	1.3	1	2.2
Domestic goose (*Anser sp.*)	1	1.3	1	2.2
Thornback ray (*Raja clavata*)	1	1.3	1	2.2
Anuran amphibian	9	12.3	1	2.2
Unid. Small mammal	1	1.3	4	9
Total	**75**	**100**	**44**	**100**

Table 11. Species distribution for the entire assemblage

	NISP	NISP%	MNI	MNI%
Cattle (*Bos*)	2	100	1	100
Total	**2**	**100**	**1**	**100**

Table 12. Species distribution for Phase 1 contexts

	NISP	NISP%	MNI	MNI%
Sheep/Goat (*Ovis/Capra*)	24	48.9	11	45.8
Sheep (*Ovis aries*)	10	20.4	5	20.8
Cattle (*Bos*)	7	14.2	3	12.5
Dog (Canis familiaris)	1	2.1	1	4.2
Unid. Small mammal	1	2.1	1	4.2
Domestic fowl (*Gallus sp.*)	1	2.1	1	4.2
Anuran amphibian	5	10.2	2	8.3
Total	**49**	**100**	**24**	**100**

Table 13. Species distribution for Phase 2 contexts

	NISP	NISP%	MNI	MNI%
Sheep/Goat (*Ovis/Capra*)	2	25	2	33.6
Sheep (*Ovis aries*)	1	12.5	1	16.6
Cat (*Felis sylvestris*)	1	12.5	1	16.6
Thornback ray (*Raja clavata*)	1	12.5	1	16.6
Anuran amphibian	3	37.5	1	16.6
Total	**8**	**100**	**6**	**100**

Table 14. Species distribution for Phase 3 contexts

	NISP	NISP%	MNI	MNI%
Sheep/Goat (*Ovis/Capra*)	7	43.9	5	35.7
Sheep (*Ovis aries*)	4	25	2	14.2
Cattle (*Bos*)	2	12.5	4	28.5
Dog (*Canis familiaris*)	1	6.2	1	7.2
Domestic goose (*Anser sp.*)	1	6.2	1	7.2
Anuran amphibian	1	6.2	1	7.2
Total	**16**	**100**	**14**	**100**

Table 15. Species distribution for Phase 4 contexts

C.3 Shell

By Helen Stocks

Introduction and Methods

C.3.1 Shells of marine molluscs were quantified and examined in order to assess the diversity and quantity of these ecofacts and their potential to provide useful data as part of further archaeological investigations. A catalogue is stored with the archive.

C.3.2 A total weight of 0.701kg shell was recovered by both hand collection and from bulk samples. Four species are present; oysters (*Ostrea edulis*), cockles (*Cerastoderma edule*), dog whelk (*Nucella lapillus*) and mussels (*mytilis edulis*).

Results

Species	Common name	Habitat	Weight (g)	Total number of contexts
Ostrea edulis	Oyster	estuarine and shallow coastal water	612	13
Mytilus edulis	Mussel	intertidal, salt water	20	9
Cerastoderma edule	Cockle	intertidal, salt water,	48	8
Nucella lapillus	Dog whelk	Rocky shore, salt water	21	4

Table 16. Shell by weight

Discussion

C.3.3 In this assemblage oyster, mussel and cockle are species which are hinged, although none are preserved hinged. Dog whelk is a species of gastropod. None have survived whole. Preservation of the assemblage is moderate with the more fragile species being more fragmentary.

C.3.4 Within context 54 (Phase 2) one oyster shell has a central hole 0.5cm in diameter. In addition one cockle shell has a central hole 0.2cm in diameter. it is unclear whether this is a result of natural predation, preservation or human action.

C.3.5 The majority of marine shell recovered was from levelling layers dating either to the 15th/16th century or the 18th - 19th century (Phases 2 and 4), and probably represents accidental incorporation within these deposits.

C.3.6 This assemblage shows that throughout the post-medieval period marine molluscs were a common food resource. Due to the site's location within a coastal town marine molluscs would have provided an inexpensive meal or snack easily bought on a market stall.

Statement of Research Potential

C.3.7 This site shows limited potential as the size of the assemblage is relatively small for its period and urban setting. The assemblage has been recovered from levelling deposits rather than as a result of deliberate disposal, and therefore can provide only limited understanding of human interaction.

Further Work and Methods Statement

C.3.8 No further work is required at this stage, however a sampling strategy should be attached to the project design if further work it undertaken on the site.

