Archaeological monitoring of land at Deneside to the rear of 59 King Street, Great Yarmouth, Norfolk.



Prepared for Mr M Cutajar

Giles Emery November 2010

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Archaeological Monitoring of land at Deneside to the rear of 59 King Street, Great Yarmouth.

Location: Great Yarmouth
Grid Ref: TG 5268 0711
NHES Event No: ENF125279

Date of fieldwork: 16th-17th September 2010

1.0 Introduction

Norvic Archaeology was commissioned and funded by Mr M. Cutajar to undertake archaeological monitoring on groundworks associated with the construction of domestic housing. The site consisted of a rectangular plot of land measuring 87m² fronting onto Deneside, to the rear of 59 King Street, Great Yarmouth (Figure 1, below). The plot was formerly occupied by two brick built garages.

The archaeological monitoring was undertaken to fulfil a planning condition (planning application no. 06/08/0330/F) set by Great Yarmouth Borough Council and in accordance with a brief issued by Norfolk Landscape Archaeology (NLA Ref: 42026). The aim of the monitoring brief was to preserve by record the presence/absence, date, nature, and extent of any buried archaeological remains and features. This report presents a brief description of the methodology followed, the results and the archaeological interpretation of the monitoring.

On completion of the project, the site archive will be offered for long term deposition with Norfolk Museums and Archaeology Service, following the relevant policy on archiving standards.

2.0 Summary of Results

An inundation layer of 'beach sand' was identified at the base of six foundation pits at a depth of between 1.7-2.10m below the modern land surface (at a depth of c. 4.65m OD). Borehole data from the area suggests that a further 2m of medieval deposits may be present below this beach sand, laying above the sand and shingle spit.

The sand was sealed below extensive spreads of imported make-up dated from the 16th to 17th century, which also included residual medieval artefacts including pottery sherds and glazed roof tile fragments. This activity may be associated with the documented levelling of the area around 1678 and may have included the levelling of previously imported and mounded soils used to strengthen the back of the town walls during the Spanish threat in the 16th century.

Cartographic evidence shows that by the mid-18th century the site occupied part of a mostly open block, bordered by modest housing or cottages. Remnants of a semi-sunken cellar with a simple cobbled floor may relate to these buildings. By the late 1800s the site was defined as a plot extending to the rear of 59 King Street, in the form of a gated yard with outbuildings or stables in a long east to west block. A subterranean 19th century brick well and cistern encountered during the groundworks may have provided water from this yard to surrounding properties. By 1900, Ordnance Survey plans depict two sheds or garages occupying the majority of the plot, divided by a central path. The site remained as similarly arranged garages throughout the 20th century until recent demolition and clearance.

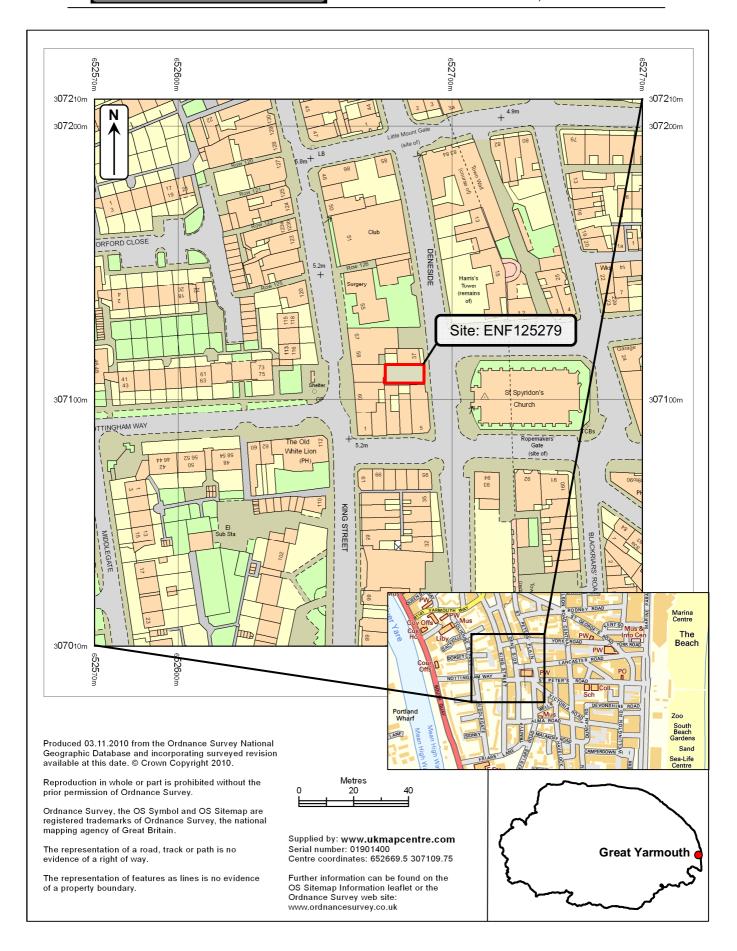


Figure 1: Site location plan



3.0 Geology and Topography

The walled medieval town of Great Yarmouth stands on a long spit of sand, which effectively closes the mouth of the formerly wide estuary of the Rivers Yare, Bure and Waveney. The natural subsoil is the sand and shingle of the spit, overlain by medieval and later soils. The site lies close to the highest point of the spit at c. 6.52m OD.

A borehole located c.140m to the north of the development site at 48a and b Deneside (c.7m OD) sunk for the Great Yarmouth Archaeological Mapping Project indicated natural subsoil to lie at about 5m below the present ground surface, with post-medieval make-up material above (NCL 2006).

Subsequent piling at 48a and b was subject to an archaeological watching brief, this work identified beach sand at a depth of around 1m OD, above which were deposits of sandy material from which a small number of post-medieval brick and pottery sherds were collected. Post-medieval dumping of material is believed to have occurred here in the 1670s, some of the material possibly being derived from earlier levelling material placed behind the walls in the later 16th century (Penn 2009). This dumping and levelling enabled urban development to take place in this area in the early years of the 18th century. The results compare well with those of archaeological work conducted on the eastern side of Deneside, on a site immediately behind the town wall, where a great depth of post-medieval make-up indicated the ramping or strengthening of the wall against artillery attacks (Crawley 2006).

Several other boreholes drilled as part of the Great Yarmouth Archaeological Map (chiefly Boreholes 044 to 048, which include a hole by the side of St Spyridon's Church) demonstrated that the area of the site was also heavily built up from the 16th century, again probably as part of an effort to strengthen the town walls. Overall, there may be up to 4 metres of archaeological deposits in the area of the site (Ken Hamilton *pers. comm.*).