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APPENDIX E. OASIS REPORT FORM

Project Details

OASIS Number	oxfordar3-68748		
Project Name	Evaluation at the Former Dairy Depot, Austin Street, King's Lynn		
Project Dates (fieldwork) Start	02-12-2009	Finish	10-12-2009
Previous Work (by OA East)	No	Future Work	Unknown

Project Reference Codes

Site Code	ENF123670	Planning App. No.	09/01577/F
HER No.	NHER 53200	Related HER/OASIS No.	

Type of Project/Techniques Used

Prompt	Direction from Local Planning Authority - PPG16
Development Type	Small Scale (e.g. single house)

Please select all techniques used:

☐ Aerial Photography - interpretation	☐ Grab-Sampling	☐ Remote Operated Vehicle Survey
☐ Aerial Photography - new	☐ Gravity-Core	☒ Sample Trenches
☐ Annotated Sketch	☐ Laser Scanning	☐ Survey/Recording Of Fabric/Structure
☒ Augering	☐ Measured Survey	☐ Targeted Trenches
☒ Dendrochronological Survey	☐ Metal Detectors	☐ Test Pits
☐ Documentary Search	☐ Phosphate Survey	☐ Topographic Survey
☐ Environmental Sampling	☐ Photogrammetric Survey	☐ Vibro-core
☐ Fieldwalking	☐ Photographic Survey	☐ Visual Inspection (Initial Site Visit)
☐ Geophysical Survey	☐ Rectified Photography	

Monument Types/Significant Finds & Their Periods

List feature types using the NMR Monument Type Thesaurus and significant finds using the MDA Object type Thesaurus together with their respective periods. If no features/finds were found, please state "none".

Monument	Period	Object	Period
Layers	Medieval 1066 to 1540	pottery	Medieval 1066 to 1540
Layers	Post Medieval 1540 to 1901	pottery	Post Medieval 1540 to 1901
post-holes	Post Medieval 1540 to 1901	animal bone	Post Medieval 1540 to 1901

Project Location

County	Norfolk	Site Address (including postcode if possible)	
District	West Norfolk	Former Dairy Site, Austin Street, King's Lynn Norfolk PE301QH	
Parish	King's Lynn		
HER	Norfolk		
Study Area	2000m2	National Grid Reference	TF 62126 20400

Project Originators

Organisation	OA EAST
Project Brief Originator	Ken Hamilton NLA
Project Design Originator	Aileen Connor OA East
Project Manager	Aileen Connor
Supervisor	Rachel Clarke

Project Archives

Physical Archive	Digital Archive	Paper Archive
Norfolk Museums and Archaeology Service	OA East/Norfolk Museums and Archaeolog	Norfolk Museums and Archaeology Service
ENF123670	ENF123670	ENF123670

Archive Contents/Media

	Physical Contents	Digital Contents	Paper Contents
Animal Bones	☒	☒	☐
Ceramics	☒	☒	☐
Environmental	☒	☒	☐
Glass	☒	☒	☐
Human Bones	☐	☐	☐
Industrial	☐	☐	☐
Leather	☐	☐	☐
Metal	☒	☒	☐
Stratigraphic		☒	☐
Survey		☐	☒
Textiles	☐	☐	☐
Wood	☐	☐	☐
Worked Bone	☐	☐	☐
Worked Stone/Lithic	☐	☐	☐
None	☐	☐	☐
Other	☐	☐	☐

Digital Media	Paper Media
☒ Database	☐ Aerial Photos
☐ GIS	☒ Context Sheet
☐ Geophysics	☐ Correspondence
☒ Images	☐ Diary
☒ Illustrations	☒ Drawing
☐ Moving Image	☐ Manuscript
☒ Spreadsheets	☒ Map
☐ Survey	☒ Matrices
☒ Text	☐ Microfilm
☐ Virtual Reality	☐ Misc.
	☐ Research/Notes
	☒ Photos
	☒ Plans
	☒ Report
	☒ Sections
	☐ Survey

Drawing Conventions

Plans

Limit of Excavation

Illustrated Section S.14

Archaeological Deposit

Archaeological Feature

Excavated Slot

Modern Deposit

Cut/Deposit Number **118**/119

Sections

Limit of Excavation

Cut

Cut-Conjectured

Deposit Horizon

Deposit Horizon - Conjectured

Intrusion/Truncation

Top Surface/Top of Natural

Break in Section/
Limit of Section Drawing

Cut Number **118**

Deposit Number 117

Ordnance Datum 18.45m OD

Stones

Charcoal

Tile

Brick

Bone

Shell

Convention Key

Figure 1: Location of site (blue) with the development area outlined (red) and HER plot