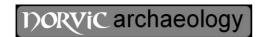
4.0 Brief Archaeological and Historical Background

Relevant research into the historical background of the area of the site can be found in a Desk Based Survey of 48a and b Deneside (Penn 2007). The report reviewed documentary and cartographic resources in detail, alongside archaeological observations in order to evaluate the archaeological potential of the area. Much of the information presented here draws directly from this well researched and comprehensive piece of work. A wider summary of the historic character and development of the town along with a large bibliography of documentary sources can also be explored through the Great Yarmouth Archaeological Map – an online resource (http://www.gyam.org.uk/).

Summary background relevant to the development site

Origins of the town

The development site is situated within the town walls of Great Yarmouth, part of the medieval town. Almost nothing is known of the pre-Conquest history of Great Yarmouth, which was first recorded in Domesday Book (1086), where it is listed as one of Norfolk's borough towns. It is likely, however, that the town began as a fishing settlement in the Late Saxon period, perhaps seasonal at the outset, to take advantage of the autumn herring season. It was established on the shingle and sand spit that had developed across the mouth of the estuary.



• Medieval occupation of the Great Yarmouth spit

In 1208 the town received its charter from King John. About this time the existing settlement was probably also laid out anew to some extent, with long curving streets evident on all the maps, possibly following the natural shape of the spit (although there is no firm evidence that Howard Street - Blind Middlegate Street - represents an early river shore). The Rows developed as subdivisions between the streets, and perhaps originated as single landholdings running down to the water, soon divided; the town was then unwalled and stood open to the sands on the east side. The area later known as Deneside lay on the sand just east of the occupied area, where the autumn herring fair took place. Until the expansion of Great Yarmouth as a resort town with a 'front' along the beach, the face of the town was on the riverside, with the King Street/Deneside area at the 'back' of the town.

The remarkable situation of the town on its narrow spit dominates its topography and archaeology, with the build-up of wind-blown sand leading to very deep stratification in places and good sequences of archaeological deposits (Rogerson 1976). Medieval levels thus survive beneath later deposits and include a late 13th-century 'beach' surface with associated pottery (found under flood deposits), evidence of the great floods of 1287 that overwhelmed the estuary and the lower parts of the town. Sea levels increased until c. 1500 (see Penn 1996). Although fairly limited in scale, several excavations and observations in the area, including the borehole data obtained as part of the Great Yarmouth Mapping Project, (NCL 2006) have revealed evidence of the earlier topography of the town surviving as a deep build-up of archaeological deposits of several meters above the sands of the spit.

• The Herring Fair

The herring and its fishermen from the Cinque Ports were responsible for the establishment of a major settlement here and the growth of the medieval port. A herring fair was held for forty days each autumn, when cured and salted herrings were sold to merchants from across England and the continent. Historically, the site lies in the area once occupied by this medieval market place which remained as an open market place and the site of the enduring herring fair until the late 1600s.

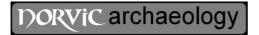
• The Town Wall

Following a grant of murage in 1261 by Henry III, the building of the imposing town walls was carried out between 1285 and 1341. The medieval town wall appears to have stood at the foot of a low 'cliff' with King Street at the top. In the 16th century, during the period of Spanish threats, the back of the walls were strengthened by 'rampiring' or mounding with soil, behind the East Mount (built in 1569) (NHER 4294).

• Urban development and Relevant Cartographic Evidence

Despite a period of rebuilding between 1570 and 1650, the basic medieval settlement plan survived into modern times, though suffering from 'internal colonisation' of former gardens and open spaces and subdivision of properties. A good series of maps show the street and row pattern surviving into the early 20th century, becoming increasingly built over, until the surviving pattern largely disappeared when clearance took place in the 1930s, which was followed by destruction during WWII.

A series of maps beginning in 1585 show that until the relatively modern expansion of the town, the Site fell in an area of open land between the medieval rows reaching the western side of King Street and the town walls to the east. This long area of open land along the eastern edge of the town remained so until the late 1600s. The extensive Borough Archives have been used by Paul Rutledge to reconstruct the development of the town (Rutledge



1990) with the most significant record relating the development site being that of the sale of the area by the town in 1677. Blomefield (X1 (1810), 398) states that:

'this year, also the ground betwixt the walls and the east side of the town, from the market-place to Friars Lane, was sold....to sundry persons, to build upon. 1678. The ground between the walls and the new buildings was levelled, the rope-makers' posts pulled up, and the whole made fit for passage'.

Paston's map of 1688 shows that although the Rows are densely built up, the houses still had gardens, and Deneside has yet to be developed into urban properties. Corbridge's map of 1724 is schematic, but shows Deneside as then mostly developed, with the open area between the Rows and the walls now occupied by several north to south aligned urban blocks. These are depicted in more detail by Swinden's map of 1753 surveyed about 1750 and shown again (revised) as an inset on the better-known map of Faden 1797 (Figure 2, below). This map was the first to accomplish an accurate mapping of the town, showing each of the Rows and buildings on plan. The block occupied by the site shows no development of larger housing fronting King Street but instead reveals an open area of land bordered by modest housing on an east to west alignment, probably indicative of relatively poor housing in the form of cottages.

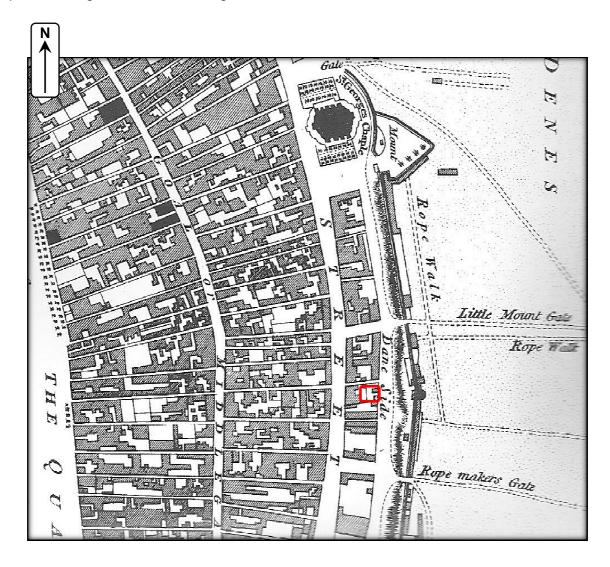


Figure 2: Extract from Faden's Map of 1797 showing the site location and wider area.



The first edition OS map of 1885 (Figure 3, below) shows a defined plot of land as an extension of the parcel occupied by 59 King Street in the form of a gated yard with outbuildings or stables in a long east to west block. By 1900, Ordnance Survey plans depict two sheds or garages occupying the majority of the plot, divided by a central path. The site remained as similarly arranged garages throughout the 20th century until recent demolition and clearance.

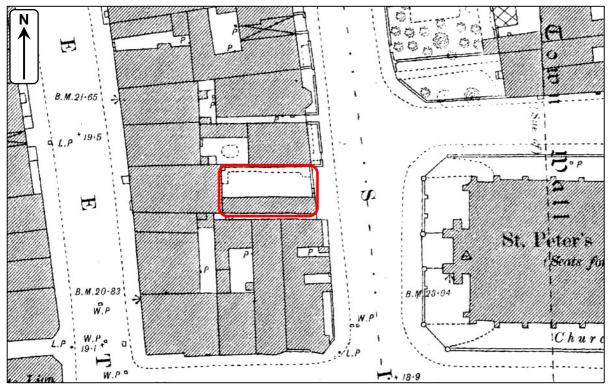


Figure 3: Extract from the 1885 Ordnance Survey map showing the site location.

5.0 Archaeological Observations

The following information has been sourced from the Norfolk Historic Environment Record (NHER). Sites of particular relevance or interest recorded by the Historic Environment Record which fall in relatively close proximity to the development site (*c.*100m radius) include:

NHER 27368 & 27589: The locations of several WWII air raid shelters (the semi-sunken type observed from surviving aerial photographic evidence).

NHER 4325: 35m to the south-west of the site a clinker built ship was discovered at c. 4.5m depth during pipelaying in 1886. It was later re-exposed in 1911 and thought to be a Viking type of vessel.

NHER 4338: St Spyridon's Greek Orthodox Church opposite the site. A listed gault brick building and formerly the church of St Peters constructed *c*.1831-1833 it has served as a Greek Orthodox church since 1964.

NHER 1503: A late medieval well was discovered during extensions to the Working Men's Club at 51 King Street during 1974 (a Listed 18th century building with a barrel vaulted cellar).

NHER 4294: The line of the medieval town wall and defences runs north to south *c*. 35m to the east of the development site. They were originally constructed in the 13th to 14th century and 11 of the 16 towers till survive. The East Mount was constructed in c.1588 in response to the threat from the Spanish Armada and a moat in the 17th century during the Civil War period.



Several listed buildings of 17th, 18th and 19th century date are located on either side of King Street which include the early 17th century elements of the Old White Lion public house on King Street (NHER 25101) and Woodhall Hotel at 15 Deneside, which incorporates the foundations and wall remnants of a 14th century defensive tower (NHER 42944).

6.0 Methodology

The objective of the archaeological monitoring was to record any archaeological evidence revealed during the excavation of foundation trenches. These comprised of 6 foundation pits c. 2m deep and ring beam trenches c. 0.75m in depth.

The foundations were excavated using a 3 ton 360° rubb er tracked machine with a ditching bucket, although a small toothed bucket was used to remove concrete and other subsurface obstructions.

Spoil, exposed surfaces and features were scanned with a metal detector (Minelab XTerra 705). All metal-detected and hand-collected finds were retained for inspection, other than those which were obviously modern.

All archaeological features and deposits were recorded using Norvic Archaeology *pro forma* sheets. Trench locations, plans (Figure 4) and sections (Figure 5) were recorded at appropriate scales and digital images were taken of all relevant features and deposits.







Plates 2 and 3: Illustrative section photographs showing Pit 4 (looking north) and Pit 6 (looking east) 1m scale.

7.0 Results (Appendix 1a)

• 'Beach sand' (?Medieval)

The deepest deposit encountered at the base of all six foundation pits was a loose, pale-yellow 'beach sand' (14). This material lay at between 1.7m to 2.10m below the modern land surface. It appeared to be sterile of finds and may represent a medieval inundation deposit of wind-blown or water-borne beach material.

• **Primary Make-up Layers** (c. 16th to 17th century activity)

Above the 'beach sand' was a sequence of dirty sand horizons which appear to be representative of imported deposits rather than naturally accumulated material:

Directly above the clean sand was a firm organic stained silty-sand (13) c. 0.2m in depth. This dark-greenish grey deposit contained lenses of residual material in the form of sand, peat-ash and loam along with occasional charcoal pieces and occasional shells (residual food waste).

Above (13) was a 0.15m to 0.4m deep horizon of soft, finely laminated layers which comprised of pale greyish-yellow sand and very silty greyish-brown sands (12).

This was sealed below a layer of very soft, pale-brown sand up to 0.3m deep (11) from which a small assemblage of cultural material was collected. This included a small quantity of residual food waste of shell and butchered animal bone (including cod, goose and sheep or goat). The pottery collected indicates a likely 16th century date for this deposit, although a small number of medieval pottery and roof tile fragments were also present indicating either residuality or a mixed deposition history.

• **Secondary Make-up and levelling Layers** (c. 16th to 17th century activity)

Above layer (11) was an extensive but very thin layer of dark greenish-grey very silty sand (10) which measured just 0.03m in depth. Above this was an equally thin layer of sand mixed with peat ash. These layers may represent a short lived trample and levelling horizon episode within a continued sequence of imported make-up deposits.

Above these was a layer of soft, pale yellowish grey dirty sand, generally measuring c. 0.18m in depth (08) sealed by another thin, yet extensive layer. This comprised of a soft layer of dark-reddish to orange, sandy-peat ash up to 0.06m in depth (07).

Above the probable levelling spread (07) was a further make-up layer (05). This measured 0.22m deep and comprised of a friable and well mixed deposit of grey silty-sand. This deposit was flecked by shell and charcoal and a few fragments of pottery were collected from it, again a mix of medieval to post-medieval sherds.

A less extensive gritty textured ashy layer was identified above (05), from which a single tobacco pipe stem and a mix medieval and post-medieval pottery sherds were collected (06).

A slightly different sequence of deposits was recorded in foundation pit 5, where context (11) was notably deeper and the extensive horizons described above were not present. Here the expected beach sand deposit was encountered 0.4m further down than expected, suggesting a possible slope morphology, with make-up deposits appearing slightly deeper



by necessity. A more mixed deposit of silty-loam (20) replaced the extensive horizons noted across the rest of the site.

• **Soil Make-up** (c. 17th century activity +)

Sealing the horizons already described was a friable brownish-grey sandy-loam up to 0.4m deep (04). Although this material more resembles an accumulated soil, it may originally have consisted of further imported make-up. Of the finds collected from it, a similarly mixed collection of medieval to post-medieval pottery, brick and tile was exhibited, possibly allowing a more defined 17th century date for this 'landscaping' activity.

A lens of metalworking waste (23) was identified in the upper levels of this soil which, although dumped on the site from an unknown source, indicates that iron smelting took place in the general vicinity.

Cut Features

Oval Pit ([18]) (c. 15th to 17th century activity)

An oval pit ([18]) was identified in the base of foundation pit 4 which truncated the 'beach sand' layer (14). The pit measured c. 0.5m in diameter and c. 1m in depth. It contained a soft, silty-sand from which a single sherd of late medieval to early-post medieval pottery (15th to 16th century date) was collected.