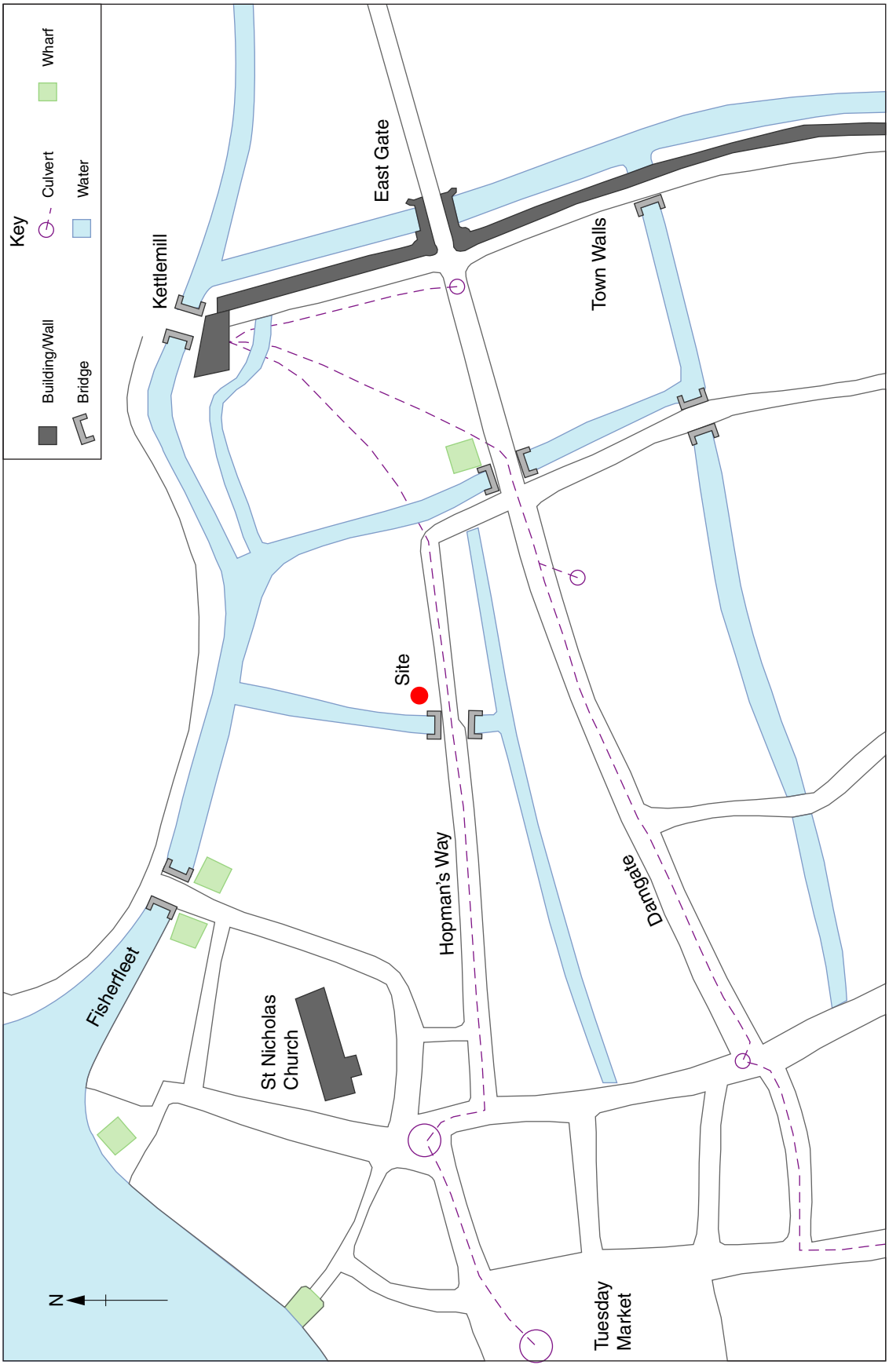
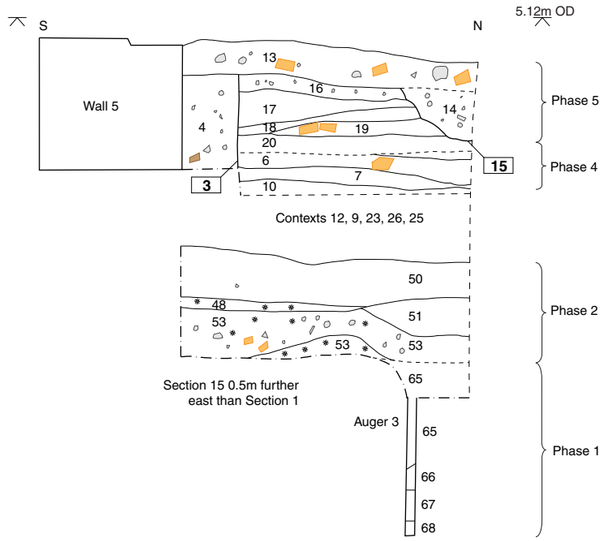
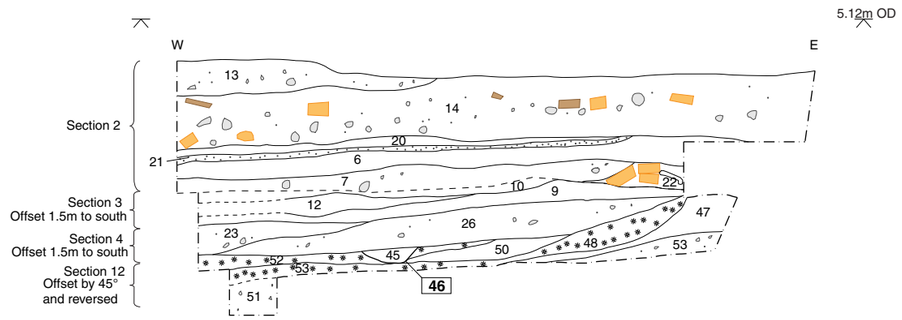