Small Pit ([15]) (c. 16th to 18th century activity)

A small pit was identified in the east facing section of foundation pit 2, which had truncated the make-up layers, but was sealed below the soil layer (04). This contained a mortar flecked, mid-grey silty-loam (16) sealed below a dark-grey ashy loam rich in crushed mortar (17). The small quantity of pottery collected from the fill suggests a post-medieval date.

Demolition Pit ([21]) (c. 19th to 20th century activity)

A large pit containing very loose demolition waste ([21]), in the form of crushed mortar and 19th to 20th century roof tile was observed in the area of foundation pit 4. A large fragment of 18th century stoneware mineral bottle was collected as a residual find from the fill (22).

• **Recent Activity** (19th to 20th century)

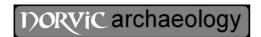
Above the soil layer (04), was a fairly thin layer of soil rich in lumps of sandy mortar (03) which may be indicative of local demolition or construction from the 19th century. Above this was a soil layer (02) mixed with a variety of inclusions, including small pieces of bone, shell, coal and stones – including a number of flint cobbles. The uppermost soil layer (01) represented a mix of the most recent demolition material and the soil below.

Brick Structures

Well (19th to 20th century)

A red brick well was unexpectedly discovered in the north-eastern corner of the site, just below the modern surface. It was capped by a thin slab of Portland stone which when removed revealed a 6m deep well, holding c. 1m of water at its base. This well may once have served as a pumped water source, as evidenced by the presence of an internal lead pipe with a simple filter casket which reached down into its base. As such it may have been constructed as a





subterranean water source, with the dome capping of brick and stone slab an Plate 4: View of the uncapped well (1m scale).

integral part of its original construction. To allow the foundations to be safely instigated the top 1.5m was removed by machine and the well infilled with a suitable aggregate.

Cistern (19th to 20th century)

Another subterranean structure, also constructed of Norfolk Red brick and chalky limemortar, was discovered in the path of the ring beam between foundation pits 2 & 3. This rectangular cistern exhibited the partially damaged remains of a brick vaulted roof, with possible access at its north-east corner. The structure's internal dimensions were 1.75m by 1.10m and it contained a mix of soil and modern rubble. An inflow conduit was identified in its northern wall and the structure appears to have served as a grey-water collection tank. The base of the cistern was not reached but was probed and thought to exceed 2m in depth.

?Cellar (18th to 19th century)

Both the cistern and the well truncated the very shallow remnants of an east to west aligned wall constructed in Flemish bonded red brickwork. This wall was observed at a depth of c. 1.2m below the current land surface. The wall returned south in foundation pit 6. On the southern, internal side, the patchy remnant of a smooth, flint cobbled floor set with a soft lime-mortar was observed. This structure may represent a partially sunken cellar for a previous building on the site. No disturbance relating to this feature was identified in the southern half of the site, indicating a fairly small cellared area, probably no more than 3m in width.

Wall foundations (19^{th to} 20th century)

Fragments of very shallow brick wall foundations were observed across the site just below the current surface, which were the remnants of former garages on the site.

8.0 Finds Analysis (Appendix 2a)

• Pottery By Sue Anderson

Introduction

Twenty-nine sherds of pottery weighing 1330g were collected from nine contexts. Table 1 shows the quantification by fabric; a summary catalogue by context is included as Appendix 3.

Description	Fabric	Code	No	Wt/g	Eve	MNV
Medieval coarseware	MCW	3.20	1	5		1
Local medieval unglazed	LMU	3.23	1	11		1
Yarmouth-type glazed wares	YARG	4.11	1	39		1
London-type ware	LOND	4.50	1	4		1
Rouen Ware	ROU	7.34	1	21		1
Andenne Ware	ANDN	7.62	1	79	0.39	1
Total medieval			6	159	0.39	6
Late medieval and transitional	LMT	5.10	6	117		5
Raeran/Aachen Stoneware	GSW3	7.13	2	347	0.19	2
Low Countries late medieval	LCLM	7.201	2	152		2
Dutch-type redwares	DUTR	7.21	2	30		2
Total late medieval			12	646	0.19	11
Glazed red earthenware	GRE	6.12	8	310	0.15	8
Cologne/Frechen Stoneware	GSW4	7.14	2	20		2
Westerwald Stoneware	GSW5	7.15	1	195	1.00	1
Total post-medieval			11	525	1.15	11
Grand Total			29	1330	1.73	28



Table 1. Pottery quantification by fabric.

Methodology

Quantification was carried out using sherd count, weight and estimated vessel equivalent (eve). A full quantification by fabric, context and feature is available in the 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. Imports were identified from Jennings (1981). Form terminology follows 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.

Pottery by period

Medieval

Two sherds of medieval greyware (MCW, LMU) were recovered. A small fragment of flaring jar rim was found in P4 layer (11), possibly a Low Countries greyware, and a body sherd of LMU with an applied thumbed strip was found in P6 layer (5).

Four sherds of glazed wares were recovered. These comprised one body sherd of Yarmouth-type glazed ware with an applied thumbed strip and greenish-yellow glaze (layer (6), P2), a small body sherd of green-glazed London-type ware with an applied faceted strip (layer (8), P2), a burnt body sherd of Rouen Ware with applied decoration (layer (11), P5) and an unglazed redware collared jug rim, probably from Andenne or possibly northern France (layer (5), P6).

Late medieval

Twelve sherds of late medieval pottery were recovered, the majority of which were LMT. The LMT sherds were all body or base fragments and forms could not be identified. Other sherds of this period were Rhenish and Netherlands imports, including two sherds of Low Countries late medieval redware jugs, one with a thumbed base, two sooted sherds of Dutch-type redware (possibly from small cauldrons or skillets), and two sherds of Raerentype stoneware jugs (a rim and a base).

Post-medieval

Glazed red earthenwares were recovered from layers (4) and (11) and pit fill (16) and included fragments of frying-pan type skillets, a bowl, a handled bowl and a dish. Two body sherds of Frechen 'tiger ware' bottles or jugs were recovered from (4) and (6). A large fragment of a Westerwald mineral water bottle, with a spa mark in the form of a scratched short-armed cross in a blue and incised circle, was found in pit fill (22).

Pottery by context

A summary of the pottery by feature/context is provided in Table 2:

Feature	Context	Interpretation	Fabric	Spotdate
	4	Soil make-up	LMT, LCLM, DUTR, GSW3, GRE,	16th-17th c.
		layer	GSW4	
	5	Layer	LMU, ANDN, DUTR	15th-17th c.
	6	Layer (dump)	YARG, GSW3, GSW4	16th c.
	8	Layer	LOND	L.12th-E.14th
				C.
	11	Layer	MCW, ROU, LMT, LCLM, GRE	16th c.
	20	?poss. pit fill	GRE	16th-18th c.
[15]	16	Pit-fill	LMT, GRE	16th c.?
[19]	19	Pit-fill	LMT	15th-16th c.
[21]	22	Pit-fill	GSW5	18th c.



Table 2. Pottery types present by context.

The upper layers of the site contained a mixture of pottery of medieval, late medieval and post-medieval date, and both the layers and the pits which cut them could be dated to the 16th-18th centuries. The sherd of Rouen Ware in layer (8) is presumably residual as late and post-medieval pottery was recovered from the underlying layer (11).

Discussion

A small assemblage of pottery was recovered from the six foundation pits. A small quantity of residual medieval material was present, but the majority of pottery was of 16th-18th century date and appeared to be mixed. As such, the assemblage is of little value for interpreting activity specific to the site, but does help in confirming the suggestion that dumping of waste occurred here in the later 17th century, and the presence of some medieval material could be related to soils redeposited from the earlier dumps behind the city walls. The variety of pottery found is typical of an east coast port, with a number of imported wares occurring alongside the local and regional wares.

Ceramic building material By Sue Anderson

Eleven fragments (1255g) of ceramic building material (CBM) were found in layers (4) and (11) and pit fills (16) and (20), all deposits which can be dated to the post-medieval period based on the pottery assemblage. A full catalogue by context is included in the Appendix 4.

The CBM assemblage comprised three fragments of 'early' brick (all from P5, contexts (4) and (20)) in estuarine clay fabrics (13th-15th-century), and eight fragments of roof tile in fine, medium and coarse sandy fabrics. Two roof tile fragments were probably post-medieval (both from (4)) but the rest were likely to be medieval and included four examples with orange or green lead glaze.

The medieval material is all residual in the contexts from which it was recovered, and is likely to represent either demolition waste from medieval buildings which were demolished at the time the layers were deposited, or redeposited material from disturbed earlier contexts.

Other Artefacts (Appendix 5)
 By Giles Emery

Metal Working Debris

Four fragments of vitreous smelting slag were collected for closer identification from a thin deposit of metal working debris (23) identified in the south facing section of foundation pit 3, dated stratigraphically to around the 17th century. These fairly undiagnostic fragments weigh a total of 332g and may be evidence for local iron smelting as indicated by the rivuleted surface of the larger fragment, however the source of such material is unclear as they appear to form part of a dumped deposit in a sequence of imported make-up deposits. Mineralised fuel pieces within one of the fragments indicate that fuel source for the furnace was charcoal. The slag is most likely residual waste from bloomery smelting, a process used for iron smelting until the 16th century - and later in some areas - when it was superseded by the blast furnace process (Jones (ed.) 2001, 9).

Evidence for metalworking in the area of Market Street has been collected previously in the form of hammerscale, hearth bottoms and slag (predominantly smithing waste) recovered from boreholes in the area of Market Street as part of the Great Yarmouth Mapping Project. This has been suggested at evidence for seasonal metalworking activity taking place in-



between the herring fair (which took up the entire Market Place, including the area that is now Deneside and King Street) (Ken Hamilton *pers. comm.*).

Clay Tobacco Pipe

A single stem fragment of clay tobacco pipe of uncertain post-medieval date was collected from ashy layer (6).

Lead Objects

- Lead Sheet
 - A small, square piece of lead sheet was collected from a post-medieval soil layer (04).
- Lead fragment

A fragment of melted and puddled lead was collected from a post-medieval peat-ash layer (07).

Lead Weight

A conical lead weight with a flat base and an off centre drilled hole was recovered from a post-medieval make-up deposit (11). This object had a slightly worn and pitted surface and was most likely used as a fishing weight or net sinker, although it may have originally been made from a late medieval to post-medieval trade weight. Lead weights are a common find in Norfolk, although those identified as fishing weights are generally a more basic elongated barrel shape in form.

Context No.	Feature No.	SSD	Material	Object	Object Date	Feature Period			
04	ı	ı	Lead	Sheet	-	Post-medieval			
Small sheet, 31mm square, 1.5mm thick. Weighing 13g.									
07	ı	ı	Lead	Fragment	-	Post-medieval			
Melted and pu	ddled lead, max	k. dimensions:	length 70mm, v	vidth 44mm,	thickness 8mm.	Weighing 98g.			
11	-	-	Lead	Weight	-	Post-medieval			
	Max. dimensions: 24mm width, 17mm height. Conical shaped, cast lead with a flat base and an off-centre drilled 7mm hole. Weighing 36g. Probable fishing weight or net-sinker – poss. a reused trade weight.								

Ferrous Nails

Two iron objects were collected, both from a post-medieval soil layer (04); a fairly large square headed nail and a smaller nail or clench bolt fragment.

Context No.	Feature No.	SSD	Material	Object	Object Date	Feature Period			
04	-	ı	Iron	Nail	ı	Post-medieval			
Square headed, square shank, measuring 830mm in length, weighing 27g									
04	-	-	Iron	Nail/? Clench-bolt	-	Post-medieval			
Oval head, ?so	Oval head, ?square shank, 46mm in length – possible clench bolt fragment								

Whetstone Fragment

A small fragment of portable mica schist whetstone or 'hone' was collected from post-medieval deposit (20) identified in foundation pit 5. The fragment is burnt and although most likely rectangular in its original form now exhibits a trapezoid cross section from a long period of use wear. Fine marks preserved on the most sloping side suggest sharpening of a thin bladed knife or tool.

Portable 'hones' of micaceous schist are common from the early medieval period and were often perforated for suspension from a belt. (Adkins 1998, 192). These objects are usually attributed to a source in southern Norway, although other geological sources include



Sweden, Scotland and Ireland. Schist from Norway came to be the preferred choice in hones from the 11th century onwards and from the early to mid 14th century dominated the market. The principal quarry at Eidsborg, southern Norway, dates from the 8th century and exported to most of Western Europe into the mid-20th century (Shopland 2005, 169). Many similar examples are known from other sites in Norfolk attributed from Late Saxon to post-medieval periods and exhibit a variety of forms.

Context No.	Feature No.	SSD	Material	Object	Object Date	Feature Period
20	-	1	Mica schist	Whetstone	?medieval to post- medieval	Post- medieval

Max.: Length 42mm, Width 22mm, Thickness 13mm. Weighing 17g. Burnt fragment of a small, well worn portable whetstone, trapezoid in cross section. Fine marks on most worn side from a thin bladed tool.

Animal Bone By Julie Curl

Introduction

A total of 411g of faunal remains were recovered from six contexts. The assemblage included mammal, bird and fish remains, with butchering seen throughout the assemblage. A summary catalogue of the faunal remains by context is included in Appendix 6.