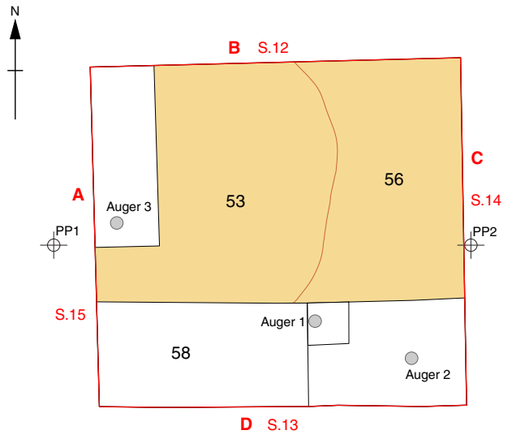
Figure 2: Detail from map of King's Lynn in the mid-16th century (after Parker 1971, fig 6)

A: Composite section of sections 1 and 15

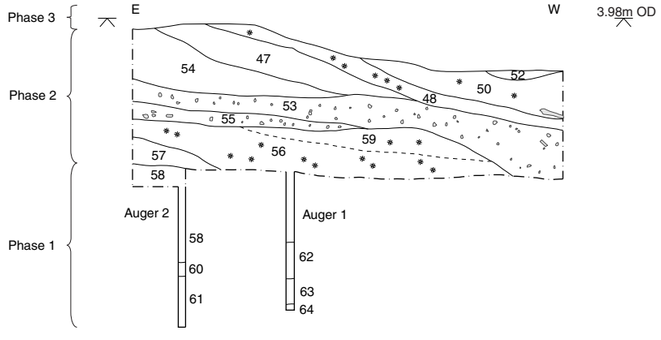


B: Composite section of sections 2, 3, 4 and 12

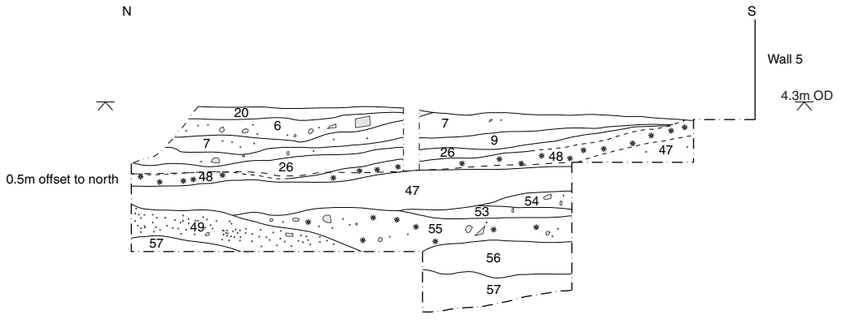




D: Section 13 (augers projected)



C: Composite section of sections 5 and 14



0 2 m
1:40

Figure 3: Plan of Phase 1 and 2 deposits and with main trench sections illustrating Phase 1 to 5 deposits