Methodology

The analysis was carried out following a modified version of guidelines by English Heritage (Davis, 1992). All of the bone was examined to determine range of species and elements present, identifying using a range of comparative reference material. A note was also made of butchering and any indications of skinning, hornworking and other modifications. When possible a record was made of ages and any other relevant information, such as pathologies. Counts and weights were noted for each context with additional counts for each species identified, counts were also taken of bone classed as 'countable' (Davis, 1992) and measureable bone. Measurements of appropriate bones were taken, following Von Den Driesch (1976) for ageing and estimation of species and are available in the digital archive for future reference if required. All information was recorded directly into Excel for quantification and analysis. A basic catalogue is included in the appendix with the full data set forming part of the project archive.

The assemblage – provenance and preservation

A total of 411g of faunal remains, consisting of fourteen pieces, was recovered from six contexts. Table 3 shows the quantification of the assemblage by feature. The remains were produced from layers and pit fills in association with pottery of late medieval to post-medieval date.

Context		Fea	Weight by context		
	?Pit	Layer	Pit	Soil layer	
4				83g	83g
6		5g			5g
11		250g			250g
16		_	59g		59g
19			6g		6g
20	8g		_		8g
Grand Total	8g	255g	65g	83g	411g

Table 3. Quantification (weight) of the faunal remains by feature type.



The remains are in good condition, although most are fragmentary due to butchering and wear. No gnawing was evident on any of the remains, which would suggest waste was disposed of quickly and not available to scavengers.

Species range and modifications and other observations

At least four species were identified in this assemblage. Two were of domestic mammals, one from domestic/wild bird and one of fish. In addition, there are fragments that have no diagnostic features and therefore cannot be reliably identified to individual species and recorded only by group, such as 'mammal'. Quantification of species by feature type is shown in Table 4:

Species		Feature					
	?Pit	Layer	Pit	Soil layer			
Bird - Goose		2			2		
Cattle		1	2	2	5		
Fish		1			1		
Fish - Cod				1	1		
Mammal	1	2	1	1	5		
Sheep/goat		1			1		
Grand Total	1	7	3	4	15		

Table 4. Quantification of species by feature type.

The most frequent remains are those of cattle, with a sub-adult mandible from the layer (11), P3 and other fragments in two other fills. A mature sheep/goat mandible was found in Context (11), P1; the tooth wear on this jaw suggests and animal of at least four to six years at death. Butchering, from skinning and dismemberment, was noted on both the cattle and sheep/goat.

Context (4), P5, produced a caudal vertebrae from a Cod. No obvious butchering was evident on this bone, although little butchering is often needed, depending on methods of cooking. Another fragment of a large species of fish (?Cod) was noted in (11), P5, which had been butchered.

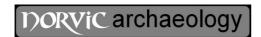
A goose carpometacarpus (wing bone) was recovered from context (6), P2; this bone shows fine cuts that would suggest the wings and feathers were removed, perhaps for fletching or production of quills. A further goose bone, a fercula (wishbone) was seen in (11), P3, which showed a clear chop mark from the division of the bird into joints. The size of the goose bones would suggest they are either domestic or from a larger wild species such as Greylag.

Conclusions

This is a small assemblage that consists of a variety of primary and secondary butchering and food waste. The goose bone is of more interest as this suggests the probable retrieval of feathers for quills or fletching.

Similar small mixed assemblages have been found at other sites at Yarmouth, including at Deneside (Curl, 2006). The use of goose feathers for quills and fletching is widely known, particularly from medieval and post-medieval assemblages.

Mollusc Remains By Julie Curl



Three fills, (11), (13) and (19) produced mollusc remains, weighing a total of 165g and consisting of sixteen pieces. Oyster was identified in all three fills, with both top and base shells seen, showing processing of whole oysters. Whelk and Common Mussel were also recovered from (11) and Common Cockle was also seen in (19).

All of the molluscs in this assemblage are of marine origin and all are commonly found around the east coast. All of the species recovered were regularly collected for food in all periods.

9.0 Conclusions

Historical and archaeological analysis focused on the site suggest that the area may have been subject to significant levelling activity in the post-medieval period, with known occupation beginning in the 18th-century.

An inundation layer of 'beach sand' was identified at the base of all six foundation pits at a depth of between 1.7 and 2.10m below the modern land surface (at c. 4.65m OD). This is notably higher than similar beach sand previously encountered c.140m to the north and may demonstrate some morphology to these sands, which were noted to dip slightly in the south-east corner of the site. Borehole data in the area suggests that a further 2m of medieval deposits may be present below this beach sand, laying above the sand and shingle spit which lies below the medieval core of the town.

The sand was sealed below extensive spreads of imported make-up dated from the 16th to 17th century which also included residual medieval artefacts including pottery sherds and glazed roof tile fragments. This make-up raised the land surface by between 1m and 1.5 metres, an activity that may be associated with the documented levelling of the area around 1678. This effort may a have included the levelling of previously imported and mounded soils used to strengthen the back of the town walls during the Spanish threat in the 16th century. The residual medieval material is therefore difficult to assign to any particular source.

Once levelled, urban development was slow to take place, cartographic evidence shows that by the mid 18th century the site occupied part of a mostly open block bordered by modest housing or cottages. By the late 1800s, the site was defined as a plot extending to the rear of 59 King Street, in the form of a gated yard with outbuildings or stables in a long east to west block. By 1900, OS plans depict two sheds or garages occupying the majority of the plot, divided by a central path. The site remained as similarly arranged garages throughout the 20th century until recent demolition and clearance. A subterranean 19th century brick well and cistern encountered during the groundworks may have provided water from the former yard to surrounding properties. The remnants of a simple cobble floored semi-sunken cellar predated these two structures and may relate to the demolished 18th century cottages. This earlier structure may have survived into the 19th century, a large demolition pit and a spread of mortar and soil may signify its destruction.

10.0 Acknowledgements

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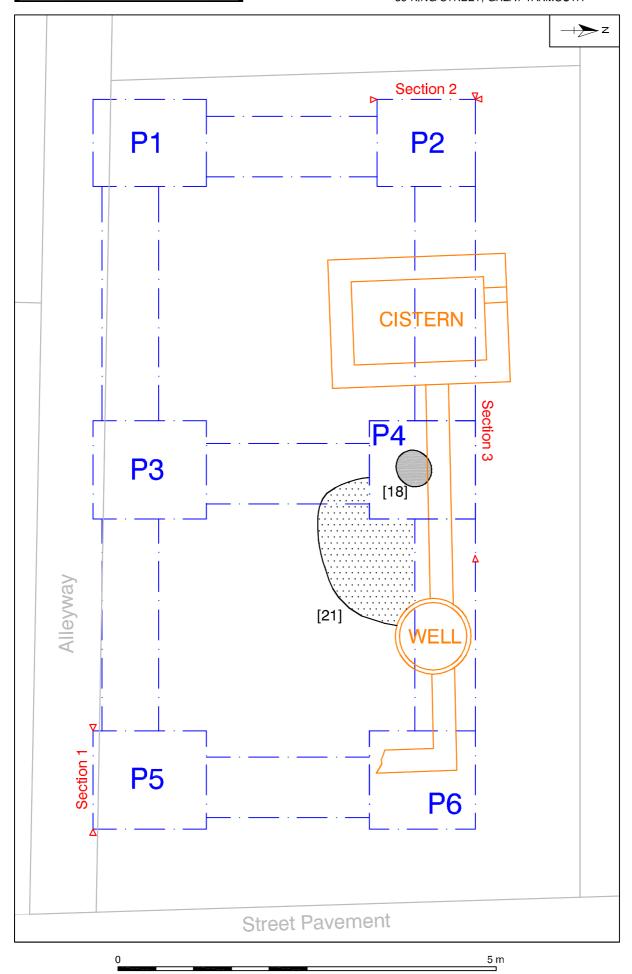
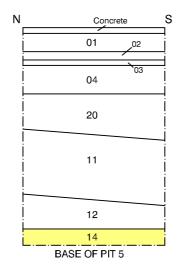
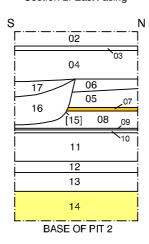


Figure 4. Site plan of Foundation Trenches. Scale 1:50

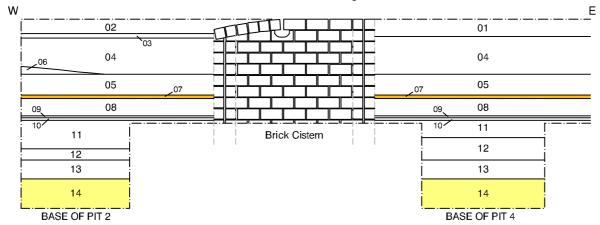
Section 1: West Facing



Section 2: East Facing



Section 3: South Facing



NB: The ground surface of all Sections shown is c. 6.5m OD



Figure 5. Demonstrative Sections. Scale 1:40



Appendix 1a: Context Summary

Context	Category	?Fill of	Brief Physical Description	Interpretation	SSD	Period
01	Deposit		Friable mix of recent demolition and soil, max 0.20m deep	Uppermost layer		Modern
02	Deposit		Friable, mid-grey sandy-loam, occ. cbm, animal bone, coal, oyster shell, rare flint cobbles, mod. stones, 0.15m to 0.40m deep	Soil make-up layer		Modern
03	Deposit		Friable, mid-grey sandy-loam, c. 50% sandy mortar lumps, occ. cbm, 0.15m deep	Construction/ Demolition horizon		19 th Century+
04	Deposit		Friable, mid-brownish-grey sandy-loam, occ. coal, mortar, charcoal, cbm, stone, oyster shell, 0.40m deep	Soil make-up layer		17 th Century+
05	Deposit		V.friable, mid-greenish/brownish –grey v.silty-sand, occ. shell flecks, occ. charcoal flecks, 0.22m deep	Layer		16 th to 17 th C.
06	Deposit		Soft, mid-purplish-grey v.ashy-silty-loam, mod. charcoal, gritty textured, max. 0.20m deep	Layer (dump)		16 th to 17 th C.
07	Deposit		Soft (sticky), dark-reddish-orange, sandy-peatash, mod. charcoal, max. 0.06m deep	Layer		16 th to 17 th C.
08	Deposit		Soft, pale-yellowish-grey, dirty-sand, mod. charcoal, 0.18 to 0.50m deep	Layer		16 th to 17 th C.
09	Deposit		Soft (sticky), yellowish-brown & orange silty-sand & peat-ash mix, 0.03m deep	Layer		16 th to 17 th C.
10	Deposit		Friable, dark-greenish-grey v.silty-sand, 0.03m deep	Layer		16 th to 17 th C.
11	Deposit		V.soft, pale-brown dirty sand, occ. shells, stones, rare charcoal, c. 0.30m deep	Layer		16 th to 17 th C.
12	Deposit		Soft, laminated layers of pale greyish-yellow sands and v.silty grey-brown sands, occ. charcoal, total 0.15 to 0.40m deep	Laminated layers		16 th to 17 th C.
13	Deposit		Firm (dense), dark-greenish-grey v.silty-sand, occ. lenses of sand, peat-ash and sandy-loam, occ. charcoal, mod. shell (inc. oyster & mussel), c. 0.20m deep	Layer		16 th to 17 th C.
14	Deposit		Loose, pale-yellow sand (large-grained)	'Beach Sand' – inundation deposit		'Medieval'
15	Cut		Partially observed steep-sided, slightly concave pit, 0.45m deep	Pit	P2	15 th to 17 th C.
16	Deposit	[15]	Friable, mid-grey silty-loam (sand>>clay), rare charcoal, stones & ,mortar flecks, 0.25m deep	Pit-fill	P2	15 th to 17 th C.
17	Deposit	[15]	Soft, dark-grey ashy-loam, gritty textured, 25% crushed mortar, freq. charcoal flecks, mod. cbm flecks, 0.15m deep	Pit-fill	P2	15 th to 17 th C.
18	Cut		Slightly oval, concave pit c. 0.5m diam. c. 1m deep	Pit	P4	16 th to 18 th C.
19	Deposit	[19]	Soft, mid-greyish-brown silty-sand, occ. oyster shell	Pit-fill	P4	16 th to 18 th C.
20	Deposit		Friable, mid-yellowish-brown silty-loam, occ. cbm, shell, mortar, stones, 0.40m deep	?poss. pit fill	P5	16 th to 17 th C



Context	Category	?Fill of	Brief Physical Description	Interpretation	SSD	Period
21	Cut		Unobserved in plan, steep/near vertical concave sides, >2m diam., c. 1m deep	Large demolition pit		19 th to 20 th C.
22	Deposit	[21]	V.loose, pale-grey, mix of soil & crushed mortar, freq. cbm (Norfolk Red brick, pan tile and peg tile)	Pit-fill		19 th to 20 th C.
23	Deposit		Loose, dark-reddish-grey, gritty sand matrix containing 75% slag waste fragments	Lens		17 th Century+

Appendix 1b: OASIS feature summary table

Period	Feature type	Quantity
	Pit	2
Doot modicy of (1540 to 1000 AD)	Cellar	1
Post-medieval (1540 to 1900AD)	Well	1
	Cistern	1
Modern (1900 to 2050 AD)	Pit	1