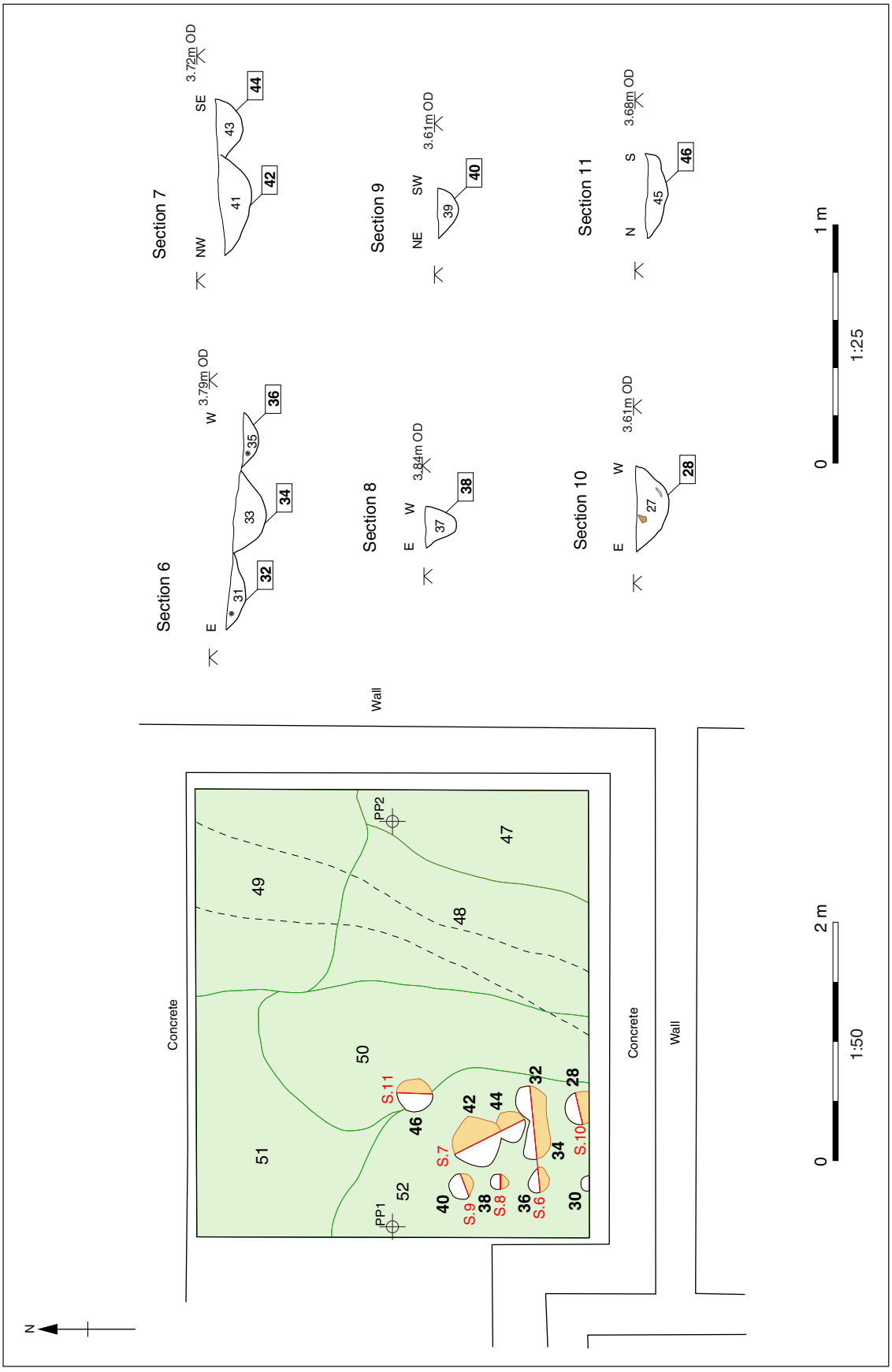


Figure 4: Plan of Phase 2 deposits and plan and sections of Phase 3 structure 1

Plate 1: Phase 1 and 2 deposits

Plate 2: Phase 1 and 2 deposits dipping to the west

Plate 3: Excavation of Phase 3 Structure 1 showing sloping nature of underlying deposits

Plate 4: Detail of Structure 1 with Phase 5 brick and concrete foundations in foreground

Plate 5: Flooding of lower levels of the trench

Plate 6: Working shot showing trench with location of Lidl site (MNF31393) in background

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