Appendix 2a: Finds by Context

Context	Material	Quantity	Weight (g)	Comment
04	Pottery	11	419	
	CBM	4	477	
	Animal bone	4	83	
	Lead – sheet	1	13	
	Nail (iron)	2	40	Poss. includes clench bolt
05	Pottery	3	99	
06	Pottery	3	347	
	Animal bone	1	5	
	T.pipe	1	-	
07	Lead - fragment	1	98	
08	Pottery	1	4	
11	Pottery	5	206	
	CBM	2	170	
	Animal bone	6	250	
	Shell	4	-	
	Lead – weight	1	36	
13	Shell	9	-	
16	Pottery	3	25	
	Animal bone	2	59	
	CBM	1	90	
19	Pottery	1	5	
	Animal bone	1	6	
	Shell	3	-	
20	Pottery	1	30	
	CBM	4	518	
	Animal bone	1	8	
	Whetstone	1	-	
21	Pottery	1	195	
23	Slag	4	332	



Appendix 2b: NHER finds summary table

Period	Material	Quantity
Unknown	Animal Bone	15
	Ceramic Building Material	9
Medieval (1066 to 1539AD)	Pottery	18
	Whetstone	1
	Ceramic Building Material	2
	Clench bolt? - Iron	1
	Lead Weight	1
	Lead Sheet	1
Post-medieval (1540 to 1900AD)	Lead Fragment	1
Post-medieval (1540 to 1900AD)	Nail – Iron	1
	Metal Working Debris – Slag	4
	Pottery	11
	Shell	16
	Tobacco Pipe	1

Appendix 3: Pottery

Context	Fabric	Form	Rim	No	Wt/g	Fabric date range
4	GSW4			1	16	16th-17th c.
4	LCLM			1	7	14th-15th c.
4	LMT			1	9	15th-16th c.
4	LMT			2	60	15th-16th c.
4	DUTR			1	21	15th-17th c.
4	GRE	skillet	BD	1	44	16th-18th c.
4	GRE	skillet	BD	1	14	16th-18th c.
4	GRE	bowl?		1	186	16th-18th c.
4	GRE	dish?	EV	1	19	16th-18th c.
4	GSW3	jug	TRBD	1	43	L.15th-16th c.
5	LMU			1	11	11th-14th c.
5	DUTR			1	9	15th-17th c.
5	ANDN?	jug	COLL	1	79	13th c.?
6	GSW4			1	4	16th-17th c.
6	GSW3	jug?		1	304	L.15th-16th c.
6	YARG			1	39	13th-15th c.
8	LOND			1	4	L.12th-E.14th c.
11	GRE			1	5	16th-18th c.
11	LMT			1	30	15th-16th c.
11	LCLM			1	145	14th-15th c.
11	MCW	jar	FLAR	1	5	L.12th-14th c.
11	ROU	jug		1	21	13th-14th c.
16	LMT			1	13	15th-16th c.
16	GRE			1	5	16th-18th c.
16	GRE			1	7	16th-18th c.
19	LMT			1	5	15th-16th c.
20	GRE	handled bowl		1	30	16th-18th c.
22	GSW5	mineral water bottle	UPPL	1	195	18th c.

Notes:

 $\label{eq:Rim:uppl} Rim: UPPL-upright plain; TRBD-triangular beaded; BD-beaded; EV-everted; COLL-collared; FLAR-flaring.$



Appendix 4: Ceramic Building Material

Context	SSD	fabric	form	no	wt/g	abr	height	peg	mortar	glaze	comments	date
4	P1	msf	RT	2	170				traces			P-med.
4	P3	fsc	RT	1	151			1xR				med
4	P5	est	EB	1	156		59		ms on break		sanded base	13-15 th
11	P1	ms	RT	1	95					0		Med.
11	P5	cs	RT	1	75			1xR			sooted	Med.
16	P2	fsc	RT	1	90	+				G		Med.
20	P5	ms	RT	1	29					0		Med.
20	P5	fs	RT	1	67				traces	G		Med.
20	P5	est	EB	1	192		45				overfired, strawed base	14-15 th
20	P5	est	EB	1	230		>48					13-15 th

Appendix 5: Catalogue of other artefacts

Context No.	Feature No.	SSD	Material	Object	Object Date	Feature Period			
04	-	-	Lead	Sheet	-	Post-medieval			
Small sheet, 31mm square, 1.5mm thick. Weighing 13g.									
07	-	-	Lead	Lead Fragment		Post-medieval			
Melted and puddled lead, max. dimensions: length 70mm, width 44mm, thickness 8mm. Weighing 98g.									
11	-	-	Lead	Weight	-	Post-medieval			
Max. dimension	ons: 24mm wid	th, 17mm heig	ght. Conical sha	aped, cast lead	with a flat base	and an off-centre			
drilled 7mm h	ole. Weighing 3	6g. Probable	fishing weight	or net-sinker – p	oss. a reused	trade weight.			
Context No.	Feature No.	SSD	Material	Object	Object Date	Feature Period			
04	-	-	Iron Nail		-	Post-medieval			
Square heade	ed, square shan	k, measuring	830mm in leng	th, weighing 27	g				
04	-	-	Iron	Nail/?Clench- bolt	-	Post-medieval			
Oval head, ?s	quare shank, 4	6mm in lengt	h – possible cle	ench bolt fragme	ent				
Context No.	Feature No.	SSD	Material	Object	Object Date	Feature Period			
					?medieval				
20	-	-	Mica schist	Whetstone	to post- medieval	Post-medieval			
Maximum dimensions: Length 42mm, Width 22mm, Thickness 13mm. Burnt fragment of a small, well worn portable whetstone, trapezoid in cross section. Fine marks on most worn side from a thin bladed									



Appendix 6: Faunal Remains

Context	SSD	Feature	Qty	Wt (g)	Species	NISP	Age	Butchering	Comments
4	P1	Soil layer	2	66	Cattle	2	а	ch	worn third molar, young adult
4	P5	Soil	2	17	Mammal	1		c, ch	
		layer			Fish - Cod	1			caudal
6	P2	Layer	1	5	Bird - Goose	1	а	fine cuts	carpometacarpus, fine cuts - fletching/quills
11	P1	Layer	2	51	Sheep/goat	1	m	С	mandible, M3 in full wear
11	P3	Layer	2	174	Cattle	1	sa	c, ch	mandible, M3 no full erupted
					Mammal	1		ch	rib fragment
					Bird -	1	а	ch	fercula
					Goose				
11	P5	Layer	2	25	Mammal	1	j	ch	skull frag, med-lge size mammal, prob. Pig
					Fish	1		ch	fragment of large species of fish, ?Cod sp.
16	P2	Pit	2	59	Cattle	2	j	c, ch	
19	P4	Pit	1	6	Mammal	1			shaft fragment
20	P5	?pit	1	8	Mammal	1		c, ch	medium sized mammal (pig/sheep/goat/small deer) rib

Key: NISP = **N**umber of **I**ndividual **S**pecies elements **P**resent.

Age = Estimate age based on fusion of bones and tooth wear; a = adult, j = juvenile, sa =

sub-adult, m = mature animal Butchering: c = cut, ch = chopped